IntelliJ IDEA

Tutorial

2002.10.30 22:21
IDEA build 666
J2SE 1.4.1

ABOUT THIS DOC

this is the INTERNAL version of the Tutorial (red underlined text is internal commentary that does not appear in the PUBLIC version).

- This doc is being written by terry taylor (***terry@intellij.com , (+ 7 921) 916 2841***).
- The idea of this doc:
  - To introduce with simple step-by-step examples the IDEA functionality.
  - To determine what functionality is most important (ie, what is covered in this doc).
  - Verify the functionality of new builds by quickly doing the examples in this doc.

text coding

- red underlined text is internal commentary that does not appear in the PUBLIC version
- ~~text that should not appear in the final document marked by strikethru (the text will not be ready for this release, but should be included in future releases).~~
- empty chapters/sections are marked witih “XXX”
- incomplete chapters/sections are marked witih “X” (search for “ X”)
- terry commentary is marked with “TTT”
- unresolved questions marked with “??

?? questions, suggestions (from TT)

- have users download the latest version of the documentation from www.intellij.com? the docs are changing too fast and i have too little finished, therefore letting users constantly download the latest docs would be the best answer. we could have the user download a zip, unzip to the idea\docs directory.

WHATS NEW

- 20021028 : changed
  - 4. Projects (page 63)
  - 6. Files (page 81)
  - 7. Editor X (page 107)
- 20021028 : major changes to chapters in
  - Part B. Projects / dirs / files (page 61).
- 20021028 : major changes to
  - 3. Basics (page 31).
- 20021025 : updated to build666
  - 2. Installation (page 19).
  - 3. Basics (page 31).
- 20021024 : edited
  - Copyright (page 5) added.
  - index entries added thruout release chapters.
  - 13. Compiler (page 283).
- 20021023 : edited
  - 11. Version control (page 255).
  - 12. Java Doc (page 269).
  - 13. Compiler (page 283).
  - 14. Ant (page 295).
  - 15. Debugger (page 301).
- 20021022 : edited
  - 9. Code Refactoring (page 201) finished.
- 20021018 : edited
  - page 1 of parts a,b,c,d updated.
  - 9. Code Refactoring (page 201)

- 20020919 Chapter 3. Basics (page 31) updated.
- 20020916: Reorganized the doc. Many chapters removed.
- 20020912: Chapter 24. Tags (page 91) added.
- 20020912: Chapter 21. EJB X (page 329) added (uses Sun ejb example).
- 20020909: Chapter 9. Code Refactoring (page 201) partially completed.
- 20020908: Chapter 11. Version control (page 255): history dialog described (local vcs).

to create a PUBLIC version

1. import latest faq/ts/glossary tables. convert to text.
2. delete any incomplete chapters from book. save book as public version.
3. import styles.
4. update book.
5. save as pdf.
6. check:
   - right/left sides
7. in acrobat: add bookmarks to other docs.

Copyright

2002.10.30 22:21

About this doc

20020930TT added this chapter. need to expand.

This tutorial is designed to help you get started with IntelliJ IDEA, the Java development tool from JetBrains, as quickly as possible. IDEA integrates into a compact package an impressive array of functions, and this document introduces the functionality you require to start working effectively with IDEA.

This document contains the following major parts:

Each part contains several chapters, which are described on the first page of the part.

A **List of figures (page 381)** and **Index (page 387)** are also included at the end of this doc.

TOC

Part A. Quick Start

20021028TTT last edit.

The chapters in this part introduce the basics required to start using IDEA. The contents of this part are very similar to the Quick Start document.

1. Documentation / Support (page 15). Provides an overview of IDEA documentation and support.

2. Installation (page 19). Demonstrates how to download and install the Java 2 SDK and IDEA.

3. Basics (page 31). Demonstrates IDEA basis with simple examples.

1. Documentation / Support

add: show how to add components (for plugins), vote, add comments, etc.

20020906TTT: this chapter should list all availabe docs and info. i would also like to have links to the other pdf and help docs once the dir structure of the docs is finalized.

?? list plugin docs and internet websites.

This tutorial should hopefully provide all the information you need to quickly get started with IntelliJ IDEA without any other docs or assistance.

However, if you need other information or assistance, then you can refer to

1.1. Doc newsgroup (jetbrains.intellij.documentation)

jetbrains.intellij.documentation is the newsgroup for IntelliJ documentation and provides:

- Useful information about errors in docs.
- Feedback and recommendations.

You can subscribe to this newsgroup at news://news.jetbrains.com .

1.2. Documentation sources

IntelliJ is constantly developing the user documentation for IDEA. The currently available sources of documentation include:

- **www.intellij.com**
- **www.intellij.net**
- **www.intellij.org**

www.intellij.com

www.intellij.com is the official IntelliJ website and provides the following:

- **Features list**.
- **Downloads** (www.intellij.com/idea/download.jsp). You can download a fully functional version of IDEA.
- Temporary **license keys** (www.intellij.com/idea/evaluate.jsp)
- **Purchasing info**.
- **Online FAQ** (www.intellij.com/support/faq/)

www.intellij.net

www.intellij.net is the IntelliJ Technology Network (ITN) site. The site provides access to

- IntelliJ bugs/features database
- User forums
- Early access builds of IDEA
- Online support

www.intellij.org

www.intellij.org is the website driven by the IntelliJ products community. Topics include

- **Using IDEA** (features, hints, tips, problems)
- **OpenAPI**
- **Plugins**
- **Suggestions**, **ideas**, **requests** d

1.3. Documents / help

- **IDEA Tutorial (this doc)**
- **IDEA Quick Start**
- ~~**IDEA User Guide**~~
- **IDEA Help**
- **IDEA Tool Tips**

IDEA Tutorial (this doc)

This tutorial provides a very detailed step-by-step introduction to the functionality of IntelliJ IDEA.

IDEA Quick Start

The IDEA Quick Start is designed to introduce as quickly as possible the functionality of IntelliJ IDEA with simple step-by-step examples.

~~IDEA User Guide~~

~~The UserGuide describes in detail the complete functionality of IntelliJ IDEA.~~

IDEA Help

IDEA includes context-sensitive online help.

IDEA Tool Tips

20020906TTT ?? should we add a chapter at the end of this doc listing the tooltips?

Each time IDEA is started, a tooltip will appear (if enabled). You can optionally scroll through the entire set of tooltips.

There are several internet websites that provide information and user support for IDEA.

1.4. Support

If you need support, then we first recommend that you consult

- **FAQ**
- ~~**TS**~~
- **ITN database**

~~If you still cant find the answers, then IntelliJ provides support via~~

- ~~**Phone**~~
- ~~**Email**~~

FAQ

For common questions refer to the available FAQs:

- ~~**Chapter 25. FAQ XXX (page 371)**~~.
- **http://www.intellij.com/support/faq/** (may contain more recent info than this doc).
- **Online FAQ** at http://www.jguru.com/faq/home.jsp?topic=IntellijIDEA (questions can be posted at http://www.jguru.com/forums/home.jsp?topic=IntellijIDEA).

~~TS~~

~~For solutions to specific problems refer to~~

- ~~**Chapter 26. Trouble shooting XXX (page 373)**~~.

ITN database

The IntelliJ Technology Network (ITN) database at http://www.intellij.net contains the following:

- **Forums**. IDEA users discuss various topics.
- **Tracker**. Tracks various bugs and fixes.
- **Early Access Program (EAP)**. Contains the latest builds. The problem you are having may be associated with a particular build.

~~Phone~~

- ~~How to get phone support.~~
- ~~What info to gather before the call.~~
- ~~Where to call.~~

~~Email~~

~~Do we have email support?~~

2. Installation

20021029TTT: updated.

Contacts: zheka.

20021003ANN: Somewhere in the beginning of installation instructions, it would be nice either to explain that everything is going about Windows (with reference to the places where installation procedure for other systems is described), or to describe all possible installations. TTT: i will write a description for other operating systems later... this is too complicated right now.

This chapter describes the Windows installation of

2.1. Java 2 SDK (1.4.1 Windows i586)

This section describes how to download and install the Java 2 Software Development Kit (J2SDK).

2.1. Download the J2SE 1.4.1 from **http://java.sun.com/j2se/downloads.html** (the downloaded file is j2sdk-1_4_1-windows-i586.exe.

Note: The rest of this book assumes that you have installed this version of the JDK.

describe path settings???

2.2. Double-click on **j2sdk-1_4_1-windows-i586.exe**. The files are extracted. The dialog “Welcome...” appears.

Figure 2.1. J2SDK installation welcome (321)

2.3. Click **Next**. The dialog “License agreement” appears.

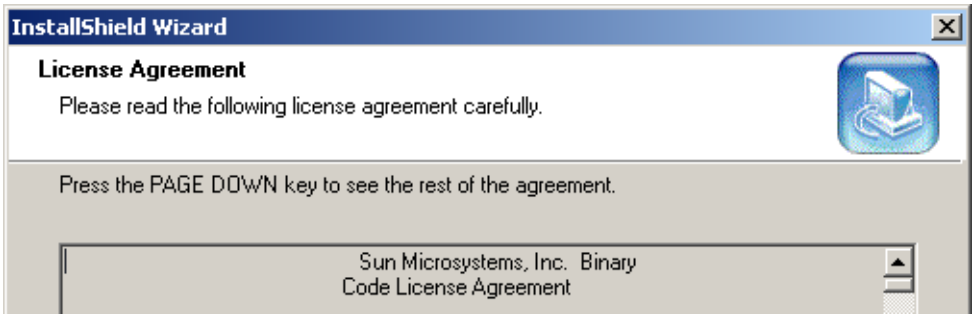


Figure 2.2. J2SDK installation license agreement (320)

2.4. Click **Yes**. The dialog “Choose destination location” appears.

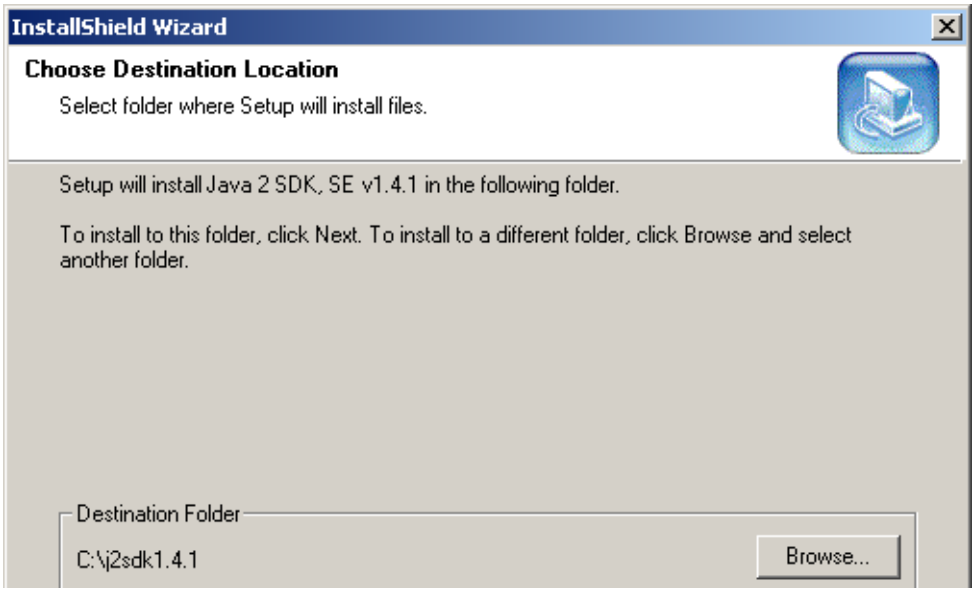


Figure 2.3. J2SDK installation destination (319)

2.5. Click **Next**. The dialog “Select components”appears.

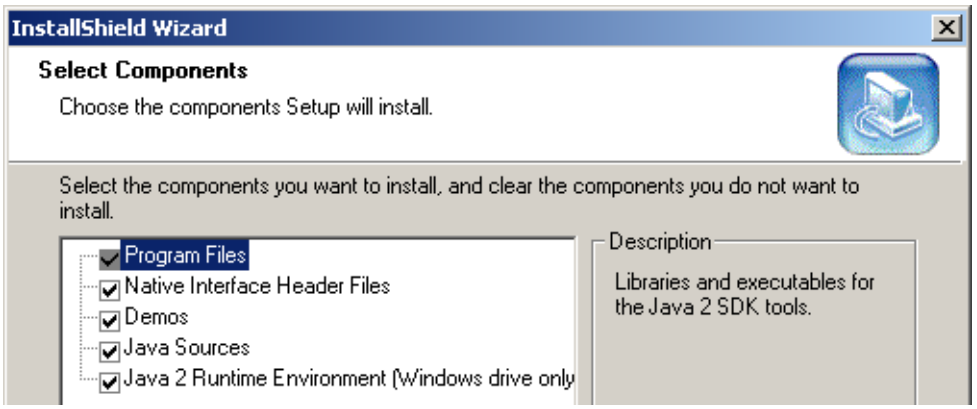


Figure 2.4. J2SDK installation components (317)

2.6. Click **Next**. The dialog “Select Browsers”appears.

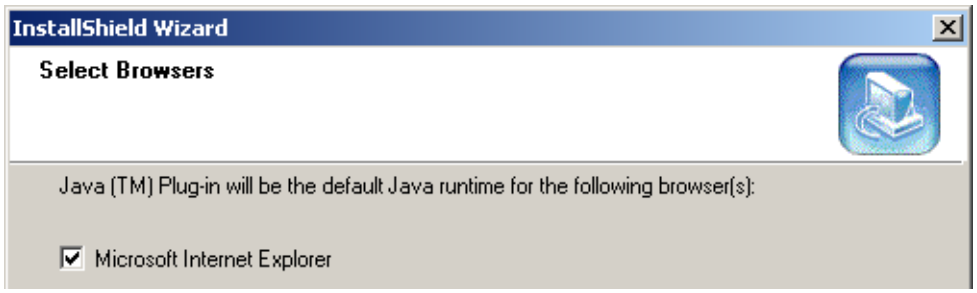


Figure 2.5. J2SDK installation browser select (318)

2.7. Click **Next**. The files are copied. Finally the dialog “InstallShield Wizard Complete” appears.

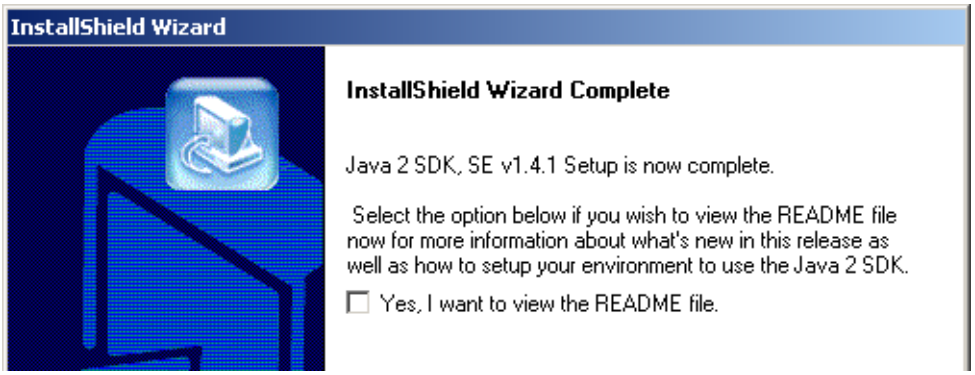


Figure 2.6. J2SDK installation complete (316)

2.8. Click **Finish**.

2.2. IDEA

This section describes the complete IDEA installation including the following:

2.2.1. Download / Install

2.9. Download the installer from **http://www.intellij.com/idea/download.jsp**:

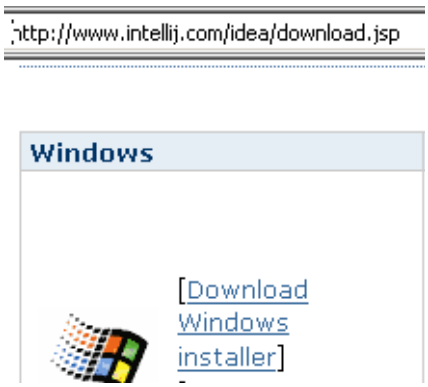


Figure 2.7. Windows installer download page (322)

2.10. Double-click on **idea665.exe**. The dialog “Introduction” appears.

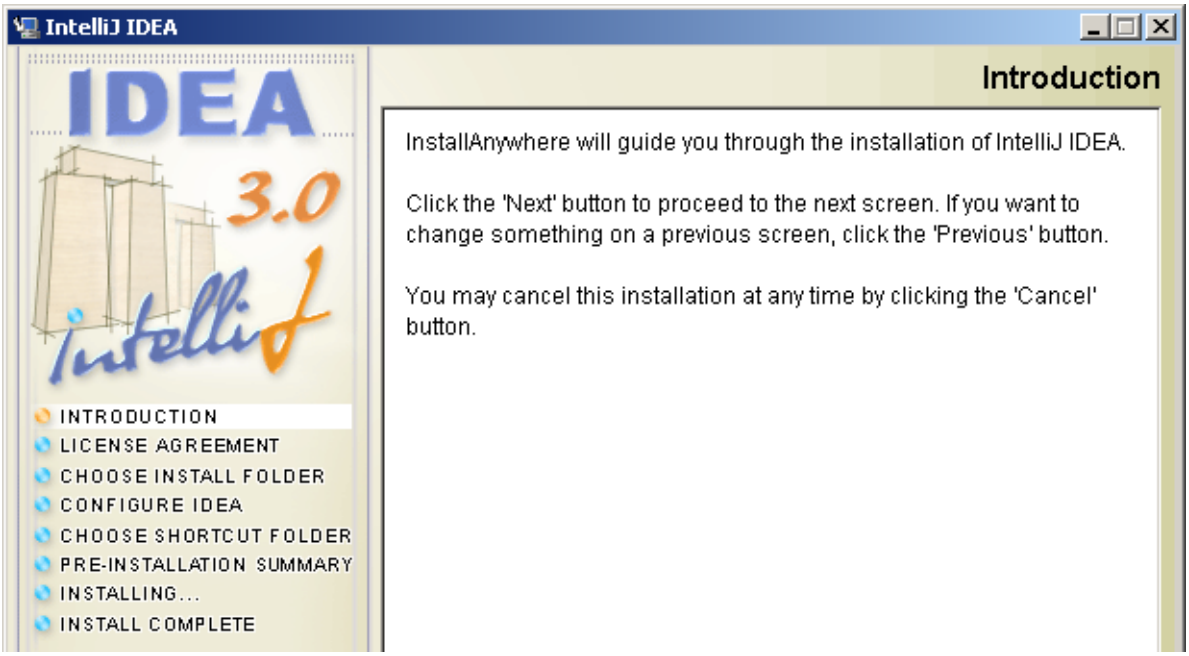


Figure 2.8. IDEA EXE installation introduction (336)

2.11. Click **Next**. The dialog “License agreement” appears.

Figure 2.9. IDEA EXE installation license agreement (335)

2.12. Select **I accept the terms**.

2.13. Click **Next**. The dialog “Choose install folder” appears.

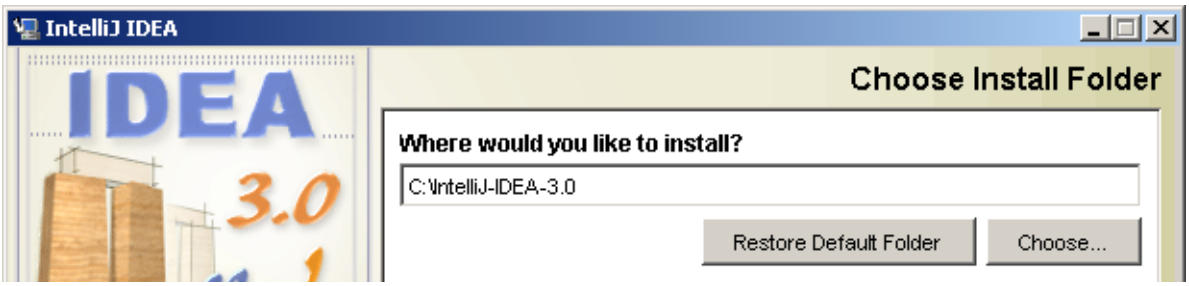


Figure 2.10. IDEA EXE installation choose folder (333)

2.14. Click **Next**. The dialog for storing settings appears.

2.15. Select **In the IDEA installation directory**.

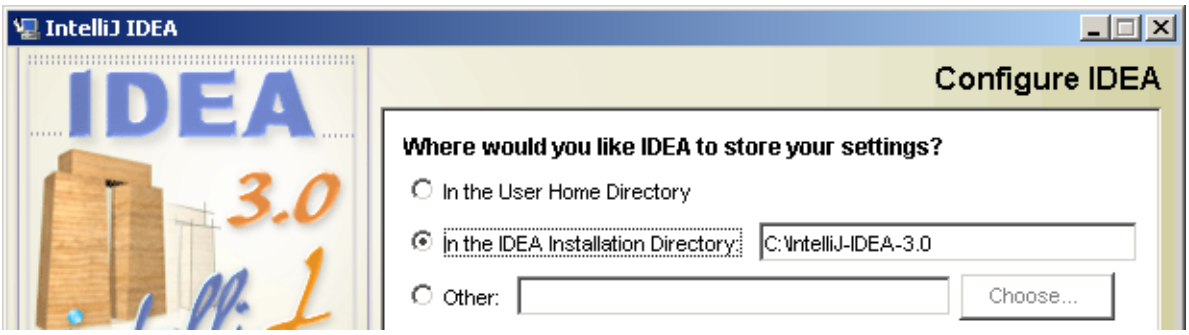


Figure 2.11. IDEA folder for storing settings (192)

2.16. Click **Next**. The dialog for storing the data cache appears.

2.17. Select **In the IDEA installation directory**.

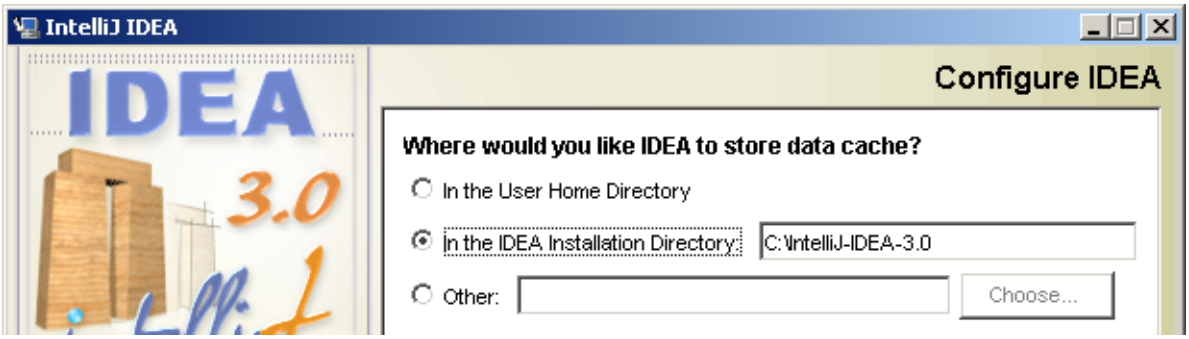


Figure 2.12. IDEA folder for data cache (191)

2.18. Click **Next**. The dialog “Choose shortcut folder” appears.

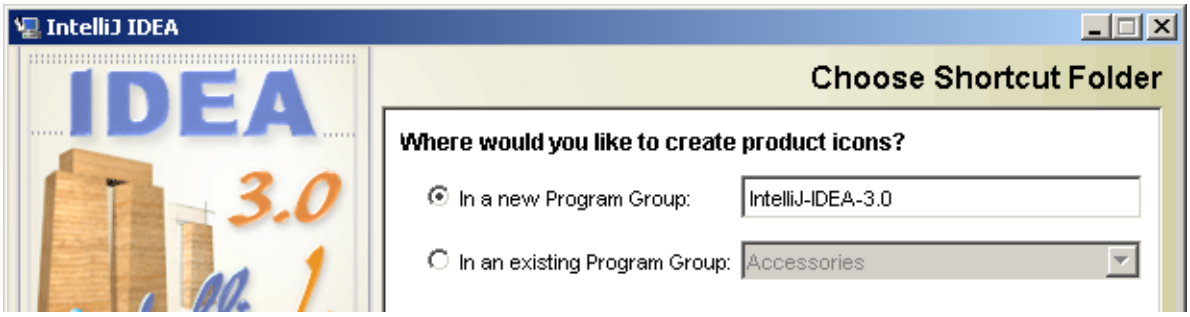


Figure 2.13. IDEA EXE installation shortcut folder (332)

2.19. Click **Next**. The dialog “File associations” appears.

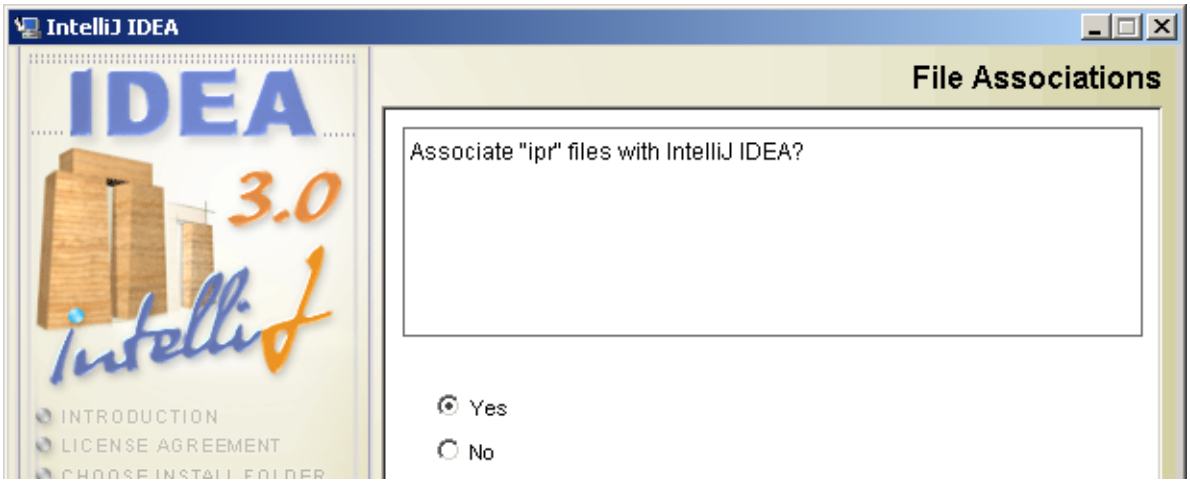


Figure 2.14. IDEA EXE installation file associations (331)

2.20. Click **Next**. The dialog “Pre-installation summary” appears.

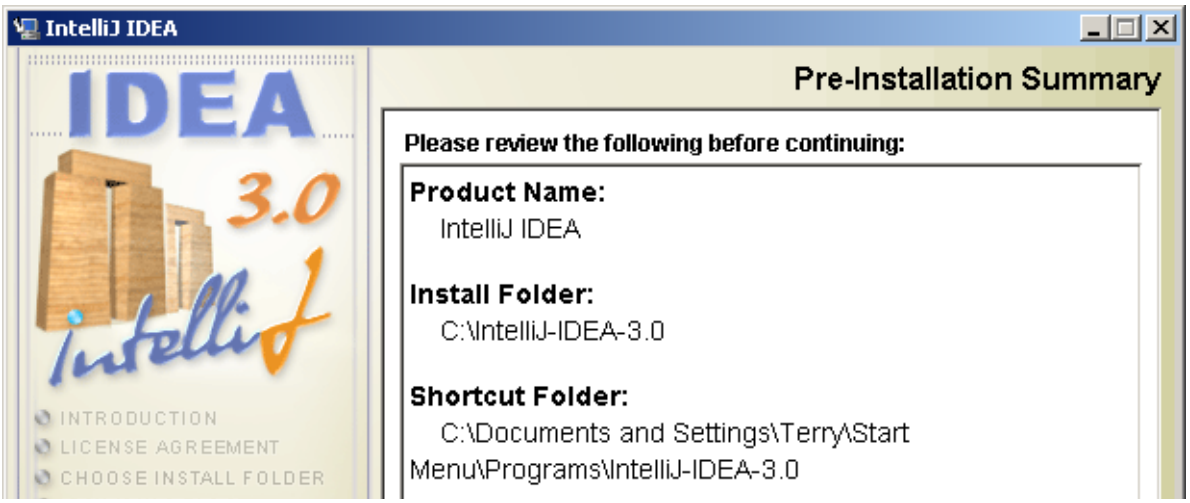


Figure 2.15. IDEA EXE installation pre-install summary (330)

2.21. Click **Install**. IDEA is installed. The dialog for the readme.txt file appears.

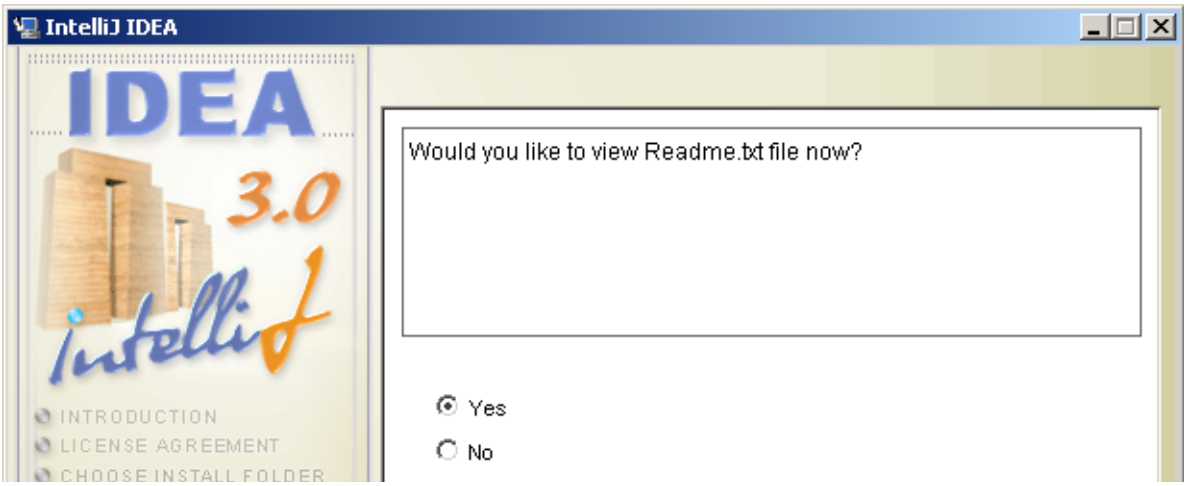


Figure 2.16. IDEA EXE installation readme (329)

2.22. Click **Next**. The readme.txt appears.

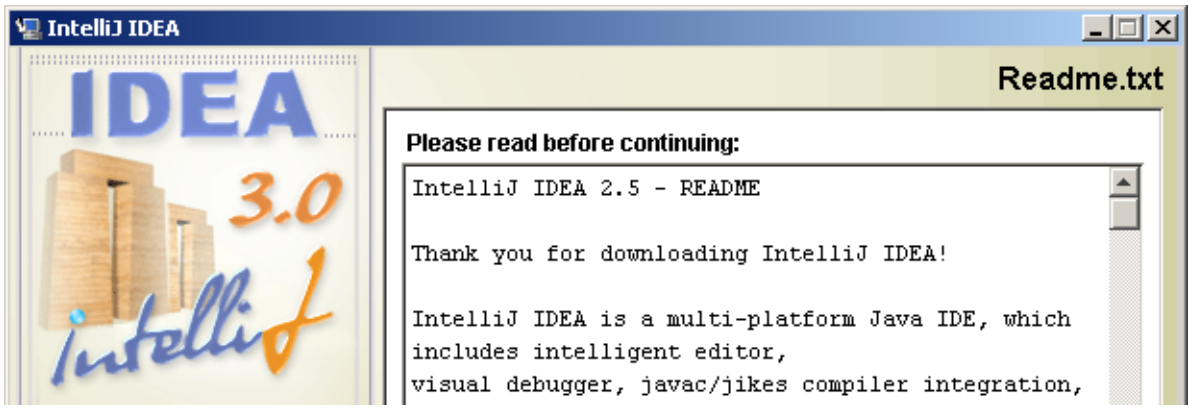


Figure 2.17. IDEA EXE installation readme.txt (328)

2.23. Click **Next**. The dialog “Install complete” appears.

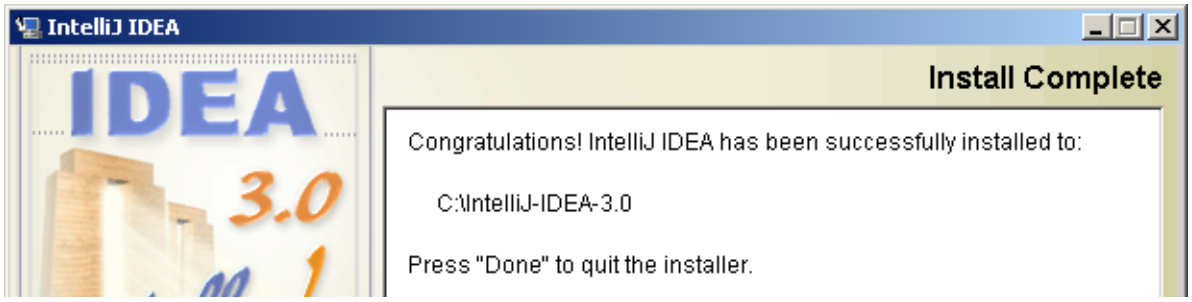


Figure 2.18. IDEA EXE install complete (327)

2.24. Click **Done**. The wizard closes. The installation is complete.

2.2.2. Get evaluation license

2.25. Fill out and submit the license form at **http://www.intellij.com/idea/evaluate.jsp**.

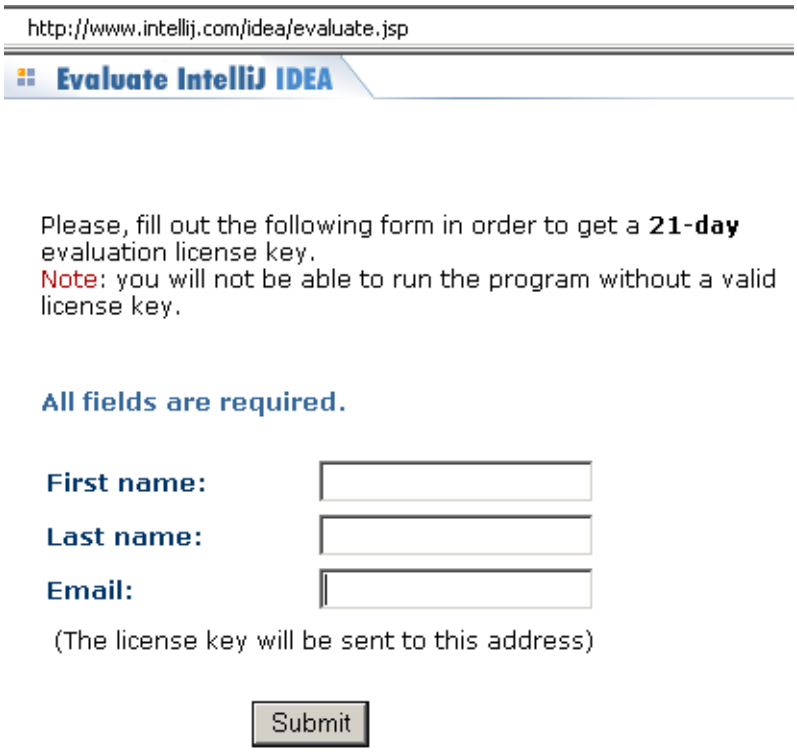


Figure 2.19. License form (254)

The following are sent to the email address entered in the form:

- User name.
- Evaluation key (alpha-numeric)

2.2.3. Start IDEA (enter license)

You are now ready to start IDEA.

2.26. From the Start menu select **Programs | IntelliJ IDEA 3.0 | IntelliJ IDEA**. The dialog “Enter license data” appears.

2.27. Enter your **User name** and **License key**.

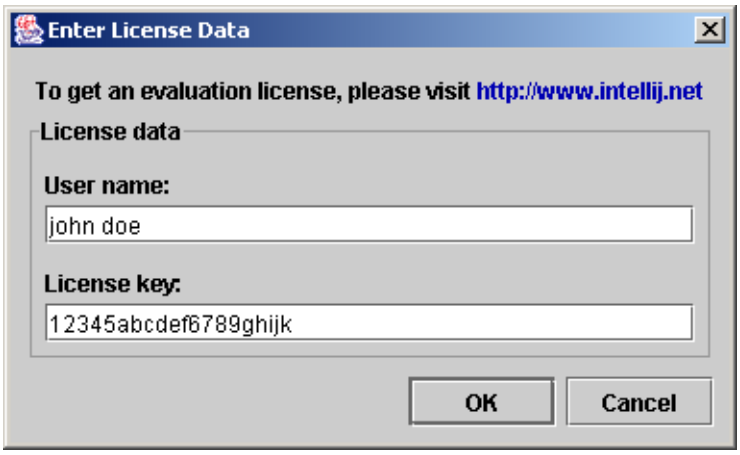


Figure 2.20. License data dialog (252)

2.28. Click **OK**.

~~2.29. The dialog “License agreement for IntelliJ IDEA” appears.~~

~~2.30. Check **Accept all terms of the license**.~~

~~Figure 2.21. License agreement dialog (251)~~

~~2.31. Click **OK**.~~

The new project wizard appears.

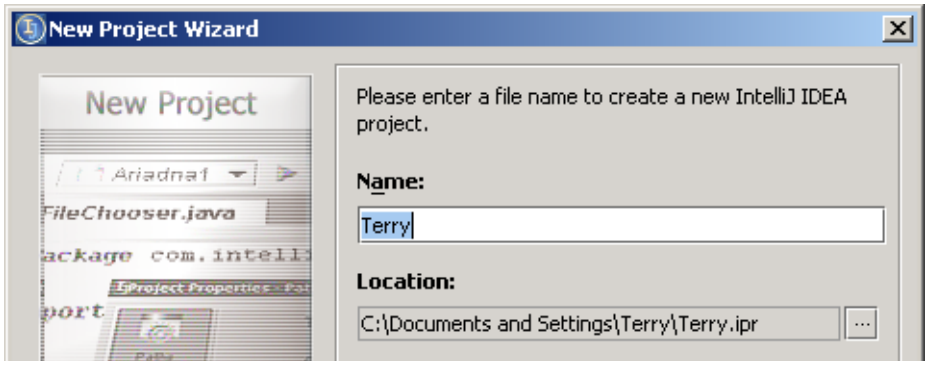


Figure 2.22. New project wizard (250)

2.2.4. Enter non-evaluation license XXX

describe how to enter license info after getting a real license.

~~2.2.5. Register XXX~~

~~Using the evaluation license: first, please note the reader that the license given from the site is just an evaluation one; more important is that in order to register the license within IDEA, the user has not to copy the "idea.license" file, since there is just no such file; the user should enter the registration data into the "Registration" dialog that appears when first starting the application, and then it automatically generates the "idea.license" file in the right directory; thus this section should go AFTER "Starting IDEA", not before it, since this dialog will appear only after start.~~

3. Basics

20021028TTT: updated.

for help: zheka, anton

This chapter describes basic IDEA functionality and concepts. In this chapter you will

Projects, packages (dirs), and files are described in more detail in Part B. Projects / dirs / files (page 61) which includes the following chapters

Editor, code automation, code refactoring, version control, and JavaDoc are described in more detail in Part C. Editing files (page 105) which includes the following chapters

Compilation and running/debugging are described in more detail in Part D. Compile / Debug (page 281) which includes the following chapters:

3.1. Create project

To create a project you will

- **3.1.1. Specify project name / location (page 32)**
- **3.1.2. Specify target JDK (page 33)**
- **3.1.3. Specify project paths (page 35)**

Projects will be discussed in more detail in Chapter 4. Projects (page 63).

3.1.1. Specify project name / location

3.1. For the project “Name”: Enter “**MyProject**”.

Figure 3.1. Project name (187)

3.2. For the project “Location”: Click on the ellipsis button (...). The dialog “Select path” appears.
3.3. Right-click on **C:**. A popup dialog appears.

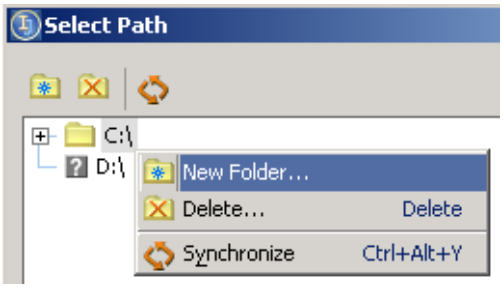


Figure 3.2. Popup “New Folder” (248)

3.4. Click on **New Folder**. The dialog “New Folder” appears.
3.5. For “Enter a new folder name”: Enter **MyProjectFolder**.

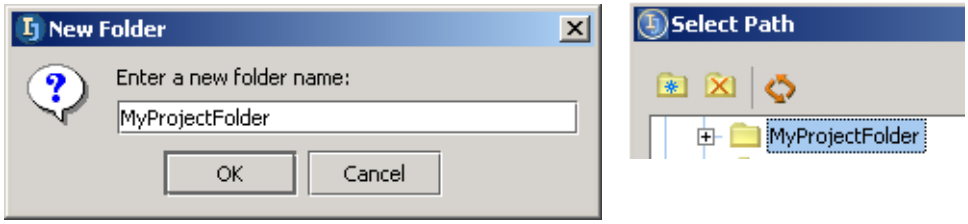


Figure 3.3. New folder name (052,186)

3.6. Click **OK**. The folder is created.
3.7. Double-click on **MyProjectFolder**. Note the new project location.

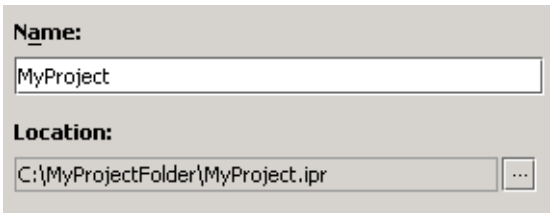


Figure 3.4. Project name / location (053)

3.1.2. Specify target JDK

3.8. For the project target “JDK”: Click on the ellipsis button (...). The dialog “Select JDK” appears.

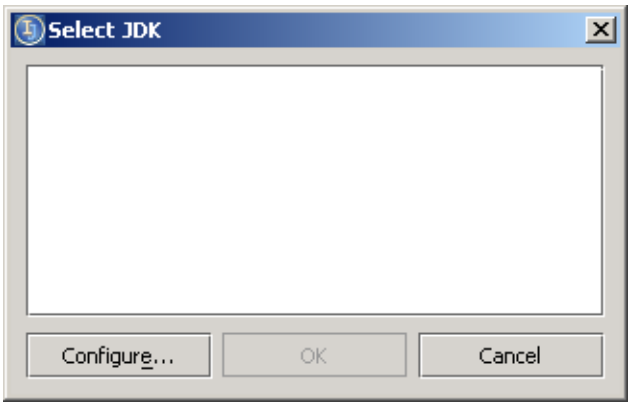


Figure 3.5. Select JDK (190)

3.9. Click on **Configure**.

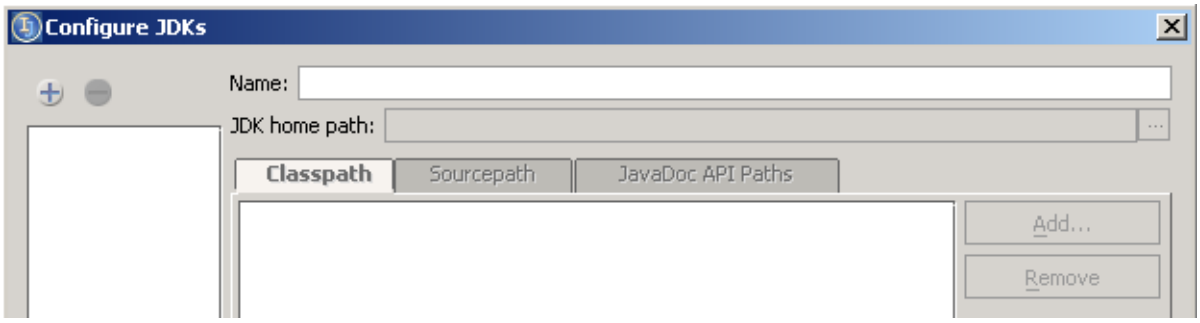


Figure 3.6. Dialog “Configure JDKs” (185)

3.10. Click on the button “Create JDK insert” (+). The dialog “Select JDK Home Directory” appears.

3.11. Select **C:\j2sdk1.4.1**.

Figure 3.7. Dialog “Select JDK Home Directory” (183)

3.12. Click **OK**. The JDK is configured.

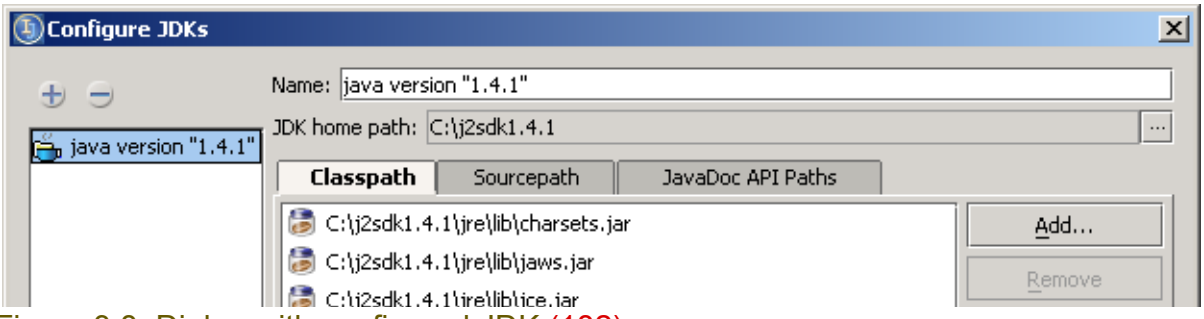


Figure 3.8. Dialog with configured JDK (182)

3.13. Click **OK**.

3.14. In the dialog “Select JDK” select **java version “1.4.1”**.

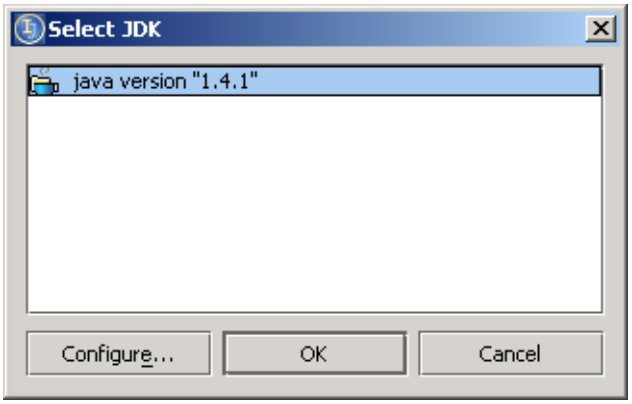


Figure 3.9. Configure JDKs (189)

3.15. Click **OK**. The JDK is shown in the new project wizard.

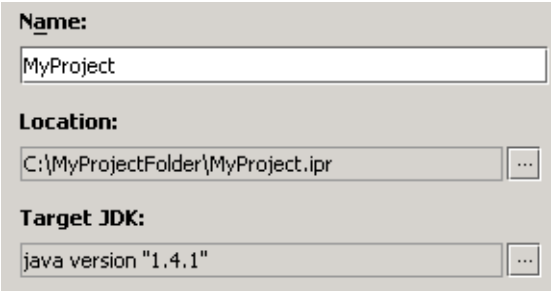


Figure 3.10. Configured JDK (188)

3.1.3. Specify project paths

You will now specify the following project paths:

3.1.3.1. Output path

3.16. Click on the **Compiler output path** ellipsis button  . The dialog “Select Path” appears.
3.17. Right-click on **MyProjectFolder**. A context dialog appears.
3.18. Click **New Folder**. The dialog “New Folder” appears.
3.19. For the new folder name enter “**MyOutputFolder**”.

Figure 3.11. Output folder name (581)

3.20. Click **OK**. The folder is created.

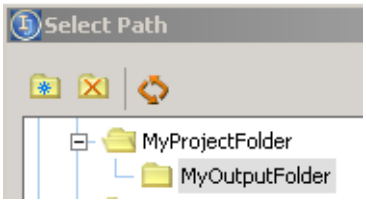


Figure 3.12. Select folder Output (246)

3.21. Click **OK**. The output folder is now selected.

Figure 3.13. Compiler output folder (579)

3.1.3.2. Project path (directories)

20020906TTT: ?? dialog should have a title.

3.22. Click **Next**. The dialog with the project path appears. Note that the project path is **c:\MyProject-Folder**.

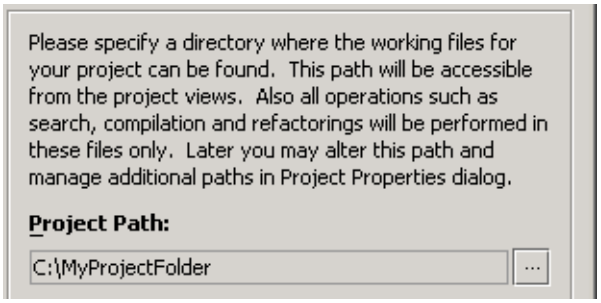


Figure 3.14. Project path (054)

3.1.3.3. Source path

3.23. Click **Next**. The dialog with the source paths appears. Note that the source path **c:\MyProject-Folder\src** is automatically suggested.

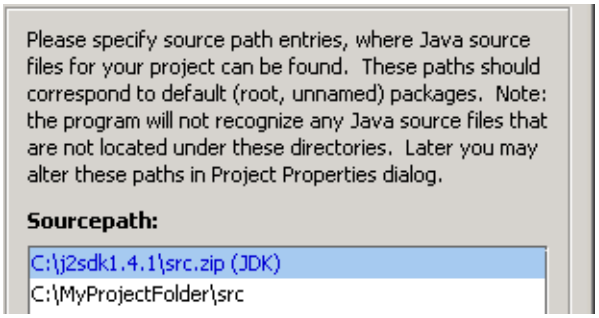


Figure 3.15. Source paths (055)

3.24. Click **Next**. A message dialog appears.

Figure 3.16. Create folder \src confirmation (056)

3.25. Click **Yes** to create the source path folder. The dialog with the class paths appears.

3.1.3.4. Class path

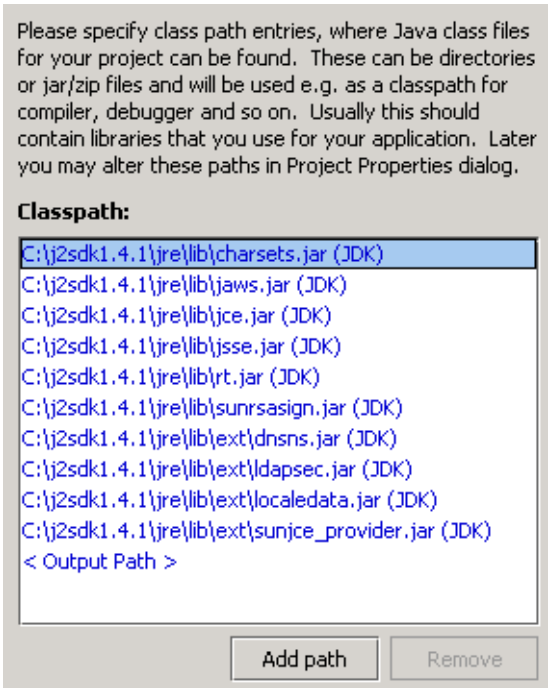


Figure 3.17. Class paths (057)

3.26. Click **Finish**. The project files are created (the project is built). The main dialog and the tip of the day appears.

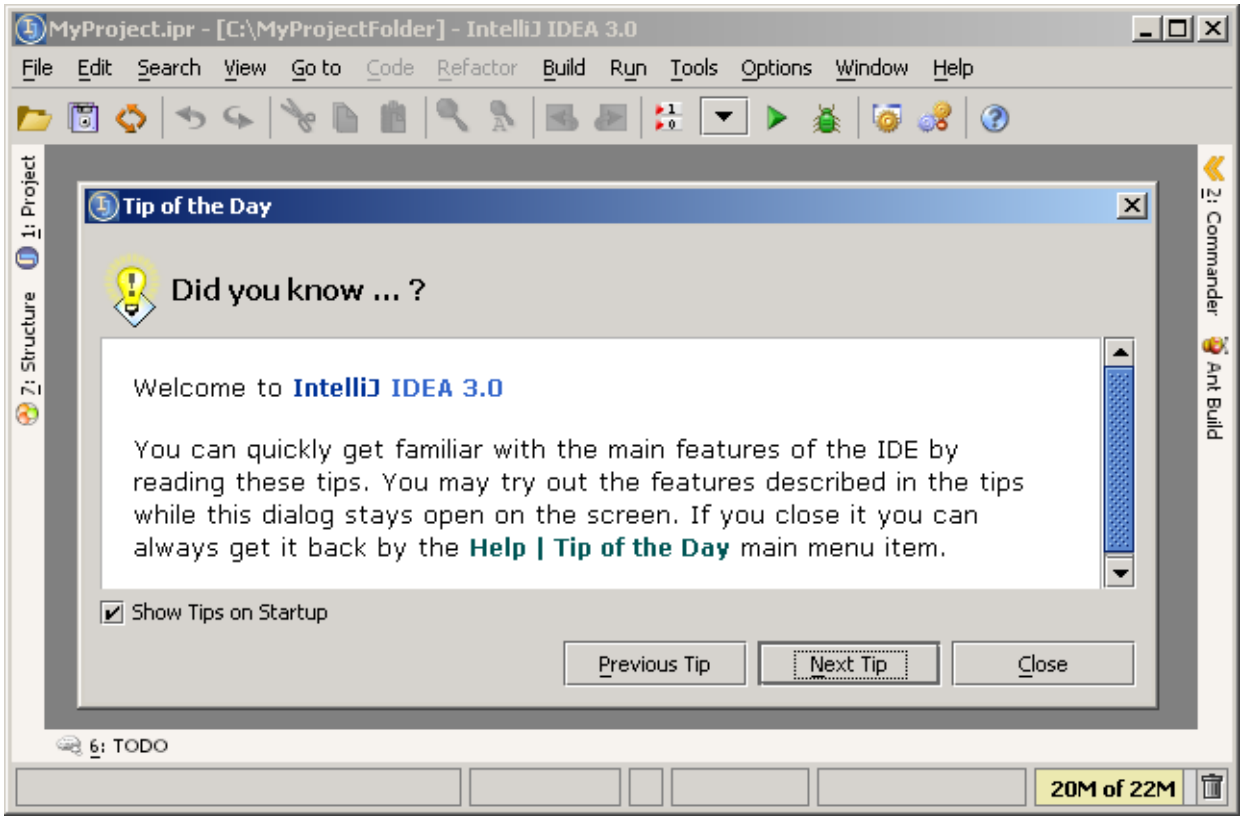


Figure 3.18. Main dialog and tip of the day (180)

3.27. Click **Close** to closd the tip of the day.

3.28. Click on **Project** to open the project tool.

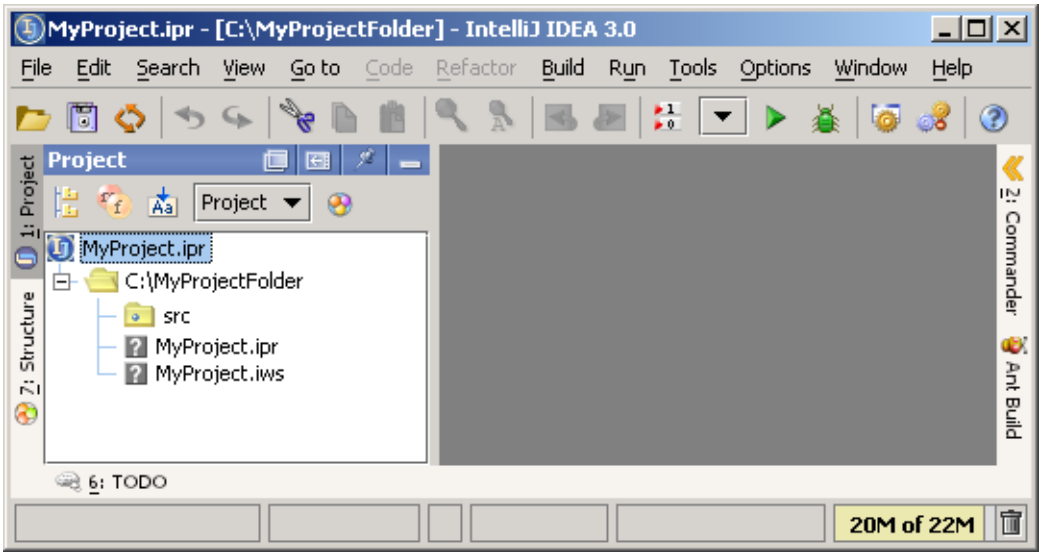


Figure 3.19. IDEA main dialog and project tool (591)

3.2. Create package

*Packages (directories) will be discussed in more detail in **Chapter 5. Directories (packages) (page 75)**.*

20021007TTT: why is the output dir not visible??

3.29. In the Project tool: Right-click on folder **src**. A popup dialog appears.

3.30. Select **New | Package**. A dialog requesting the package name appears.

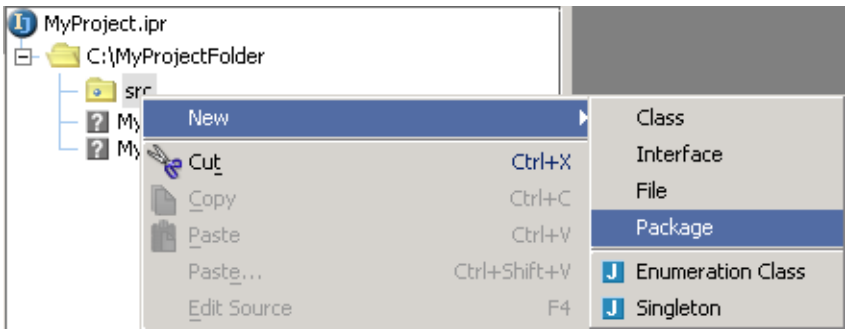


Figure 3.20. New package (574)

3.31. For the package name enter **myPackage**.

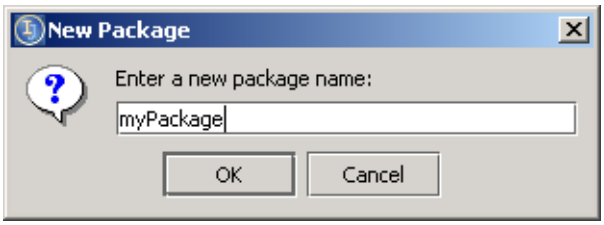


Figure 3.21. New package dialog (244)

3.32. Click **OK**. The package is created.

Figure 3.22. Created package (573)

3.3. Create class

Add about saving, resynch, etc.

You are now ready to create a Java source file.

*Creating class files will be discussed in more detail in **Chapter 6. Files (page 81)**.*

3.33. Right-click on **myPackage**.

3.34. From the context dialog select **New | Class**. A dialog requesting the class name appears.

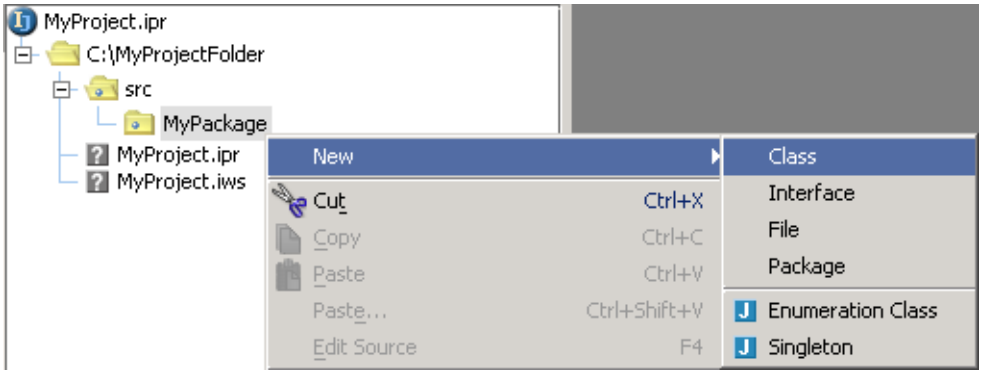


Figure 3.23. New class (243)

3.35. For the class name enter **MyClass**.

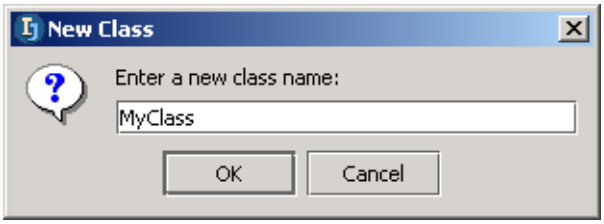


Figure 3.24. New class (242)

3.36. Click **OK**. A new class is created and opened in a text editor:

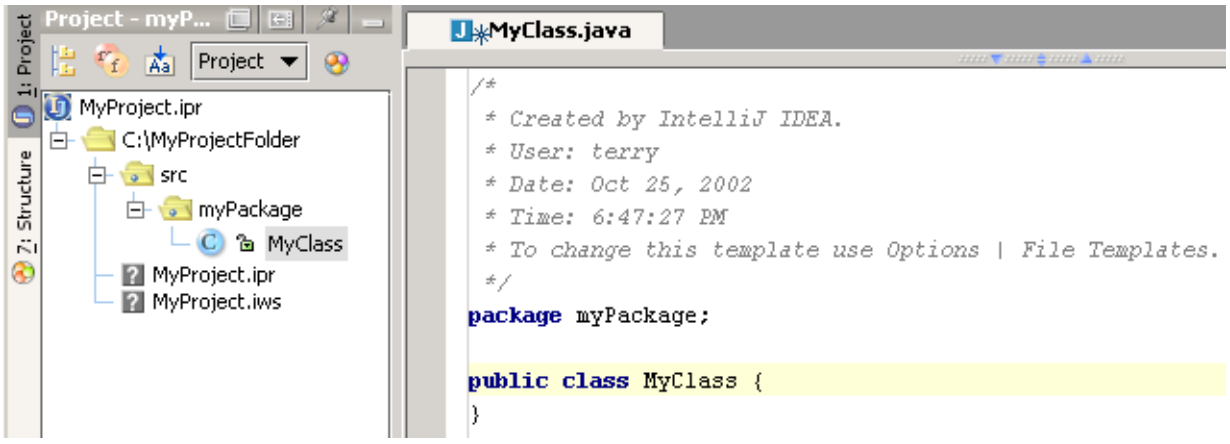


Figure 3.25. Class MyClass (572)

~~3.37. Press **CTRL-S**. The file is saved.~~

~~Note the indicator for unsaved changes in a file.~~

File not saved File saved

Figure 3.26. Unsaved changes indicator (561,560)

3.38. Click on the tab **Structure**. The structure of the class is displayed.

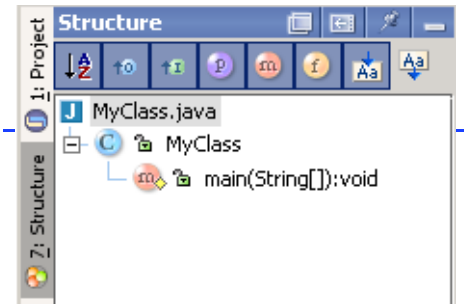


Figure 3.27. Class structure (559)

3.39. Click on tab **Project**.

3.40. Click on the icon . Both the Project and Structure panes are displayed.

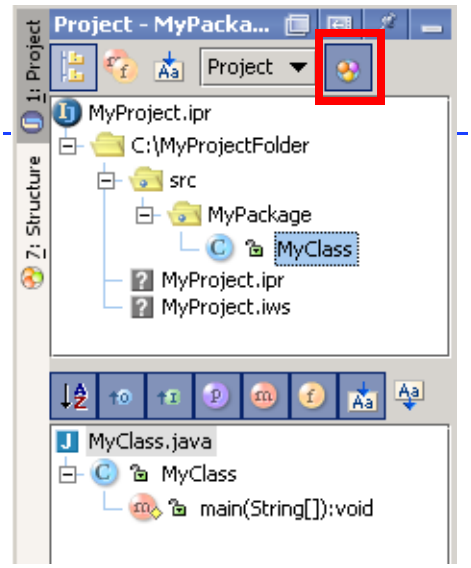


Figure 3.28. Both Project and Structure panes are displayed (558)

3.4. Use the editor

You are now ready to use the IDEA editor to edit the Java source file:

Editing files will be described in more detail in 7. Editor X (page 107).

3.4.1. Entering text

This section demonstrates some some of the basics of editting text with IDEA. Most things are very standard for most editors.

Entering text is described in more detail in 7.2. Text editing X (page 111).

3.41. Place the cursor (the “caret”) in line 2.
3.42. Click **CTRL-D** several times. The line is duplicated.

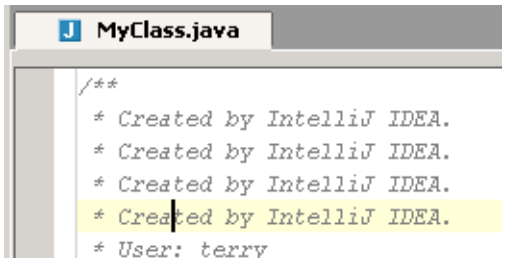


Figure 3.29. Duplicated lines (0002)

3.43. Use **CTRL-Y** to delete the added lines.
3.44. Experiment with the standard **CTRL-C**, **CTRL-X**, **CTRL-V** to copy, cut and paste text.
3.45. Press **CTRL-Z** multiple times to undo all of the changes you have made. Continue pressing until the following dialog appears:
3.46. Click **OK**. The class creation is undone.
3.47. Press **CTRL-SHIFT-Z** (redo). The question “Redo Create class?”appears.
3.48. Click **OK** to recreate the class.

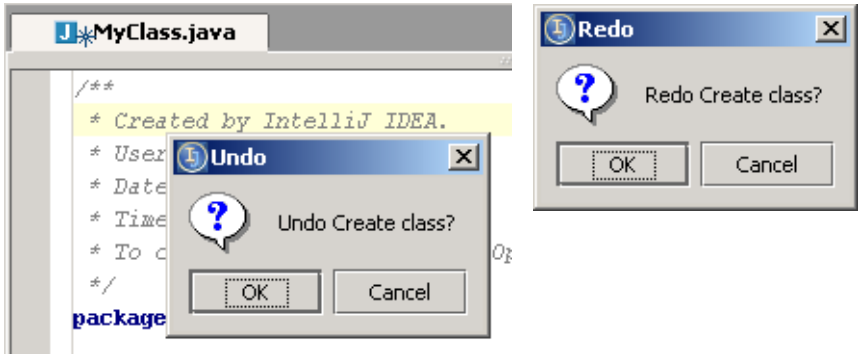


Figure 3.30. Undo / Redo create class (0003,0004)

3.4.2. Find / Navigation

This section demonstrates some some of the basics of finding text, goto, and bookmarks.

Finding and navigation are described in more detail in 7.3. Find / Navigation (page 124).

3.49. Select **Search | Find**. The dialog “Find Text” appears.
3.50. For “Text to find” enter **my**.

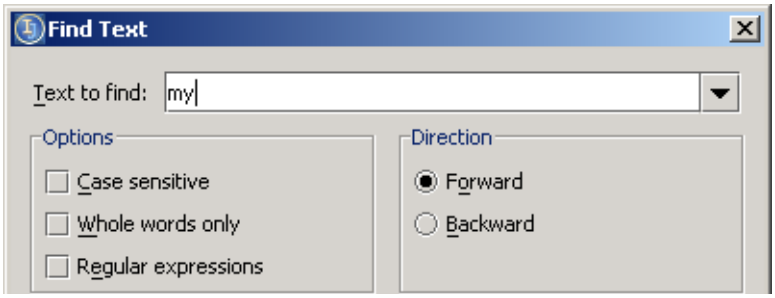


Figure 3.31. Find text (0005)

3.51. Click **Find**. An occurence is found.
3.52. Click **F3** to find the next occurences of the file.

Try options such as “Case sensitive”, “Whole words only”, “Regular expressions”.

3.53. Close **MyClass**.
3.54. Select **Goto | Class**.
3.55. For class name enter **MyClass**.

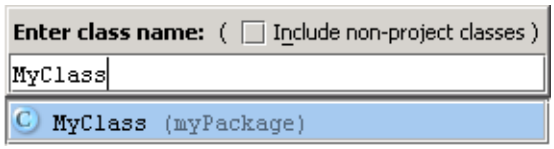


Figure 3.32. Goto class (0006)

3.56. Press **Enter**. MyClass is opened in an editor.
3.57. Place the cursor on a line in MyClass.
3.58. Select **Edit | Toggle bookmark**. A bookmark is added.

Figure 3.33. Added bookmark (0007)

3.59. Close MyClass.
3.60. Select **Edit | Show bookmarks**. The “Editor bookmarks” appears.

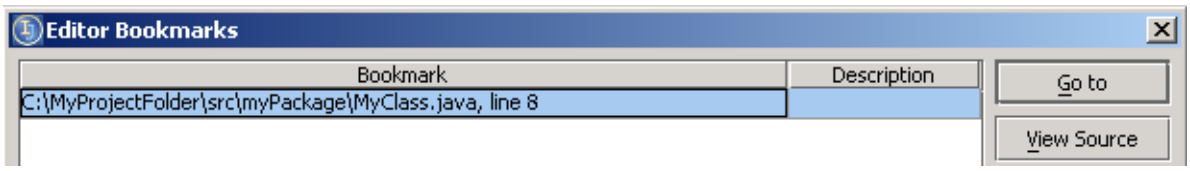


Figure 3.34. List of bookmarks (0008)

3.61. Double-click on the bookmark to open the file at the bookmark.

3.4.3. Colors and fonts

This section shows how the colors and fonts make code easier to understand.

Colors and fonts are described in more detail in 7.4. Colors and fonts X (page 137).

3.62. Add the following to definition of MyClass

```
package myPackage;
public class MyClass {
  public static void main(String[] args) {
    System.out.xxxprintln("hello");
  }
}
```

Note the colors and fonts

20021028TTT find a better example and describe details.

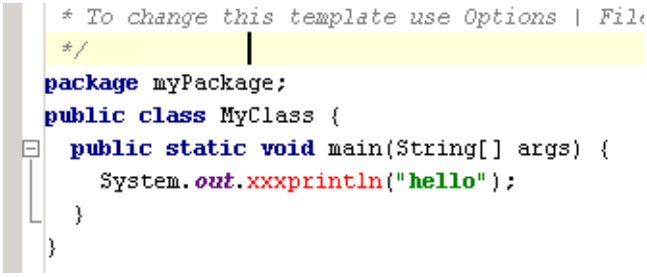


Figure 3.35. Colors and fonts (0009)

3.4.4. Code style

This section shows how code style makes code easier to understand.

Code style is described in more detail in 7.5. Code style X (page 145).

Like most editors, the IDEA editor makes it easy to maintain code style as you type. However, there are also functions for cleaning up the style of the code.

3.63. Modify the code for MyClass

```
package myPackage;public class MyClass {
public static void main(String[] args) {
System.out.println("hello");}}
```

Though error-free, the code is not easy to read.

3.64. Select the added code.

3.65. Select **Code | Auto-indent lines**. The lines are indented.

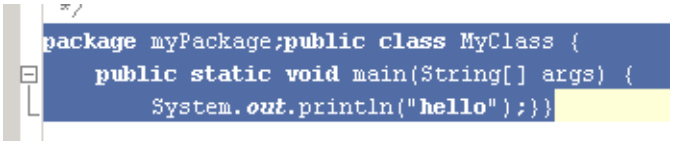


Figure 3.36. Autoindented lines (0010)

3.66. Select **Tools | Reformat code**. The dialog “Reformat code” appears.

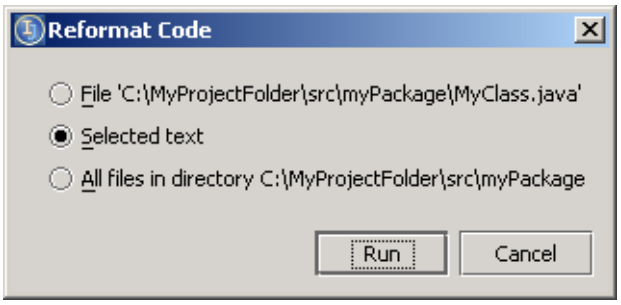


Figure 3.37. Reformat code (0010)

3.67. Click **Run**. The code is reformatted.

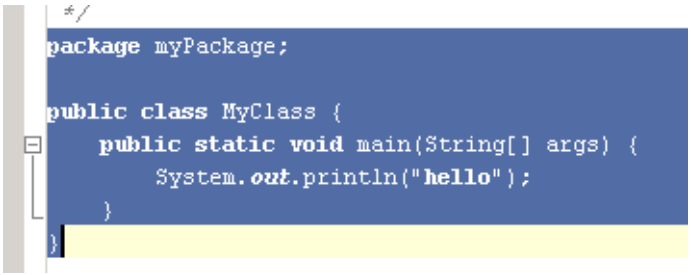


Figure 3.38. Reformatted code (0012)

3.4.5. Error indication

This section shows how IDEA notifies you of errors while you type.

Error indication is described in more detail in 7.6. Error indication X (page 156)

3.68. Modify the code for MyClass

```
package myPackage;
public xxclass MyClass {}
```

Note the indication of the error.

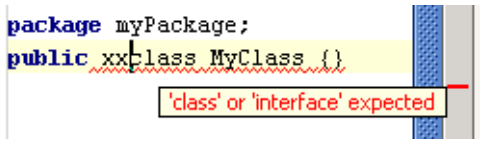


Figure 3.39. Error indication (0015)

3.69. Modify the code for MyClass

```
package myPackage;
import java.util.*;
public class MyClass {}
```

Though error-free, the import is not necessary.

3.70. Select the added code.

3.71. Select **Code | Auto-indent lines**. The lines are indented.

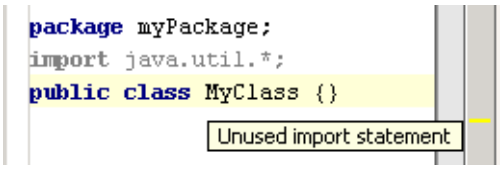


Figure 3.40. Unused import warning (0013)

3.72. Place the cursor at the end of the import statement. Note that a light-bulb figure appears.

3.73. Click on the suggestion icon to display the recommended solution for the problem.

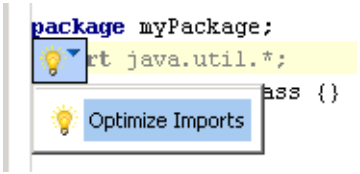


Figure 3.41. Optimize imports suggestion (0014)

3.74. Double-click on **Optimize imports**. The import statement is deleted.

3.4.6. Todo

This section shows how you can create “todo” messages.

ToDo is described in more detail in 7.7. Todo (page 160)

3.75. Modify the code for MyClass

```
package myPackage;
//@todo add code
public class MyClass {}
```

3.76. Close MyClass.

3.77. Select **Window | ToDo**. The TODO tool opens.

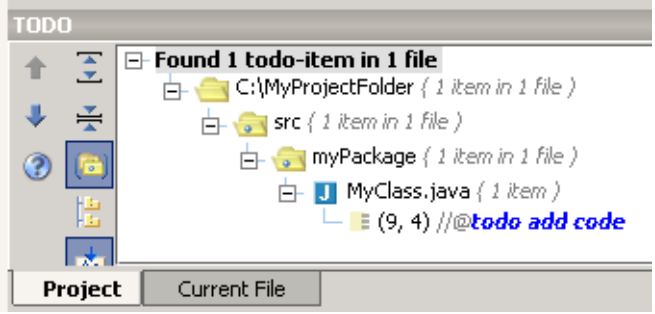


Figure 3.42. TODO tool (0016)

3.78. Double-click on the todo item. File MyClass.java is opened in an editor.

3.5. Automate code

This section shows how IDEA can automatically create code.

Code automation will be described in more detail in 8. Code Automation (page 163).

3.79. Enter the text "**psvm**" as shown in the diagram below:

```
public class MyClass{
psvm
```

Figure 3.43. Enter text "psvm" (571)

3.80. Press the **TAB** key. Note that text is automatically entered:

```
public class MyClass{
    public static void main(String[] args) {

    }
}
```

Figure 3.44. "psvm" replaced with live template text (570)

Entering text "psvm" and then pressing the TAB key will cause IDEA to replace the text "psvm" with "public status void main(String[] args) { }". This is an example of a **Live template**. Live templates are described in more detail in **Section 8.3. Code templates (page 184)**.

3.81. Enter the text "**itar**" as shown in the diagram below:

```
public class MyClass{
    public static void main(String[] args) {
        itar
    }
}
```

Figure 3.45. Enter text "itar" (569)

3.82. Press the **TAB** key. Live template text is added.

```
public class MyClass{
    public static void main(String[] args) {
        for (int i = 0; i < args.length; i++) {
            String arg = args[i];
```

Figure 3.46. itar live template text (568)

```
package myPackage;
public class MyClass {
  public static void main(String[] args) {
    for (int i = 0; i < args.length; i++) {
      String arg = args[i];
      System.out.println(i + 1 + " - " + arg);
    }
  }
}
```

3.83. Modify the text as shown below:

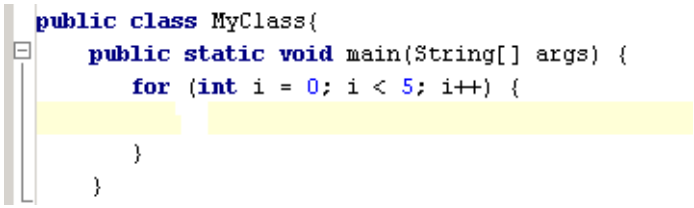


Figure 3.47. Modified itar text (566)

3.84. Enter “**sout**” live template text as shown below:

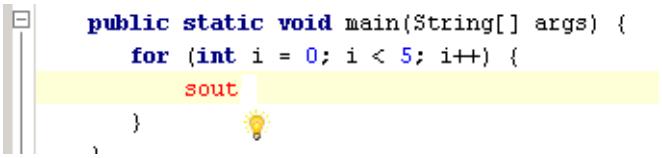


Figure 3.48. sout (565)

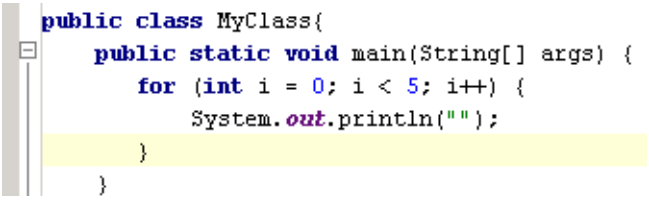


Figure 3.49. sout live template text (564)

3.6. Refactor code

This section shows how code can be refactored with IDEA.

Code refactoring will be described in more detail in 9. Code Refactoring (page 201)

3.85. Change MyClass:

```
package myPackage;
public class MyClass {
    public static void main(String[] args) {
        for (int i = 0; i < args.length; i++) {
            System.out.println("i = " + i);
        }
    }
}
```

3.86. Select var **i**.

3.87. Select **Refactor | Rename**. The dialog “Rename” appears.

3.88. Enter **iRenamed**.

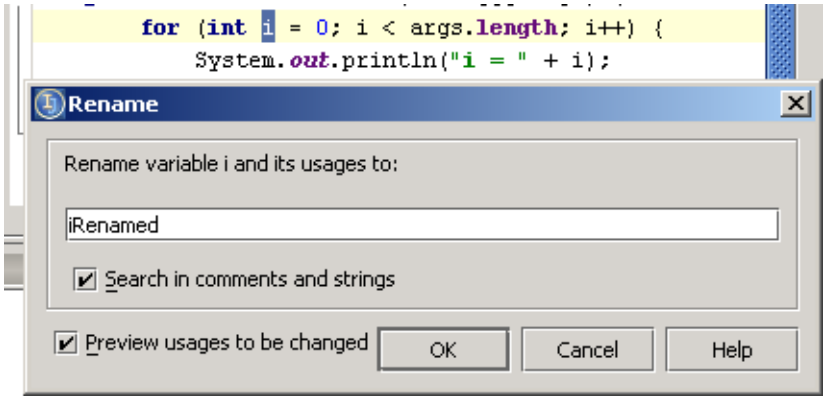


Figure 3.50. Rename variable (0017)

3.89. Click **OK**. The refactoring preview appears.

3.90. Click **Do Refactor**. The variable is renamed.

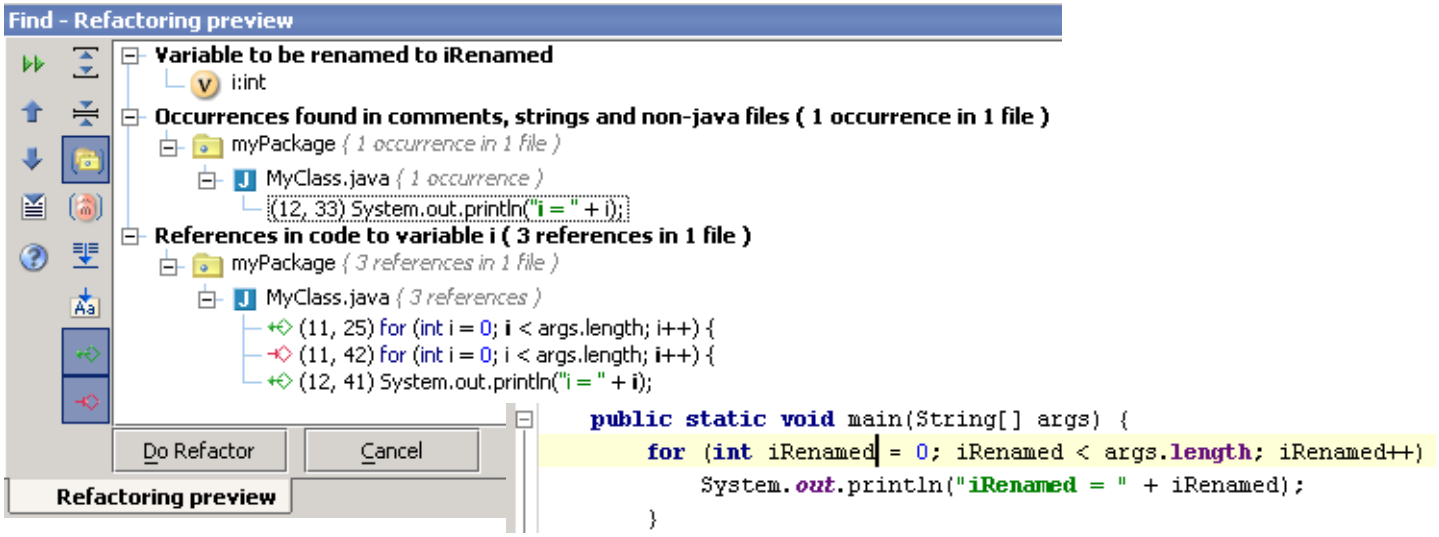


Figure 3.51. Refactoring preview / results (0018,0019)

3.7. Use version control

IDEA's built-in versioning tool makes it easy to recover previous versions.

Version control is described in more detail in 11. Version control (page 255).

3.91. Select **Tools | Local VCS | Show history**. The history tool appears.

3.92. Click on the action **Renaming variable i to iRenamed**.

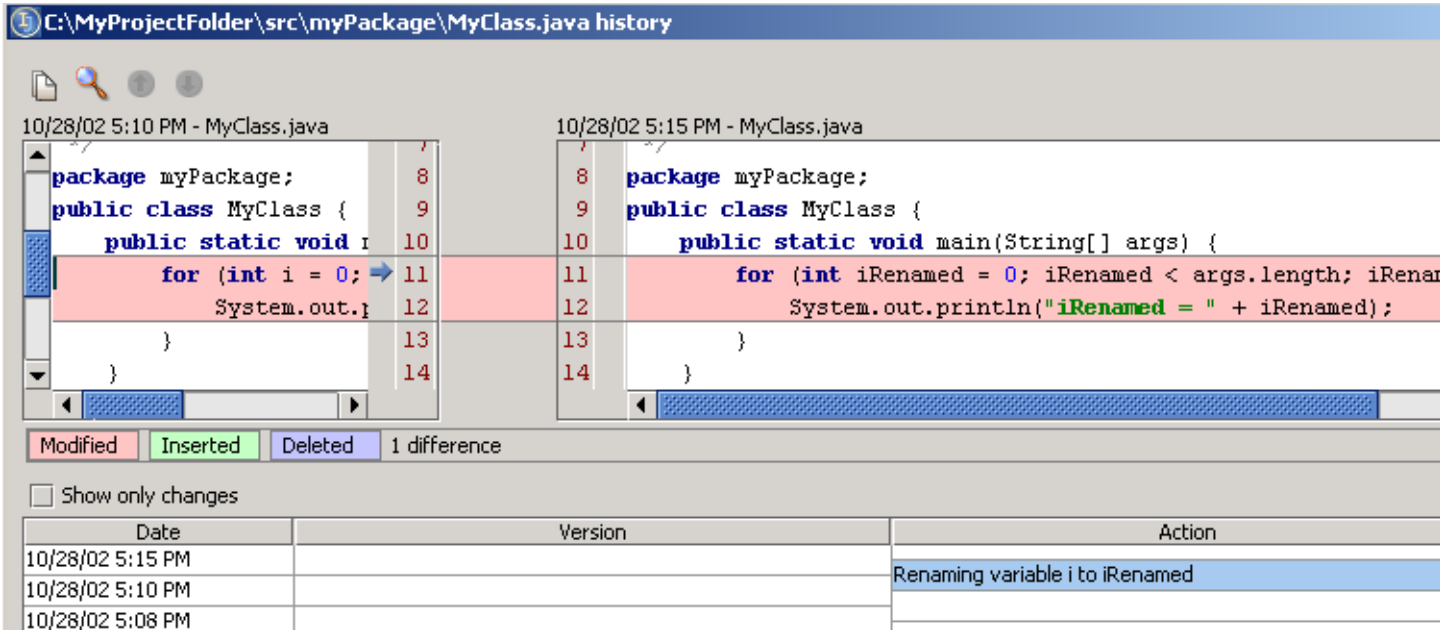


Figure 3.52. Renamed variable in history (0020)

3.93. Right-click on the action. A popup "Rollback" appears.

3.94. Click **Rollback**. A confirmation dialog appears.

3.95. Click **OK**. The change is rolled back.

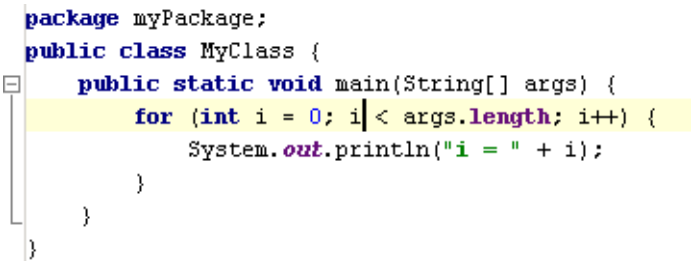


Figure 3.53. Rolled-back changes (0021)

3.8. View JavaDoc

IDEA's JavaDoc functionality makes it easy to create and work with JavaDoc.

JavaDoc is described in more detail in 12. Java Doc (page 269) which also includes a description of the installation of JDK javadoc and generation of own.

3.96. Place the cursor at the beginning of the line:

```
public static void main(String[] args) {
```

3.97. Enter "**/**".

3.98. Press **Enter**. The tags are entered:

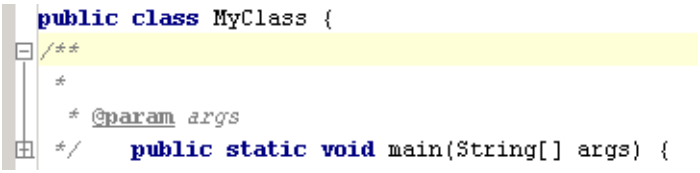


Figure 3.54. JavaDoc method tags (0022)

3.99. Place the cursor on **main**.

3.100. Click **Ctrl-Q**. Quick JavaDoc is displayed.

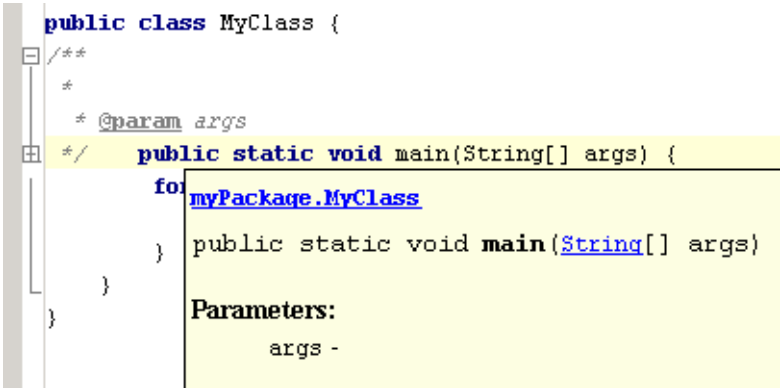


Figure 3.55. Quick JavaDoc for main (0023)

3.101. Select **Tools | Generate JavaDoc**. The dialog "Generate JavaDoc" appears.

3.102. For "Output directory" enter **C:\MyProjectFolder**.

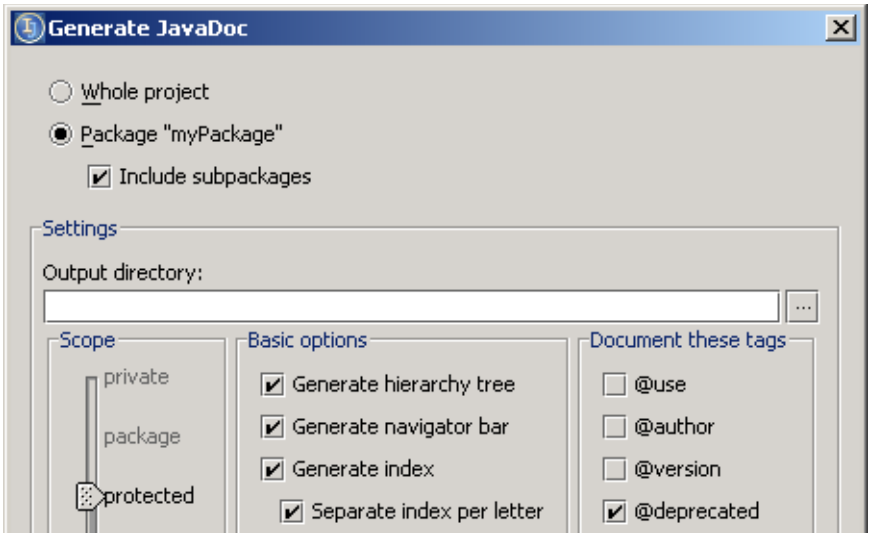


Figure 3.56. Quick JavaDoc for main (0023)

3.103. Click **Start**. JavaDoc is generated.

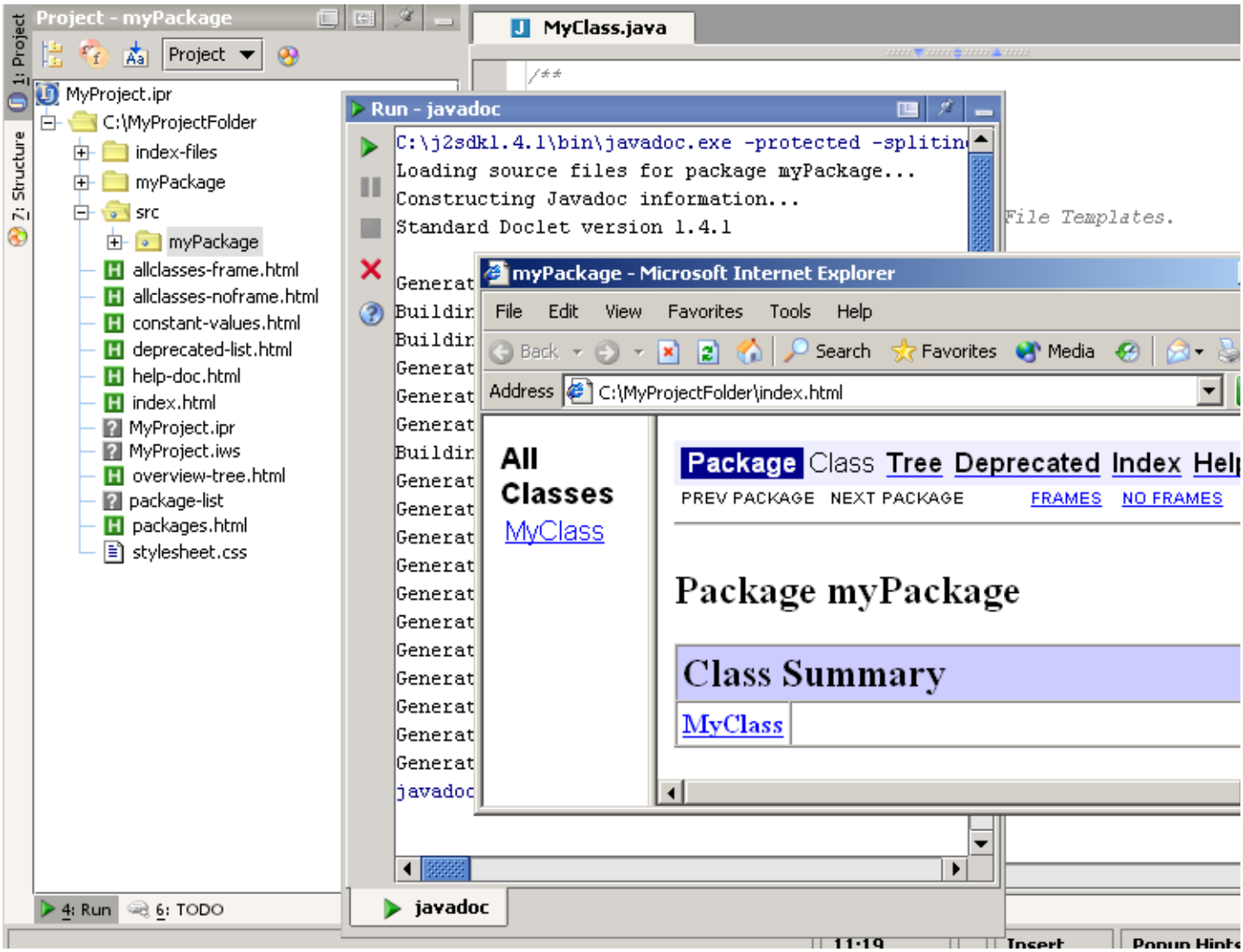


Figure 3.57. Generated JavaDoc for MyClass (0025)

3.9. Compile

You are now ready to compile the Java source file.

Compilation is described in more detail in Chapter 13. Compiler (page 283).

3.104. Modify **MyClass** (add an error)

```
package myPackage;
public class MyClass {
  public static void main(String[] args) {
        for (int i = 0; i < args.length; i++) {
            System.out.println("i = " - i);
        }
    }
}
```

3.105. From the main menu select **Build | Compile "MyClass.java" Ctrl-Shift-F9**. A message pane appears with a description of the error.

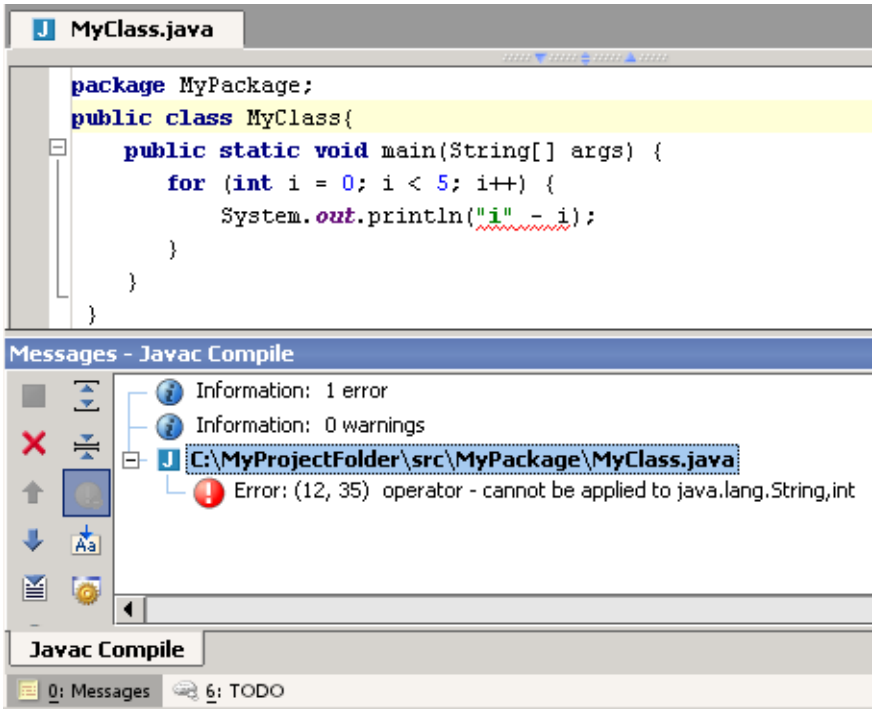


Figure 3.58. Message pane with error information (555)

3.106. Correc the error (change "-" to "+").

3.107. Recompile. The file **C:\MyProjectFolder\MyOutputFolder\myPackage\MyClass.class** is created.

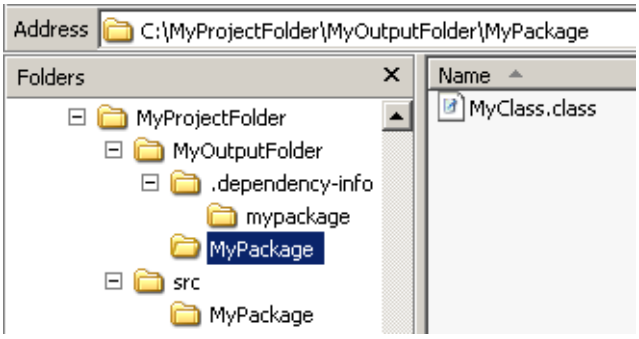


Figure 3.59. Compile file (241)

3.10. Debug

You are now ready to debug the application. To debug the application, you will

Running/Debugging is described in more detail in Chapter 15. Debugger (page 301).

3.10.1. Create application configuration

3.108. From the main menu select **Run | Run Shift-F10**. Dialog **Run** tab **Application** appears.

3.109. Press the **Add** button  . The application name “Unnamed” appears.

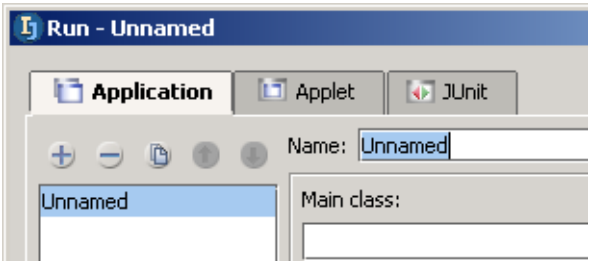


Figure 3.60. Application “Unnamed” (553)

3.110. Change Name to **MyApplication**.

3.111. Click on the ellipsis button for **Main class:**. The dialog “Choose Main Class” appears.

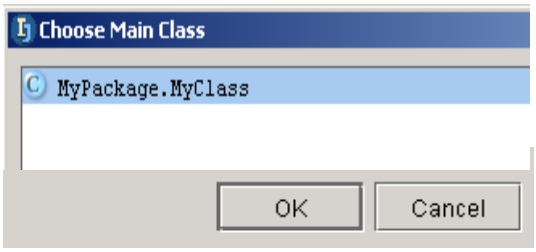


Figure 3.61. Choose main class (552,551)

3.112. Select **myPackage.MyClass**.

3.113. Click **OK**.

20020906TTT: ?? what is the working directory used for?

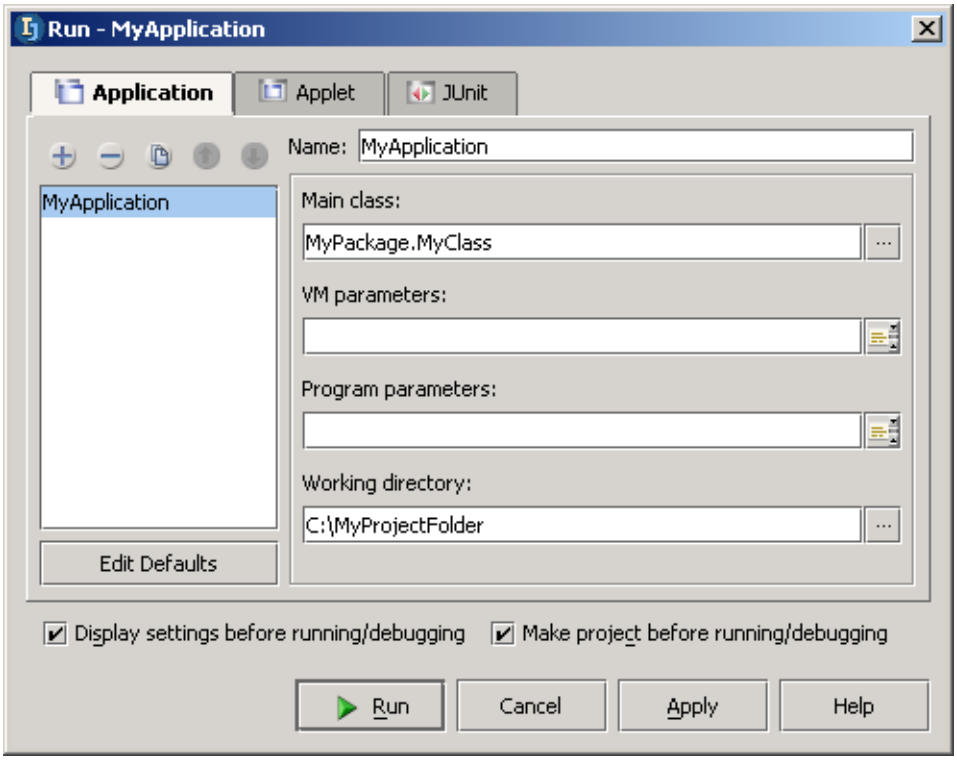


Figure 3.62. Application settings (550)

3.10.2. Run the configuration

3.114. Click **Run**. The pane “Run” appears with the program output.

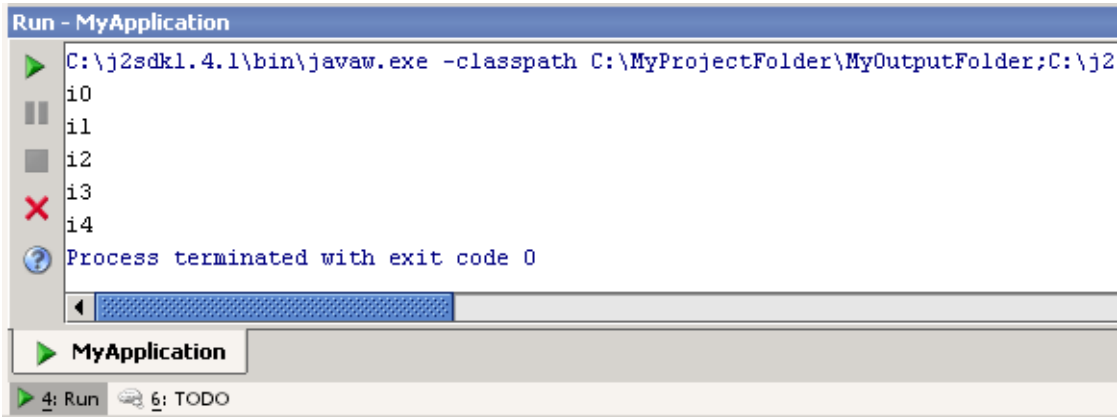


Figure 3.63. Run pane output (549)

3.115. Run with args.

```
package myPackage;
public class MyClass {
  public static void main(String[] args) {
    for (int i = 0; i < args.length; i++) {
      String arg = args[i];
      System.out.println(i + 1 + " - " + arg);
    }
  }
}
```

3.10.3. Set breakpoint

3.116. Click to the left of the line “System.out.println...”. A line breakpoint marker appears.

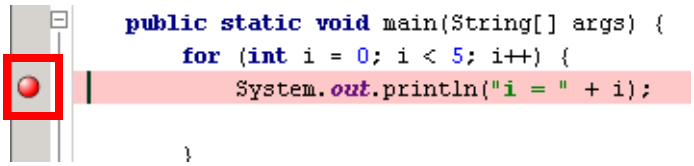


Figure 3.64. Set a line breakpoint (548)

3.117. Right-click on the marker.

3.118. From the context menu select **Properties**. The dialog **Breakpoints** appears.

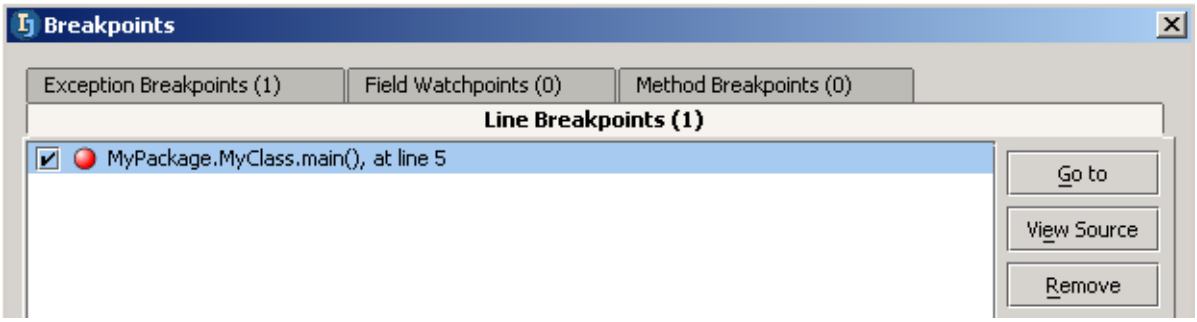


Figure 3.65. Dialog breakpoints (547)

Note: To open this dialog from the main menu select **Run / View Breakpoints Ctrl-Shift-F8**.

3.119. Close the dialog.

3.10.4. Step through application

3.120. Click on the debug icon (or from the main menu select **Run / Debug Shift-F9**). The dialog "Debug - MyApplication" appears.
3.121. Click **Debug**. The application starts and halts at the breakpoint. The debug pane is displayed.

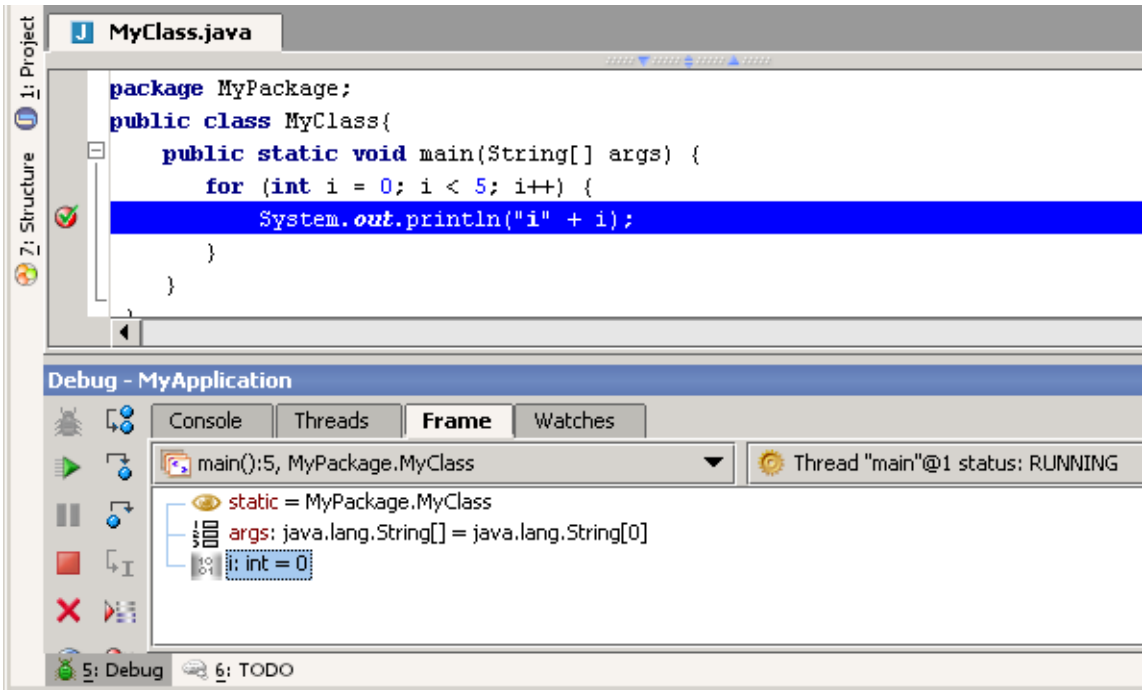


Figure 3.66. Debug pane (545)

3.122. Click on the icon **Step Over** (or from the main menu select **Run | Step over F8**). The method is stepped over and the current line is highlighted in blue.

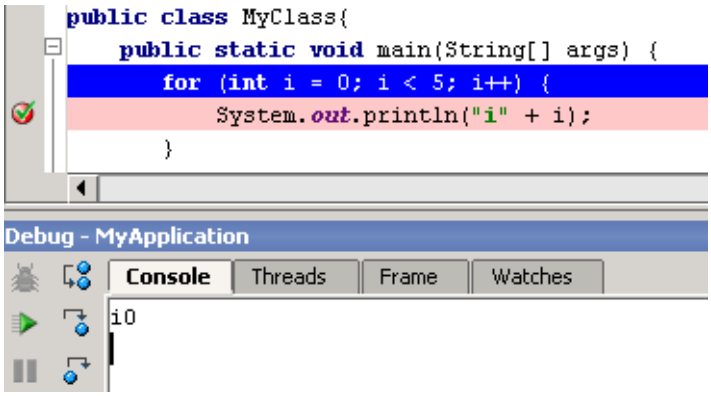


Figure 3.67. Step over (543)

3.123. Click on the icon **Resume** (or from the main menu select **Run | Resume program F9**). Program execution halts at the breakpoint.
3.124. Right-click on the breakpoint marker.
3.125. Select **Disable**. The breakpoint marker is changed.

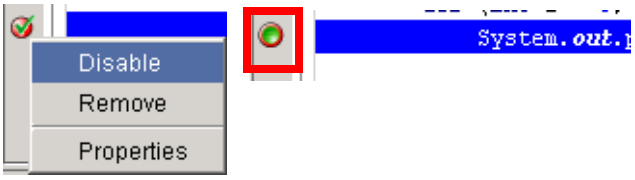


Figure 3.68. Disable breakpoint (541,540)

3.126. Click **Resume**. The application finishes.

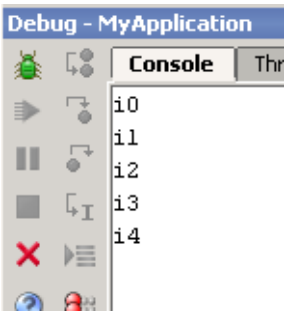


Figure 3.69. Application finishes (539)

Part B. Projects / dirs / files

20021029TTT last edit.

The chapters in this part describe the extensive functionality IDEA provides for creating and managing

4. Projects (page 63). Demonstrates how IDEA project concepts make it as simple as possible to manage a software project.

5. Directories (packages) (page 75). Demonstrates how directories and packages can be created and managed within an IDEA project.

6. Files (page 81). Demonstrates how IDEA makes it as simple as possible to create and manage any type of file.

4. Projects

20021030TTT: text added. some text taken from help.

contact: valentin.

There are 2 main groups of settings for your workspace:

- IDE settings
- Project properties

IDEA settings apply for the development workstation and do not vary for each project. To get an idea of what these settings are, look at the tabs in the dialog “IDEA Settings” (select **Options | IDEA Settings** to open):

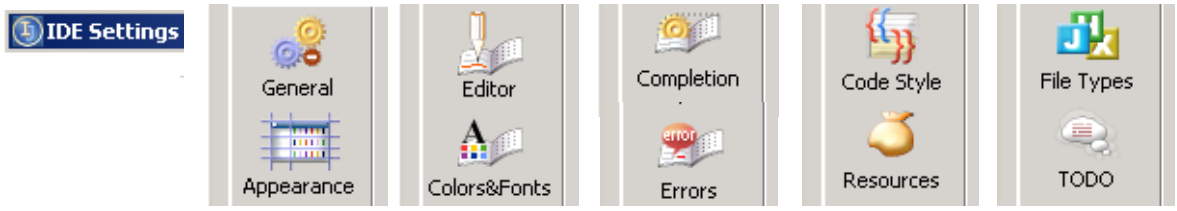


Figure 4.1. IDEA settings tab icons (a003,a001,a002)

Project properties are specific to each project. To get an idea of what these settings are, look at the tabs in the dialog “Project Properties” (select **File | Project Properties** to open):

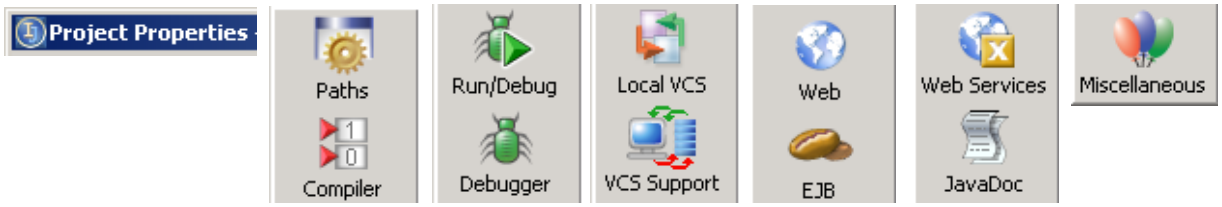


Figure 4.2. Project properties settings tab icons (a004,a005,a006)

A project is specified by the

- **Project name**
- **Project location** (directory where all project files are stored)

The name and location specified above becomes the name and location of the project .ipr file (an XML file that contains all project settings)

The most basic project settings include the following:

- **Target JDK**
- **Paths**:
  - Output path
  - Project path
  - Source path
  - Class path

Thus, when you created a project in the quick start (3.1. Create project (page 32)) you did the following:

- **3.1.1. Specify project name / location (page 32)**
- **3.1.2. Specify target JDK (page 33)**
- **3.1.3. Specify project paths (page 35)**

TIn this chapter you will learn more of the basics for working with projects:

- **4.1. Basic operations (page 64)**. Describes how create, open, reopen and close projects.
- **4.2. View / Modify settings (page 66)**. Describes the various views of a project.

4.1. Basic operations

?? can you copy or delete projects??

This section describes how to

- Create a **New (New Project Wizard)** project
- **Open** an existing project
- **Close** an open project
- **Reopen** a closed (but previously opened) project
- **Delete** a project

4.1.1. New (New Project Wizard)

You already created a new project in **3.1. Create project (page 32)**.

4.1.2. Open

To open a project, open the project **.ipr** file.

4.1. Select **File | Open project**. The dialog “Open project” appears.
4.2. Double-click on the **project** (**.ipr**) **file** that you want to open.

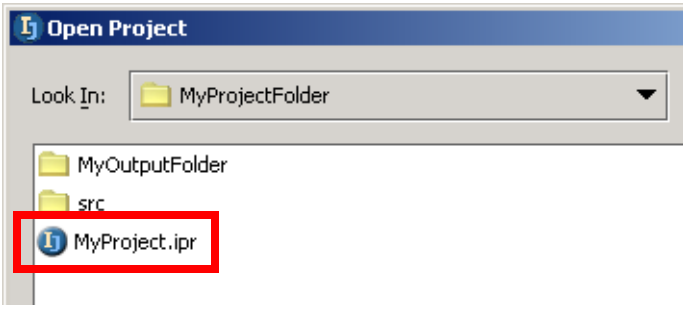


Figure 4.3. Open project .ipr file (617)

Note: If a project is already open in IDEA, then you will be asked whether to open the project in a new frame:

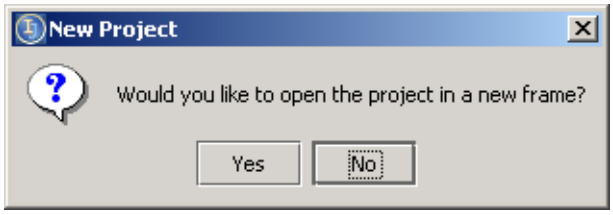


Figure 4.4. “Open in new frame?” (a007)

If you answer yes, then a new frame will appear.

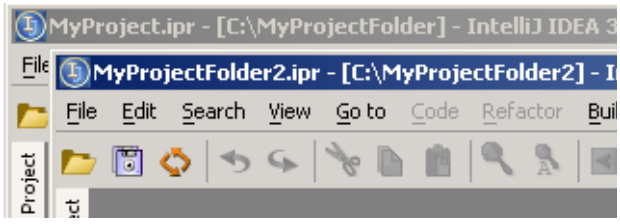


Figure 4.5. New frame (a008)

4.1.3. Close

4.3. Select **File | Close Project**.

4.1.4. Reopen

4.4. Select **File | Reopen | (project .ipr file)**.

4.1.5. Delete

To delete a project, simply delete the project directory (for example c:\MyProjectFolder).

4.2. View / Modify settings

You can view all project properties in the

- **4.2.1. Project properties dialog (page 66)**

The project paths can also be modified in the

- **4.2.2. Project tool (page 72)**

Many project settings can also be modified in

- **4.2.3. Other dialogs (page 73)**

Although not recommended for making changes, all project properties are also specified in the

- **4.2.4. Project xml file (.ipr) (page 73)**

4.2.1. Project properties dialog

Dialog “Project Properties” provides access to all project settings.

The most important tab when creating projects is the

- **4.2.1.1. Paths tab (page 66)**

Other settings that you will become acquainted with throughout this tutorial are in the

- **4.2.1.2. Other tabs (page 71)**

4.2.1.1. Paths tab

The tab “Paths” specifies the project paths. You already specified project paths with the help of the new project wizard in section **3.1. Create project (page 32)**. This section shows how to change these settings in tab “Paths” (without the wizard).

4.5. Select **File | Project properties...**. The dialog “Project properties” tab “Paths” is opened.

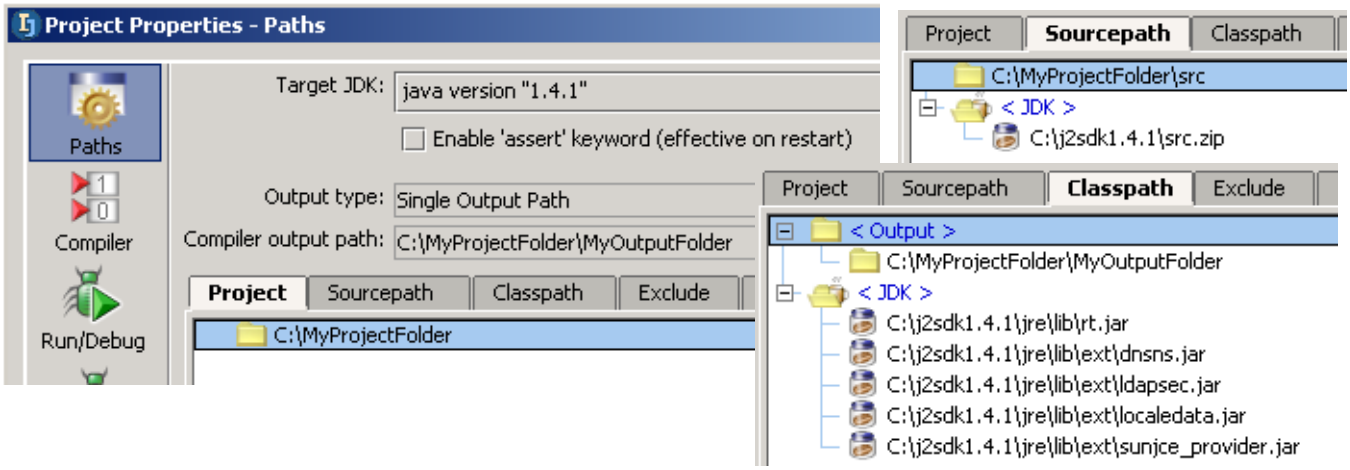


Figure 4.6. Project properties tab Paths (468,467,466)

The following settings are shown:

- **4.2.1.1.1. Target JDK (page 67)**
- **4.2.1.1.2. Output path (page 68)**
- **4.2.1.1.3. Directory (page 69)**
- **4.2.1.1.4. Sourcepath (page 70)** (directory, jar, zip) or
- **4.2.1.1.5. Classpath (page 71)** (directory, jar)

4.2.1.1.1. Target JDK

This section demonstrates how to add and select a different target JDK (note that this example, for the sake of simplicity, uses the same installed JDK).

You have already done this with the wizard (see **3.1.2. Specify target JDK (page 33)**).

4.6. Display the drop-down list for “Targe JDK”. Note that only 1 target JDK is available.

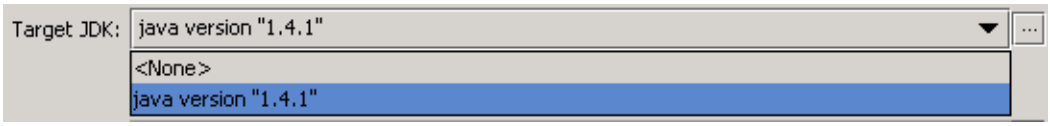


Figure 4.7. Folder added to project (a011)

4.7. Click on the **Target JDK** ellipsis button (...). The dialog “Configure JDKs” appears.

4.8. Click on the **Create JDK insert** button (+). The dialog “Select JDK Home directory” appears.

4.9. Select **j2sdk1.4.1**.

Figure 4.8. Select JDK home directory (a014)

4.10. Click **OK**. The configured JDK “java version 1.4.1 (1)” is shown.

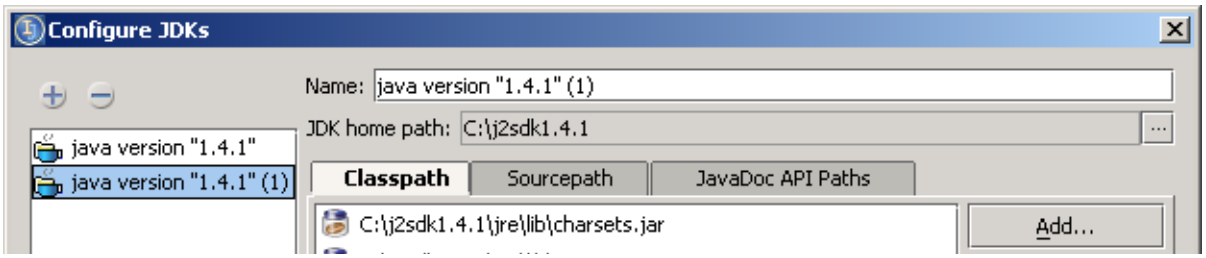


Figure 4.9. Configured JDK (a015)

4.11. Click **OK**. The new target JDK is shown

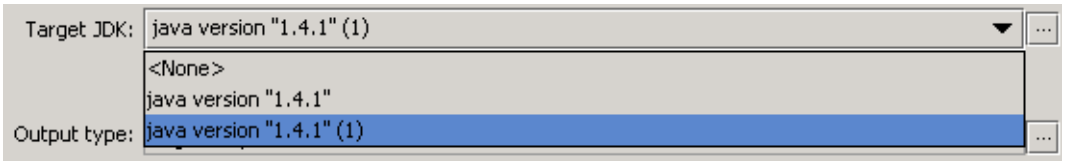


Figure 4.10. New target JDK (a016)

4.2.1.1.2. Output path

This section demonstrates how to create and select a different output path.
You have already done this with the wizard (see **3.1.3.1. Output path (page 35)**).

4.12. Click on the **compiler output path** ellipsis button (...). The dialog “Select path” appears.
4.13. Create dir **C:\MyProjectFolder\MyOutputFolder2**.

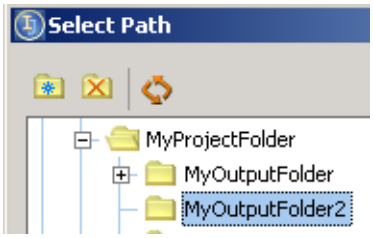


Figure 4.11. New output folder (a017)

4.14. Click **OK**. The new compiler output path is shown.

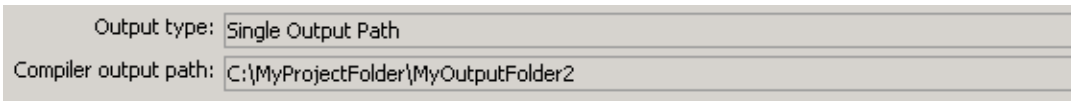


Figure 4.12. New compiler output path (a020)

4.2.1.1.3. Directory

You can

- **Add**
- **Move**
- **Remove**

a directory.

4.2.1.1.3.1. Add

4.15. Select tab **Project**.
4.16. Click **Add**. The dialog “Select Path” appears.
4.17. Create folder **C:\MyProjectFolder2**.
4.18. Click **OK**. The folder is added (to the end of the list).

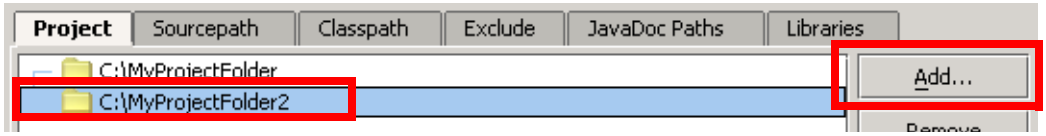


Figure 4.13. Folder added to project (612)

4.2.1.1.3.2. Move

4.19. Click on the added folder.
4.20. Click **Move up** and **Move down**. The location of the folder is changed.

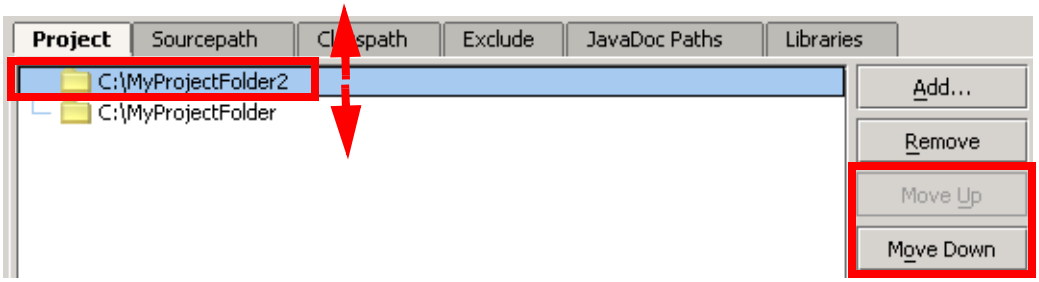


Figure 4.14. Folder moved (up and down) (613)

4.2.1.1.3.3. Remove

4.21. Click on **Remove** to remove from the project (not delete from the hard disk) the selected folder.

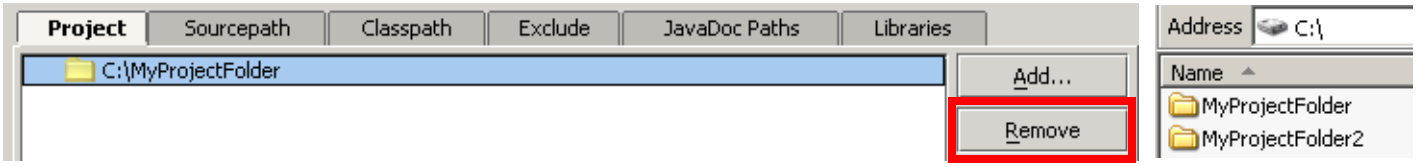


Figure 4.15. Folder removed (from project) (a018,a019)

4.2.1.1.4. Sourcepath

If the sources for classes are supplied as a

- jar (or zip) or
- directory of files

then you can

- **Add**
- **Move**
- **Remove**

them to/within/from the Sourcepath.

4.2.1.1.4.1. Add

4.22. Select the tab **Sourcepath**.
4.23. Select **Add**. The “Select Path” dialog appears.
4.24. Select the jar or dir.

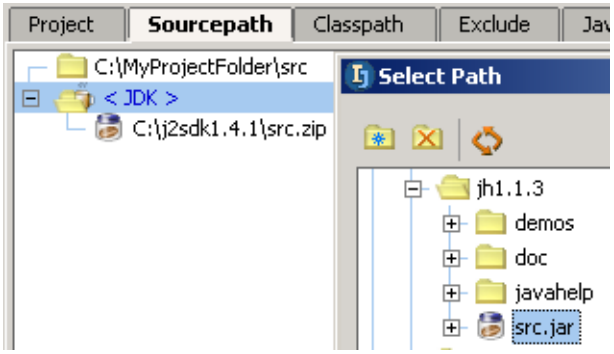


Figure 4.16. Select folder or jar (240)

4.25. Click **OK**. The jar or folder is added (to the end of the list).

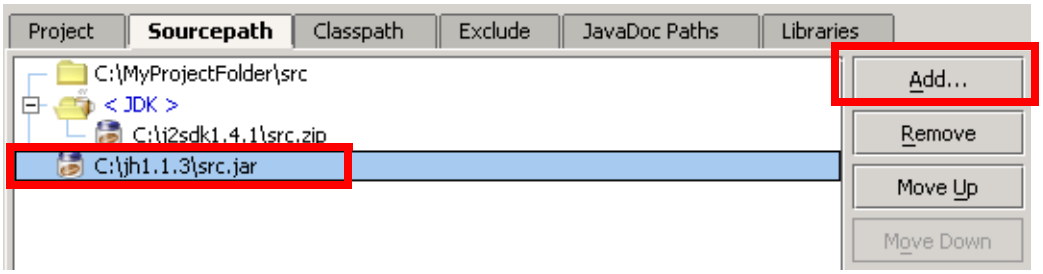


Figure 4.17. Folder added to project (615)

4.2.1.1.4.2. Move

Click to move up or down.

4.2.1.1.4.3. Remove

Click to remove (not delete from the file system).

4.2.1.1.5. Classpath

If the sources for classes are supplied as a

- jar or
- directory of files

then then you can

- **Add**
- **Move**
- **Remove**

them to the Classpath.

4.2.1.1.5.1. Add

4.26. Select the tab **Classpath**.
4.27. Select **Add**. The “Select Path” dialog appears.
4.28. Select **C:\MyProjectFolder\MyOutputFolder**.
4.29. Click **OK**. The directory is added to the classpath.

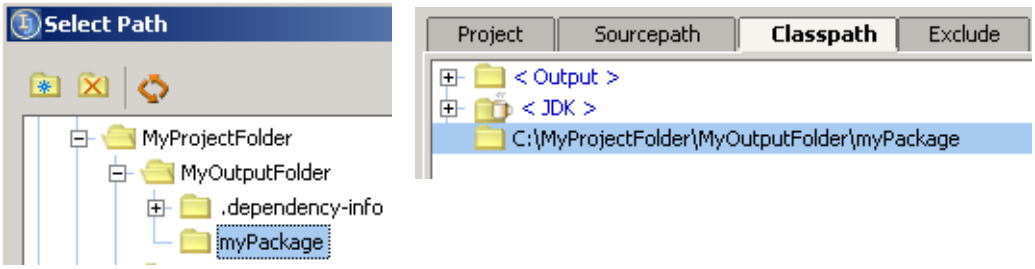


Figure 4.18. Added to classpath (a021,a022)

4.30. Double-click on MyClass in the Project tool Classpath.

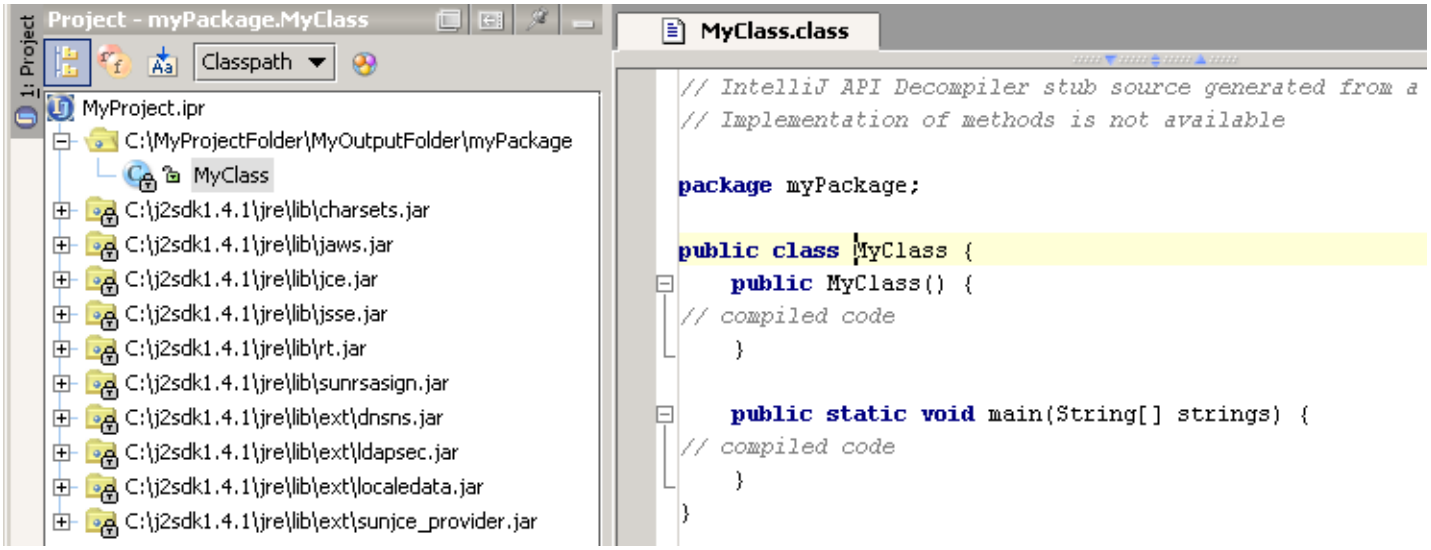


Figure 4.19. Class file opened in project tool (a023)

4.2.1.1.5.2. Move

Click to move up or down.

4.2.1.1.5.3. Remove

Click to remove (not delete from the file system).

4.2.1.2. Other tabs

The settings in the other tabs will be introduced throughout this tutorial.

4.2.2. Project tool

In the project tool you can

- **Display paths**
- **Remove from paths** (directories, jars, files, etc.)

4.2.2.1. Display paths

4.31. In the frame: Click on the tab **Project**. The project path is displayed.

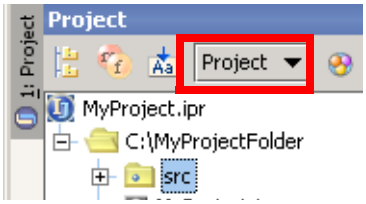


Figure 4.20. Project info in the project tool window (588)

4.32. Select from the drop-down list (with “Project” currently selected) **Sourcepath**. The source path info is displayed.

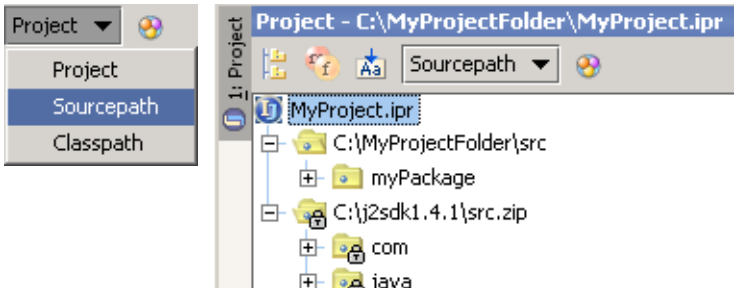


Figure 4.21. Sourcepath (575,587)

4.33. Select from the drop-down list **Classpath**. The classpath info is displayed.

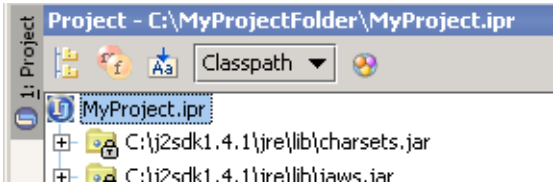


Figure 4.22. Classpath info in main dialog (586)

4.2.2.2. Remove from paths

4.34. In the classpath: Right-click on **C:\MyProjectFolder\MyOutputFolder\myPackage**.

4.35. Select **Remove from classpath**. A confirmation dialog appears.

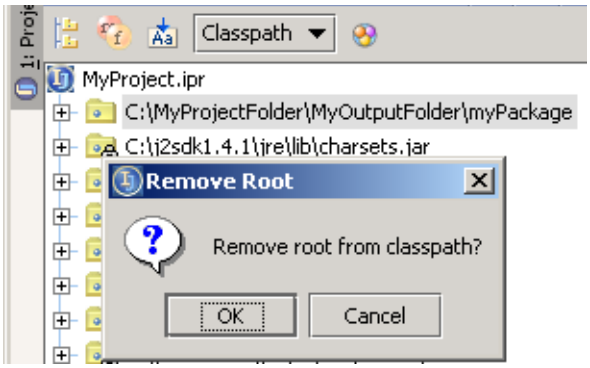


Figure 4.23. Removed from classpath (a024)

4.36. Click **OK**. The directory is removed from the classpath.

4.2.3. Other dialogs

Many of the project settings can be modified in other (ie, not the project properties) dialogs. You will see this throughout the rest of this tutorial.

4.2.4. Project xml file (.ipr)

4.37. Open **C:\MyProjectFolder\MyProject.ipr** in a web browser.

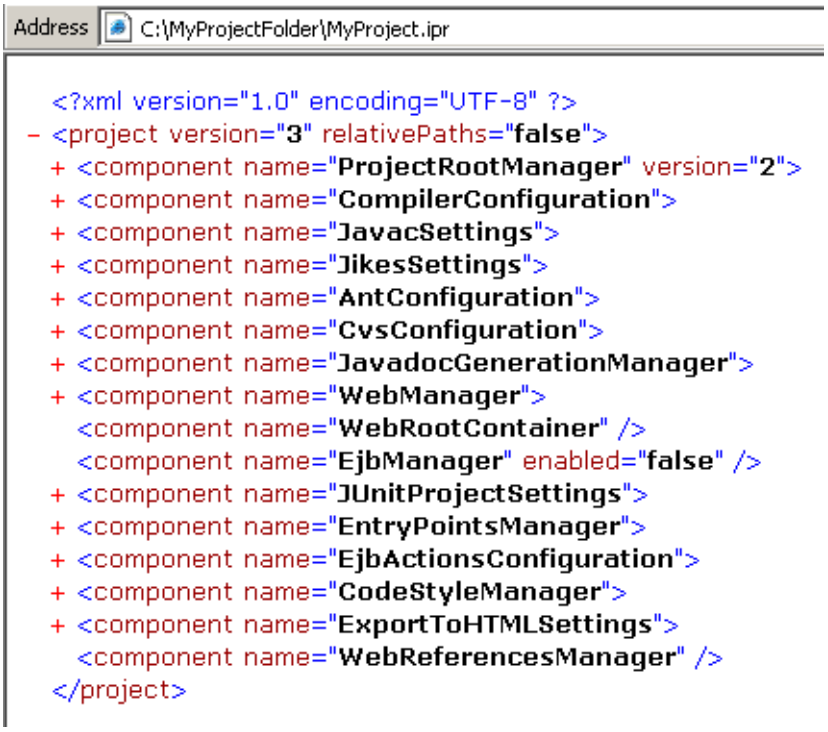


Figure 4.24. Project .ipr files (590 (iws589))

This file specifies all project properties. Note, however, that it is not recommended to edit this file directly.

5. Directories (packages)

20021030TTT updated.
contacts: valentin
to select: view \ select in , popup dialog. ?? why is “hierarchy” not in the list in the popup??
This chapter introduces the basics for managing directories (packages) within IDEA:

- **5.1. Basic operations (page 75)** describes how create and delete directories and packages.

5.1. Basic operations

20021009TTT can also use Edit | New / Delete. XXX ??
The section shows how to

- **5.1.1. Create (page 76)**
- **5.1.2. Delete (page 78)**
- **5.1.3. Cut / Copy / Paste (page 79)**
- ~~**5.1.4. Recover XXX (page 79)**~~
- **5.1.5. Rename (refactor) (page 79)**
- **5.1.6. Move (refactor) (page 79)**

5.1.1. Create

You created a package already in section **3.2. Create package (page 38)**.

~~20021030TTT where to put this??~~

~~Note that when viewing packages it is convenient to sometimes "flatten" packages.~~

~~4.38. Select the **Sourcepath**.~~

~~4.39. Click the **Flatten packages** icon ( ). Note how the packages are flattened.~~

~~Figure 4.25. Packages not flattened / flattened (645,646)~~

You can create a directory / package with the

- **5.1.1.1. Project tool (page 76)**
- **5.1.1.2. Commander (page 77)**

5.1.1.1. Project tool

4.40. Right-click on **\MyProjectFolder**.

4.41. Select **New | Directory**. The dialog "New directory" appears.

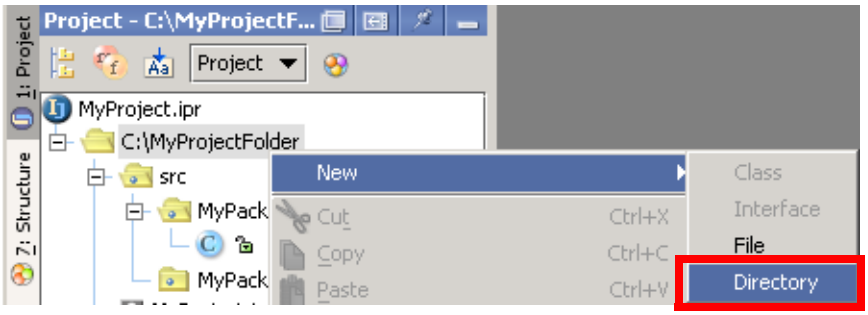


Figure 4.26. New directory (626)

4.42. For the directory name enter **MyDirectory**.

4.43. Click **OK**.

Figure 4.27. New directory (239)

5.1.1.2. Commander

4.44. Open the commander.
4.45. Display contents of **src**.
4.46. Right-click.
4.47. Select **New | Package**. The dialog “New package” appears.
4.48. Enter **myPackage2**.
4.49. Click **OK**. The package is created.

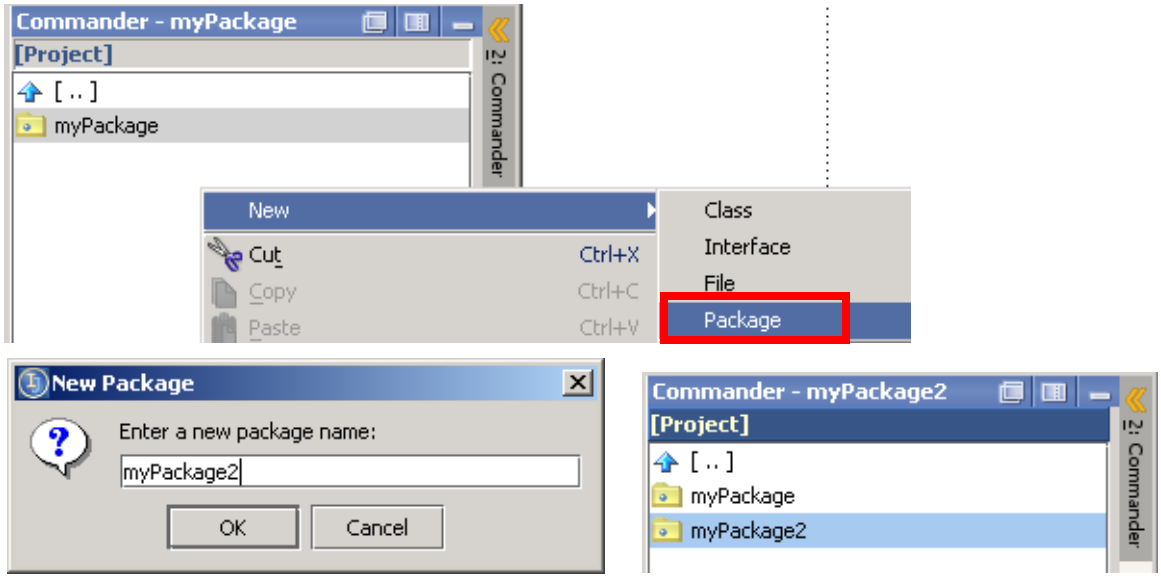


Figure 4.28. New package in Commander (a025,a027,a026)

5.1.2. Delete

You can create a directory / package with the

- **5.1.2.1. Project tool (page 78)**
- **5.1.2.2. Commander (page 78)**

5.1.2.1. Project tool

4.50. Select the **package / directory**.
4.51. Click **DEL**. A warning dialog appears.
4.52. Click **OK**. The package / directory and any files / subdirectories are deleted.

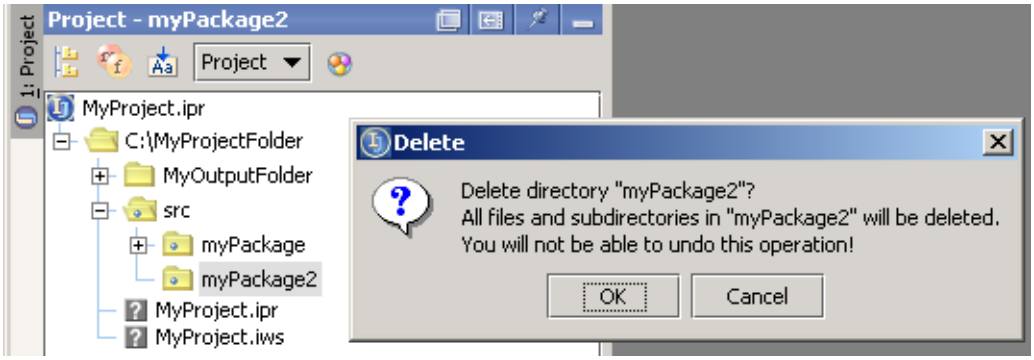


Figure 4.29. Delete package in project tool (a028)

5.1.2.2. Commander

4.53. Select the **package / directory**.
4.54. Click **DEL**. A warning dialog appears.
4.55. Click **OK**. The package / directory and any files / subdirectories are deleted.

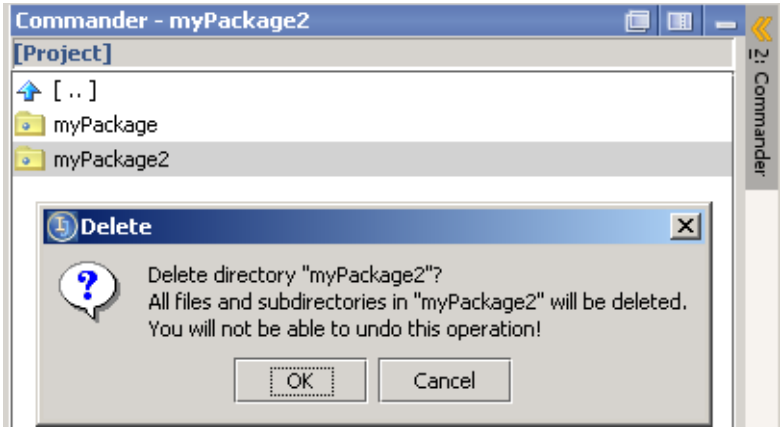


Figure 4.30. Delete package in commander (a029)

5.1.3. Cut / Copy / Paste

4.56. Create dir **C:\MyProjectFolder\AFolder**.
4.57. Create dir **C:\MyProjectFolder\BFolder**.
4.58. In the project tool select **AFolder**.
4.59. Press **CTRL-X** (cut).
4.60. Select **BFolder**.
4.61. Press **CTRL-V** (paste). The dialog “Move” appears.
4.62. Click **OK** to move the folder.

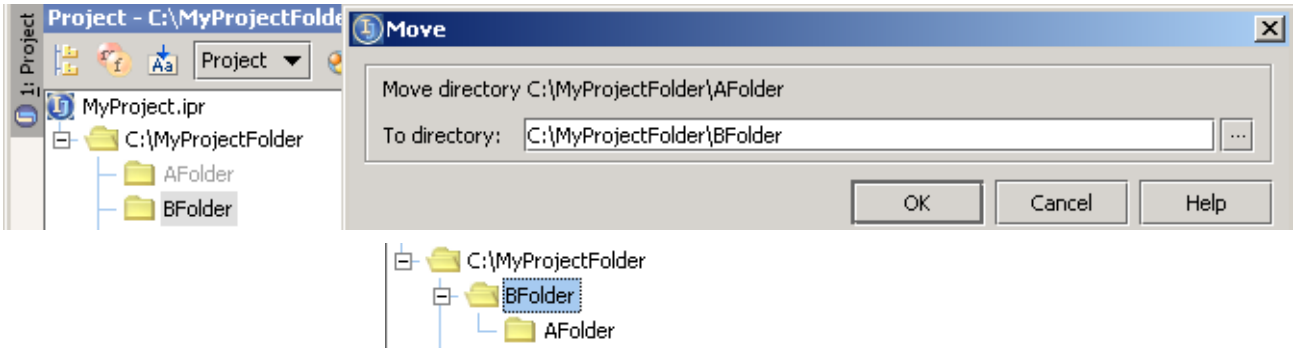


Figure 4.31. Cut / paste folder (a030,a031)

4.63. Select **AFolder**.
4.64. Press **CTRL-C** (copy).
4.65. Select **C:\MyProjectFolder**.
4.66. Press **CTRL-V** (paste). The dialog “Copy” appears.
4.67. Click **OK** to copy the folder.

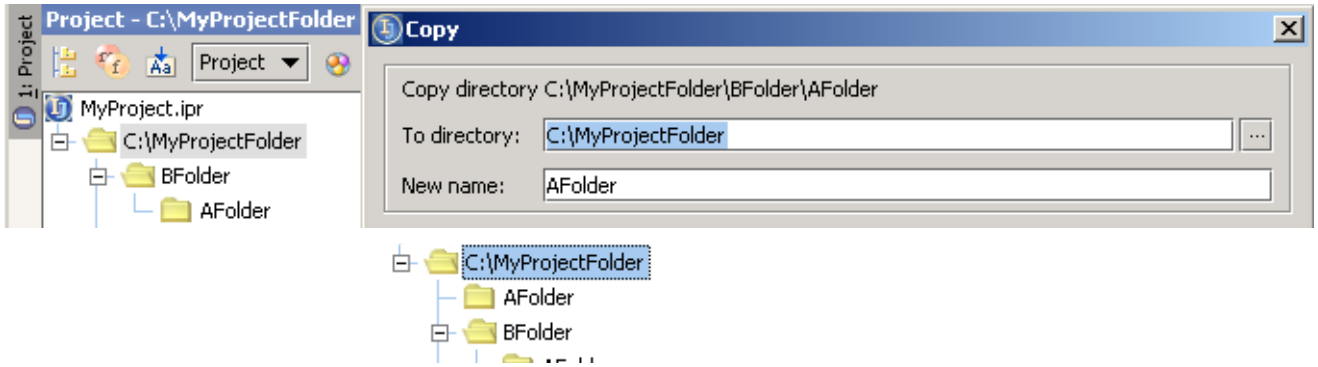


Figure 4.32. Copy / paste folder (a032,a033)

~~5.1.4. Recover XXX~~

5.1.5. Rename (refactor)

Renaming a directory / package involves refactoring the directory / package. This is demonstrated in chapter **9. Code Refactoring (page 201)** section **9.2.1. Package (page 203)**.

5.1.6. Move (refactor)

Moving a directory / package involves refactoring the directory / package. This is demonstrated in chapter **9. Code Refactoring (page 201)** section **9.3.1. Package (page 211)**.

6. Files

20021030TTT last edit.
contacts: valentin
to select: view \ select in , popup dialog. ?? why is “hierarchy” not in the list in the popup??
mention custom file types.

This chapter introduces the basics for working with files in IDEA:

- **6.1. Basic operations (page 81)** describes how create, rename, delete, etc. files.
- **6.2. Types / Templates (page 88)** describes the types of files.
- **6.3. Views (page 94)** describes the various views of files.

6.1. Basic operations

The following file operations are supported:

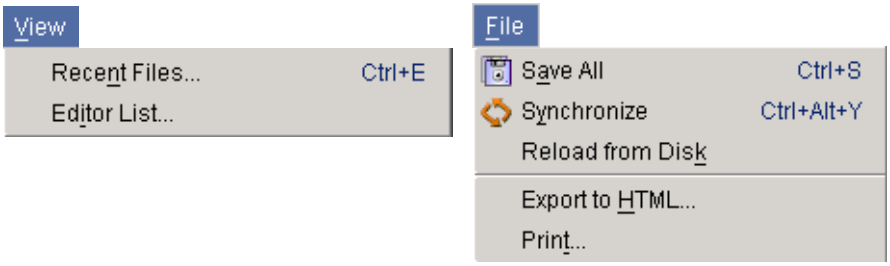


Figure 5.1. Basic file operations (444,443,446,445)

6.1.1. Create

You can create the following types of files:

- **Class**
- **Interface**
- **File (text)**

6.1.1.1. Class

20021009TTT can also use Edit | New. XXX ??

5.1. Right-click on a package.
5.2. Select **New | Class**. The dialog “New Class” appears.

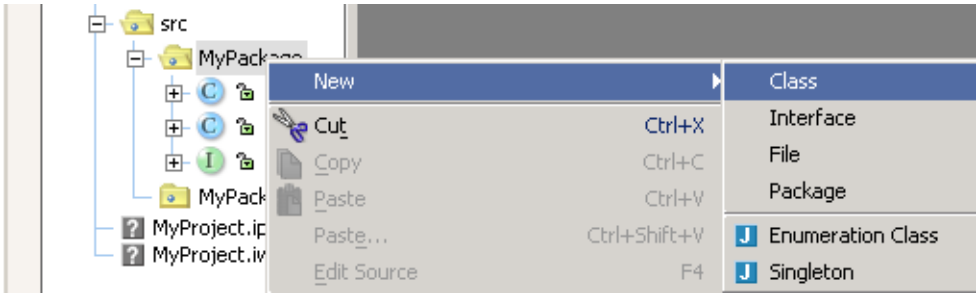


Figure 5.2. New class (627)

5.3. Enter the new class name.

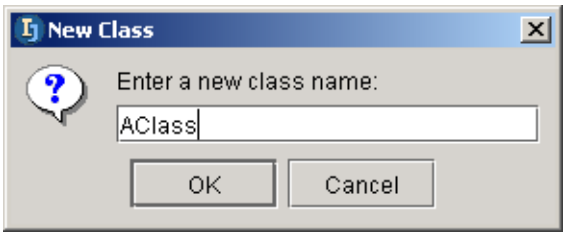


Figure 5.3. New class name (628)

5.4. Click **OK**. The class is created.

6.1.1.2. Interface

5.5. Right-click on a package.
5.6. Select **New | Interface**. The dialog “New Interface” appears.
5.7. Enter the new Interface name.
5.8. Click **OK**. The interface files is created.

6.1.1.3. File (text)

5.9. Right-click on a package or directory.
5.10. Select **New | File**. The dialog “New File” appears.
5.11. Enter the new file name and extension.
5.12. Click **OK**. The text file is created.

6.1.2. Rename (refactor)

Renaming a file may be a basic operation, but when a file is renamed IDEA checks for any references to the file and does any required refactoring. This is first demonstrated in Chapter **9. Code Refactoring (page 201)** section **9.2. Rename (page 203)**.

6.1.3. Move (refactor)

Similar to renaming, moving a file may be a basic operation, but when a file is moved IDEA checks for any references to the file and does any required refactoring. This is first demonstrated in Chapter **9. Code Refactoring (page 201)** section **9.3. Move (page 211)**.

6.1.4. Copy (refactor)

Similar to renaming, copying a file may be a basic operation, but when a file is copied IDEA checks for any references to the file and does any required refactoring. This is first demonstrated in Chapter **9. Code Refactoring (page 201)** section **9.3. Move (page 211)**.

6.1.5. Delete (safe)

20021009TTT can also use Edit | Delete. XXX ??

5.13. Select a class in the project directory.

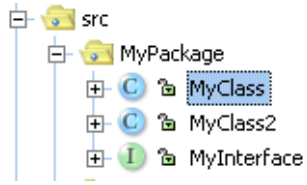


Figure 5.4. Select class (205)

5.14. Press **DEL**. The dialog “Safe delete” appears.

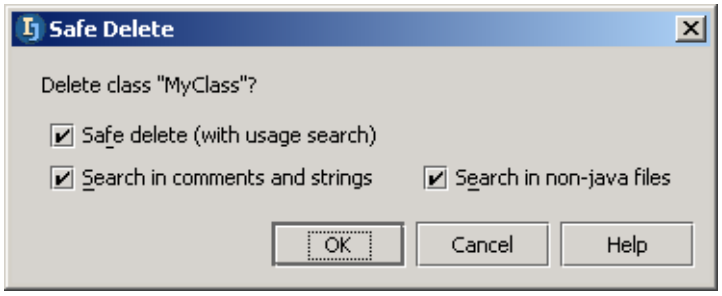


Figure 5.5. Safe delete (204)

5.15. Click **OK**. If the file is used anywhere, then the dialog “Usages detected” appears.

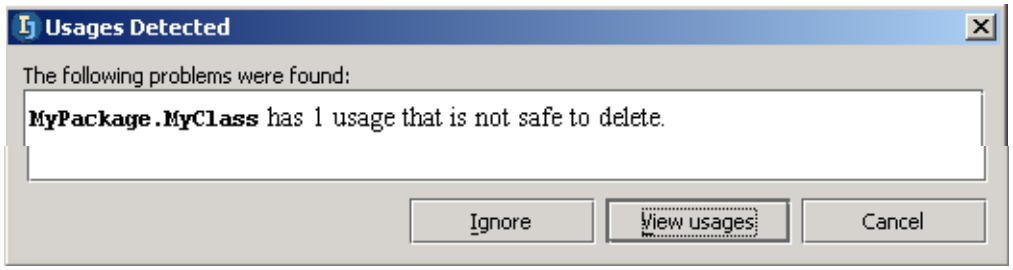


Figure 5.6. Usages detected (203,202)

5.16. Click **View usages**. The “Find” tool appears.

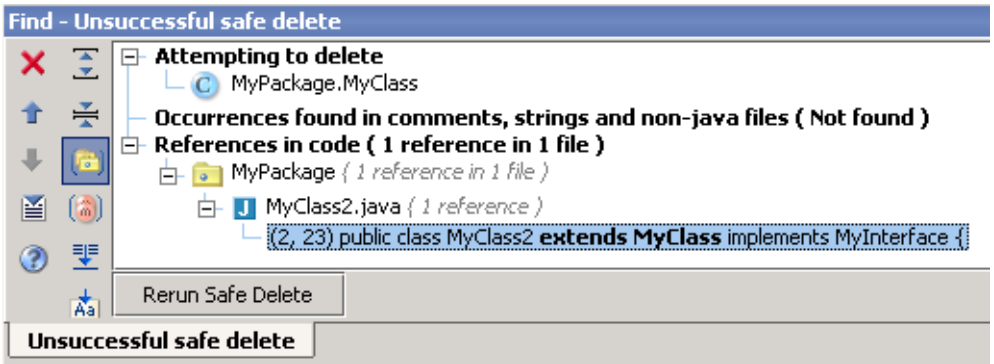


Figure 5.7. Found usages (201)

5.17. Click **Rerun safe delete** to again open the dialog “Safe delete”.

5.18. Click **OK**. Again the dialog “Usages detected” appears.

5.19. Click **Ignore**. The file is deleted.

6.1.6. Recover

To recover a deleted file:

5.20. Select the package the file was deleted from.
5.21. Select **Tools | Local VCS | Show history...**. The History dialog appears.
5.22. Double-click on the **Safe delete** action.

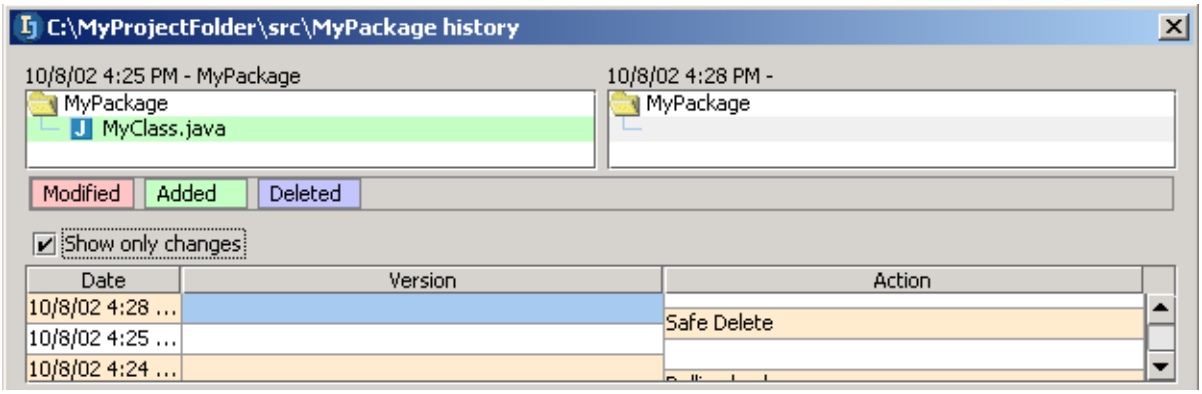


Figure 5.8. Safe delete action in history (200,199)

5.23. Right-click.
5.24. Click on **Rollback**. A confirmation dialog appears.
5.25. Click **OK**. The file is restored (the deletion is rolled back).

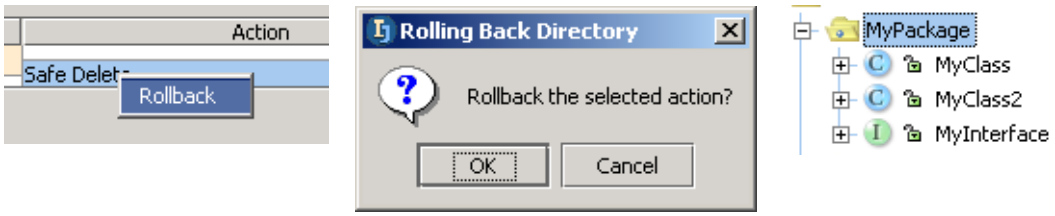


Figure 5.9. Rollback of deletion (198,197,196)

6.1.7. Export to HTML

5.26. Open the file in the editor.

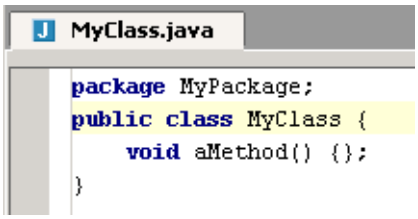


Figure 5.10. File for export in editor (657)

5.27. Select **File | Export to HTML...**. The dialog “Export to HTML” appears.

5.28. Select the output directory.

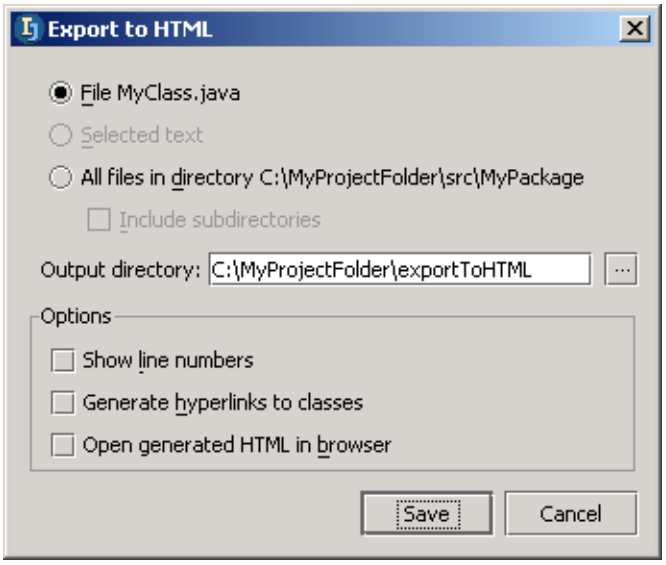


Figure 5.11. Export to html dialog (656)

5.29. Click **Save**. **C:\IntelliJ-IDEA-3.0\exportToHTML\hello\HelloWorld.java.html** is created and opened in a browser.

Figure 5.12. File exported to HTML (658)

6.1.8. Print

5.30. Open the file in the editor.
5.31. Select **File | Print...**. The dialog “Print” appears.

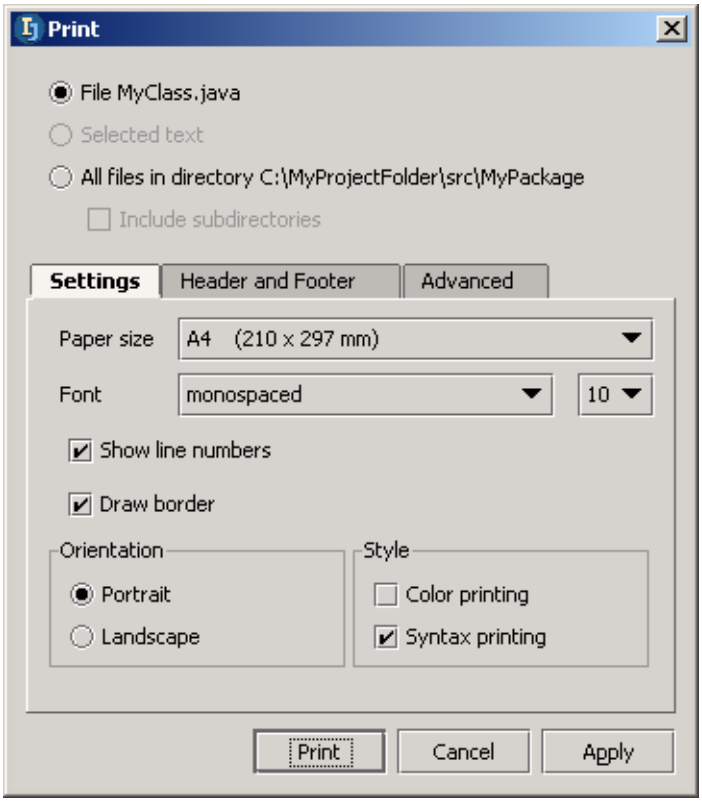


Figure 5.13. Export to html dialog (659)

5.32. Click **Print**. The standard print dialog appears.

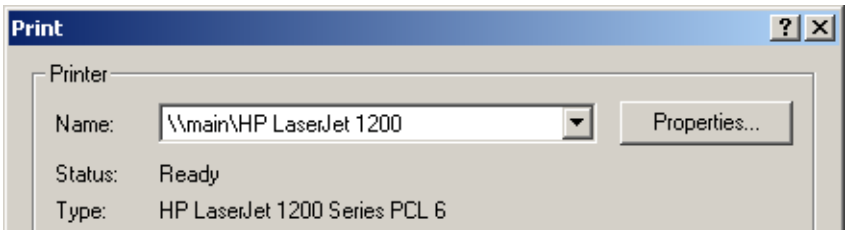


Figure 5.14. Windows print dialog (670)

5.33. Click **OK** to print.

6.2. Types / Templates

IDEA recognizes

- **6.2.1. Default file types (page 88)**
- **6.2.2. Custom file types (page 91)**

You can specify the initial contents of a file of a specific type using

- **6.2.3. Class / File templates (page 93)**

IDEA make it easier to work with various types of files by displaying recognized file types with special

- **7.4. Colors and fonts X (page 137)** and
- **7.5. Code style X (page 145)**

6.2.1. Default file types

IDEA recognizes the following default file types:

- **Archive**
- **Java class files**
- **HTML**
- **IDL**
- **Java source**
- **JSP**
- **JavaScript**
- **Text**
- **XML**

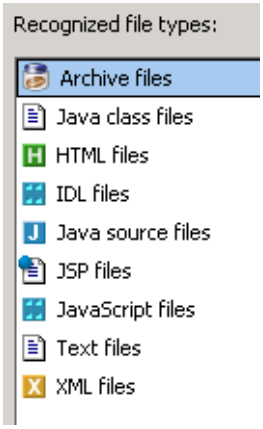


Figure 5.15. Default recognized file types (811)

Archive

In **section 3.1.3.3. Source path (page 35)** you added the J2SDK source zip to the IDEA source path. This allows you to easily view the contents of the zip files in IDEA.

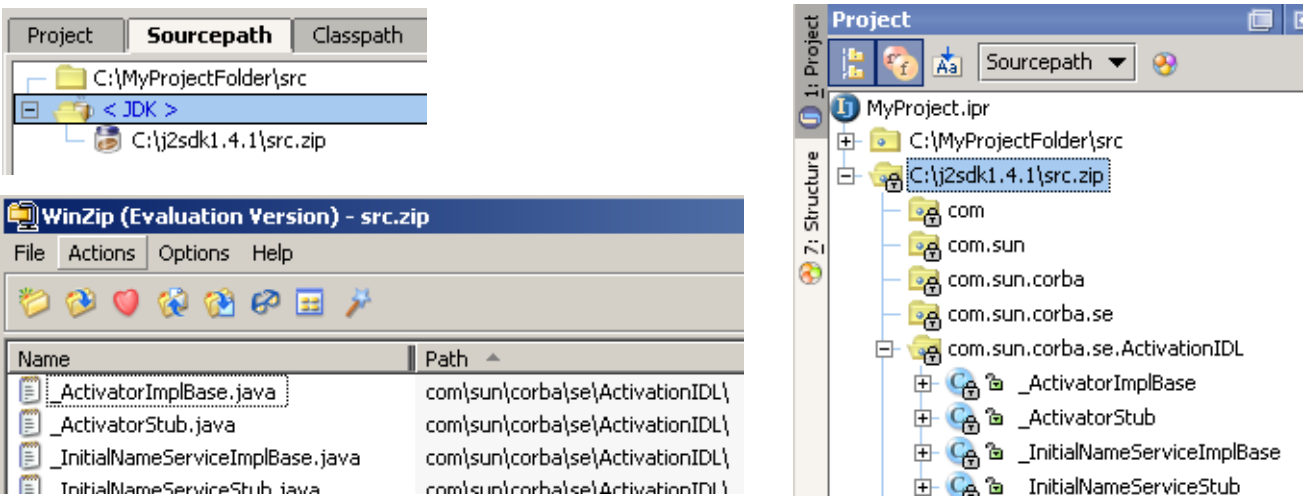


Figure 5.16. Archive file displayed in IDEA (805,806,807)

Java class files

IDEA recognizes automatically Java class files.

HTML

Colors and fonts for HTML files are described in **section 7.4.3. HTML X (page 139)**.

IDL

IDL files are displayed with special colors or fonts.

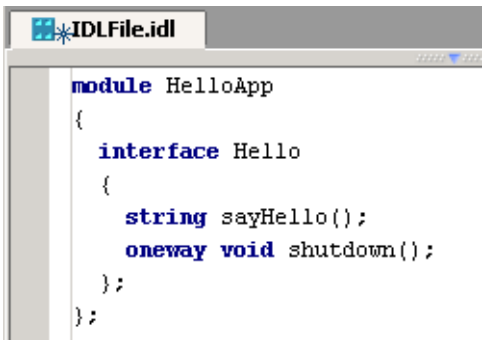


Figure 5.17. IDL (810)

Java source

Colors and fonts for Java sources files are described in **section 7.4.2. Java X (page 138)**.

JSP

Colors and fonts for JSP files are described in **section 7.4.5. JSP X (page 141)**.

JavaScript

JavaScript files are displayed with special colors or fonts.

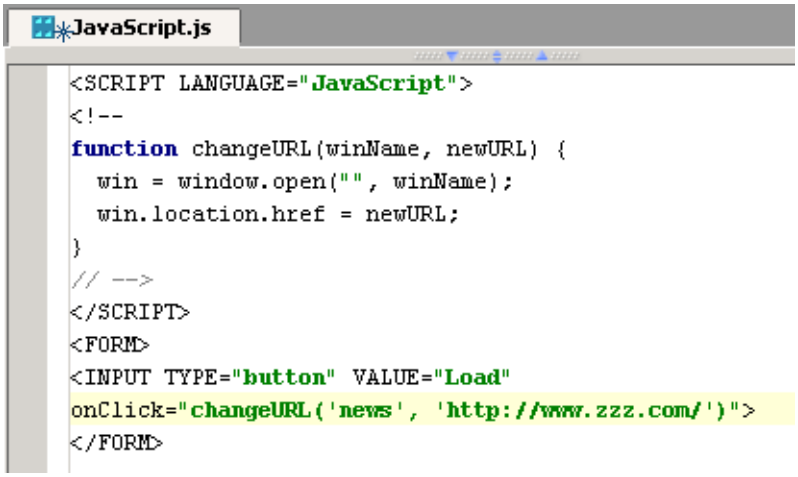


Figure 5.18. JavaScript (809)

Text

Text files are displayed with special colors or fonts.

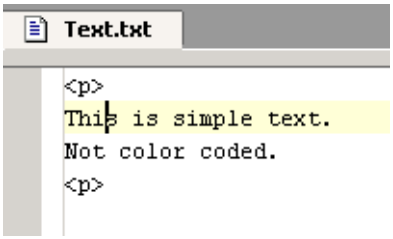


Figure 5.19. Simple text file (808)

XML

Colors and fonts for JSP files are described in **section 7.4.4. XML X (page 140)**.

6.2.2. Custom file types

IDEA automatically recognizes files types based on the file extension.
In the **IDEA Options | File types** you can

6.2.2.1. Add an extension

5.34. In “Recognized file types” select **Text files**.
5.35. In “Registered extensions” click **Add...**. The dialog “Add extension” appears.
5.36. As the new extension enter **text**.
5.37. Click **OK**. The new extension is in the list.

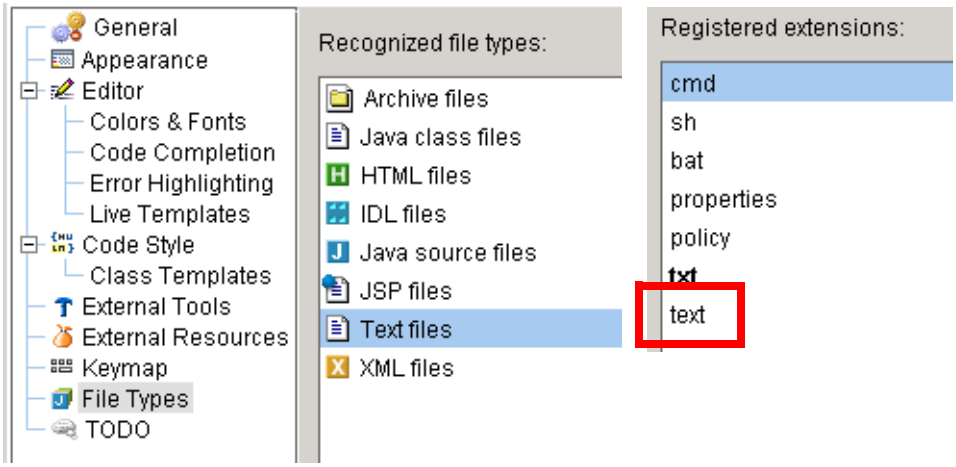


Figure 5.20. New recognized extension (421,420)

6.2.2.2. Add a file type and extension

5.38. In “Recognized file types” click **Add...**. The dialog “Add New File Type” appears.
5.39. Enter the parameters for the file type (see the diagram).

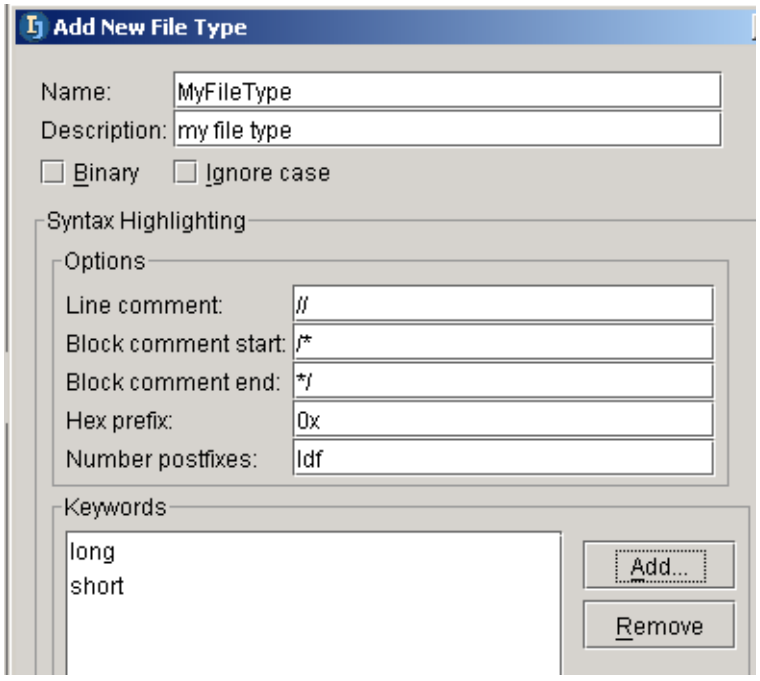


Figure 5.21. New file type parameters (419)

5.40. Add keywords.
5.41. Click **OK**. The file type appears in the list of recognized file types.
5.42. Add registered extension **myext**.

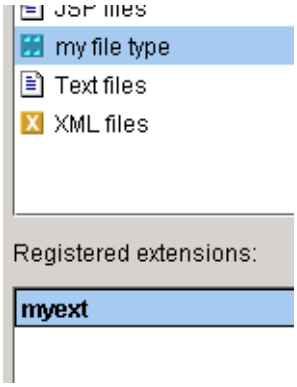


Figure 5.22. New file type and extensions (418)

6.2.3. Class / File templates

The initial contents of class / interface files are determined by a template.

5.43. Select **Options | File templates...**. The dialog “File templates” tab “Templates” is opened.
5.44. Select **New Class**. Note the default contents.
5.45. Select tab **Includes**. Note the default contents.

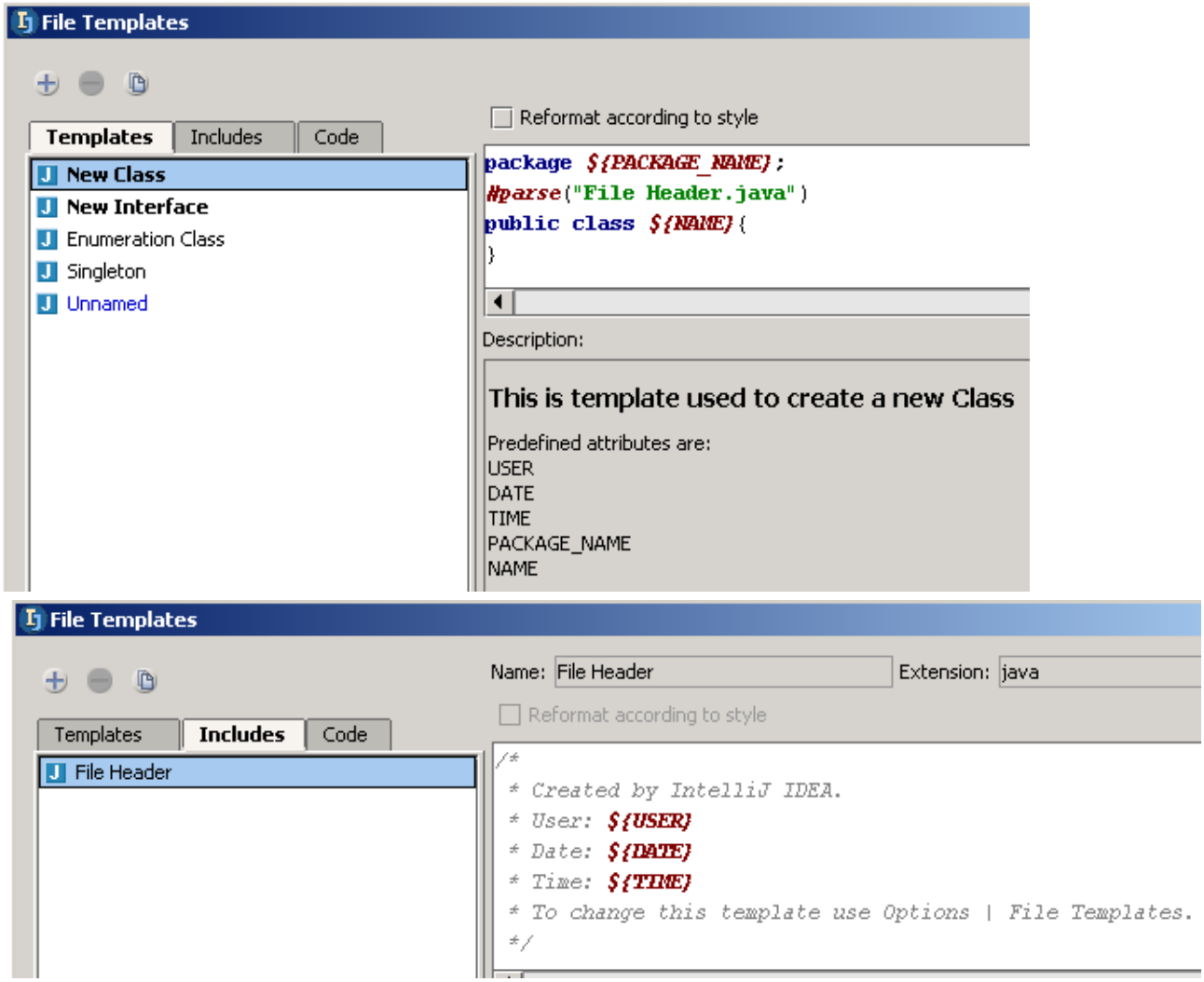


Figure 5.23. Class template (611,195)

Check **Reformat according to style** to reformat existing classes.

6.3. Views

There are 4 views that show the contents of a file

- **6.3.1. Editor (page 95)**
- **6.3.2. Project tool (show members) (page 95)**
- **6.3.3. Commander (page 95)**
- **6.3.4. (File) Structure tool (page 96)**

Also the

- **6.3.5. Hierarchy tool (page 100)**

shows how the contents of the current file are referenced, implemented, etc. in other files.

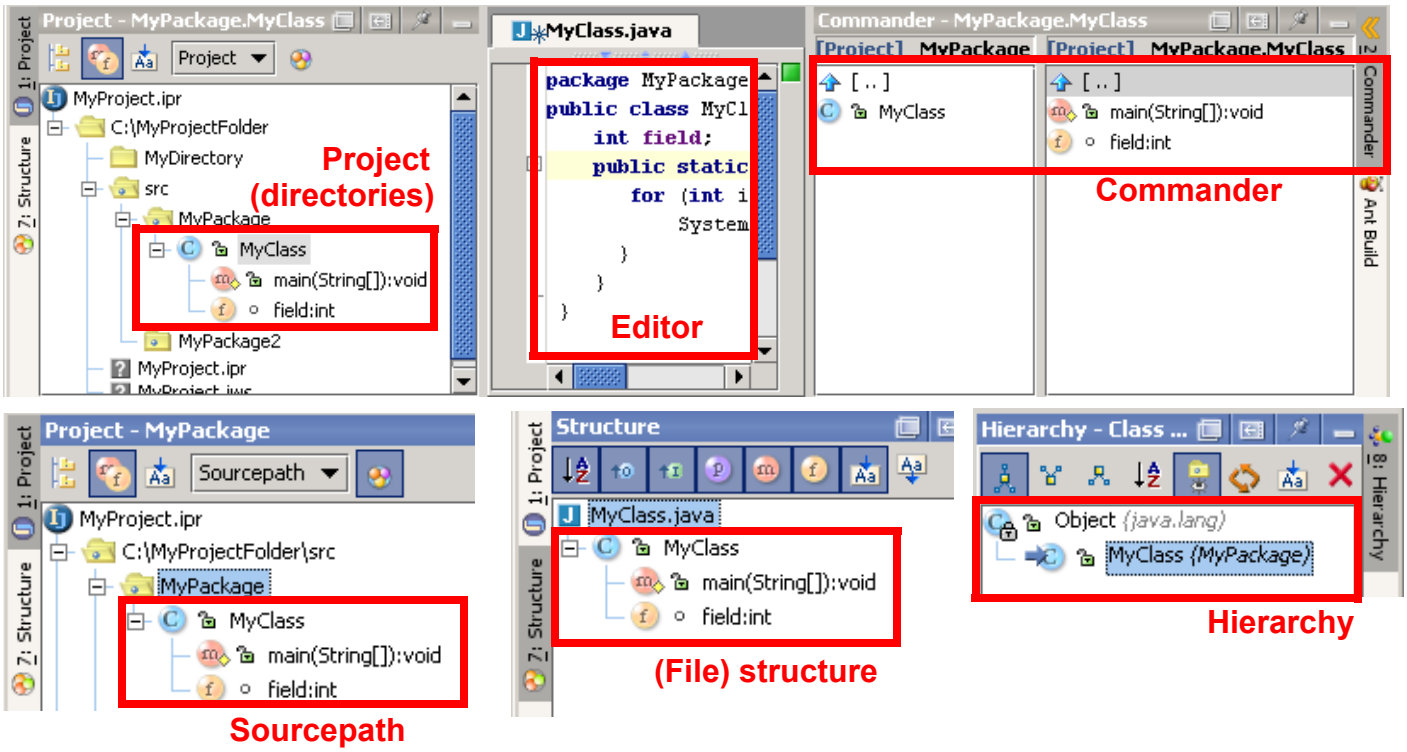


Figure 5.24. 5 views of a file (238,237,236,235)

6.3.1. Editor

The editor is the primary tool for making changes to text (add methods, fields, etc.).
The editor and the tools available within it are described in detail in

- **Chapter 7. Editor X (page 107)**
- **Chapter 8. Code Automation (page 163)**
- **Chapter 9. Code Refactoring (page 201)**

6.3.2. Project tool (show members)

The Project (directories) tool shows the methods, fields, etc. of a class.

5.46. Add the following to MyClass:

```
public class MyClass{
    int field;
```

5.47. Select the **Project** view.

5.48. Click the **Show members** icon ( ) to show the class members.

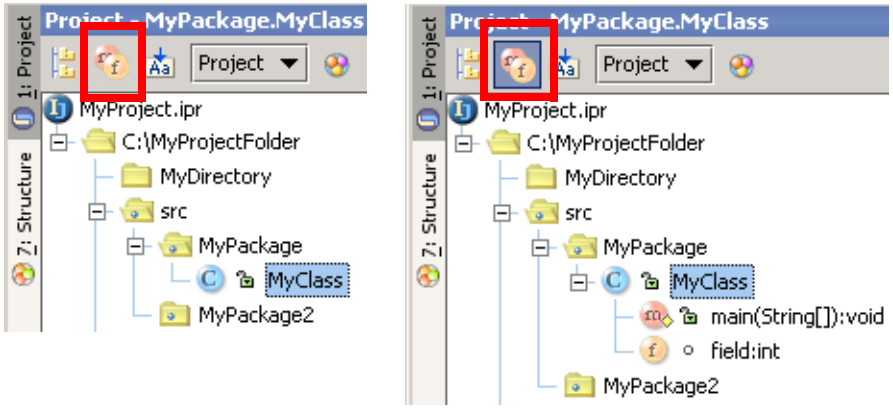


Figure 5.25. Members not shown / shown (234,233)

6.3.3. Commander

The commander allows you to view the contents of a file.

5.49. In the Commander: Navigate to **MyPackage.MyClass**.

5.50. Double-click on **main**. MyClass.java appears in the editor.

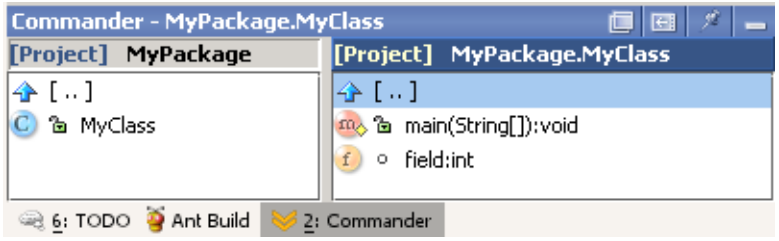


Figure 5.26. Viewing file contents with Commander (232)

6.3.4. (File) Structure tool

The Structure tool shows the structure of a class.

6.3.4.1. Tool variations

The file structure can be shown in 3 variations of the structure tool:

- **Normal**
- **From project tool**
- **Popup**

6.3.4.1.1. Normal

5.51. Modify **MyClass**:

```
package MyPackage;
public class MyClass {
    void aMethod() {};
}
```

5.52. Create **MyInterface**

```
package MyPackage;
public interface MyInterface {
  public void iMethod();
}
```

5.53. Create **MyClass2**

```
package MyPackage;
public class MyClass2 extends MyClass implements MyInterface {
    void aMethod(){};
    public void iMethod(){};
    int iField;
    public int getiField() {
        return iField;
    }
}
```

5.54. Select the **MyClass2** editor.

5.55. Click on **7. Structure** to display the structure.

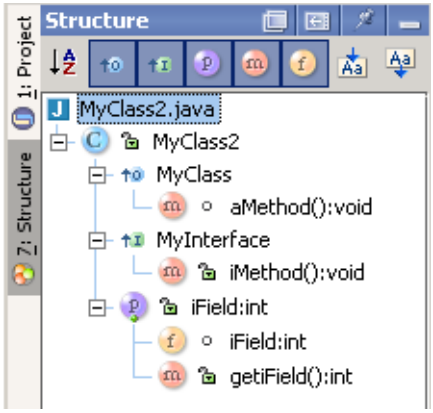


Figure 5.27. Structure tool (231)

6.3.4.1.2. From project tool

5.56. Close the **7. Structure** tool.

5.57. Open the **1. Project** tool.

5.58. Click on the **Show Structure** icon ( ). The structure is shown.

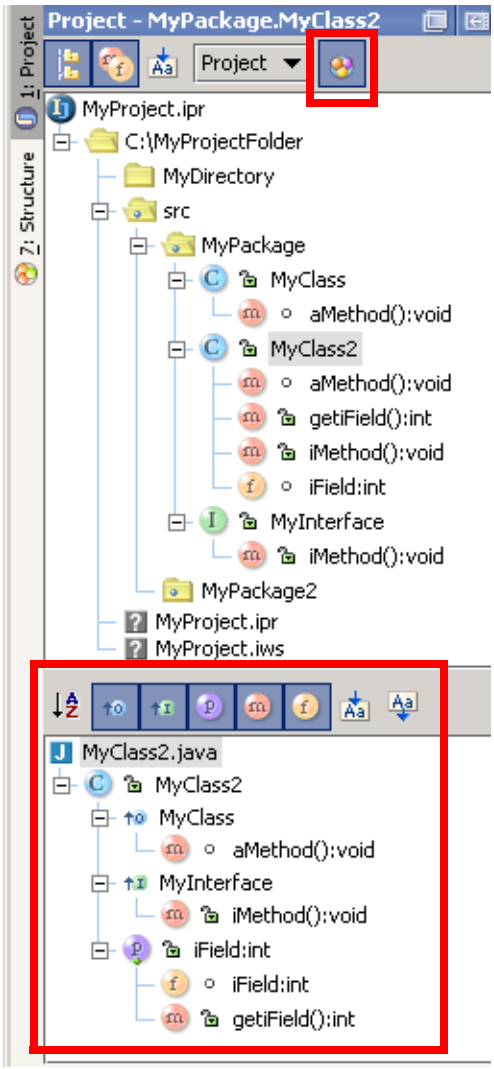


Figure 5.28. Structure tool as subset of Project tool (230)

6.3.4.1.3. Popup

5.59. Click in the **MyClass2** source text.
5.60. Select **View | File structure popop...**.

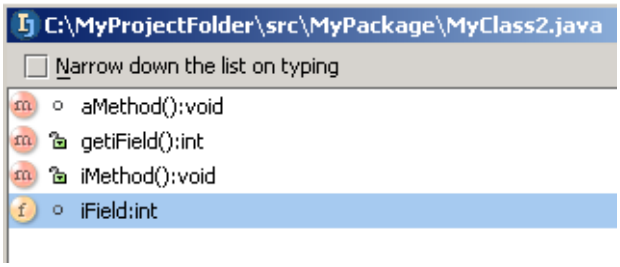


Figure 5.29. File structure popup (607)

6.3.4.2. Sort alphabetically

Select to sort alphabetically.

6.3.4.3. Group overriding methods

5.61. Unselect all.
5.62. Select the **Show methods** ( ) icon.
5.63. Select the **Group overriding methods** ( ) icon.

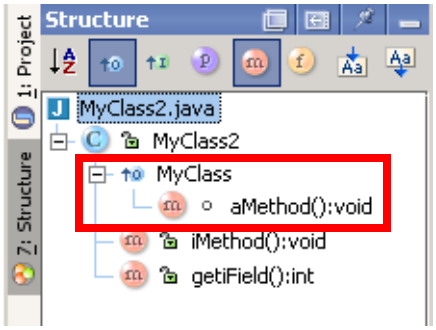


Figure 5.30. Group overriding methods (217)

6.3.4.4. Group implementation methods

5.64. Unselect the **Group overriding methods** ( ) icon.
5.65. Select the **Group implementation methods** ( ) icon.

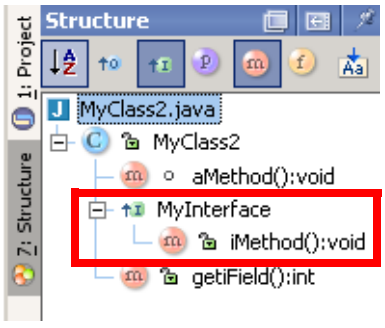


Figure 5.31. Group implementation methods (215)

6.3.4.5. Show properties

5.66. Unselect the **Group implementation methods** ( ) icon.
5.67. Select the **Show properties** ( ) icon.

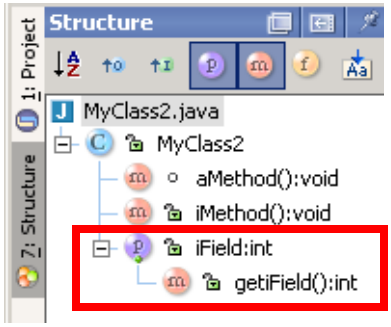


Figure 5.32. Show properties (213)

6.3.4.6. Show methods

5.68. Select the **Show methods** ( ) icon.

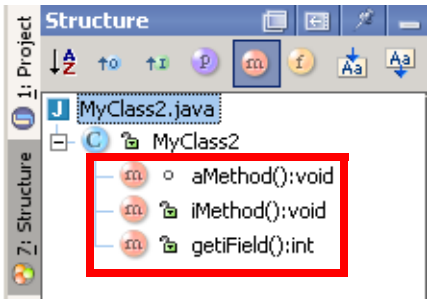


Figure 5.33. Show methods (212)

6.3.4.7. Show fields

5.69. Unselect the **Show methods** ( ) icon.

5.70. Select the **Show fields** ( ) icon.

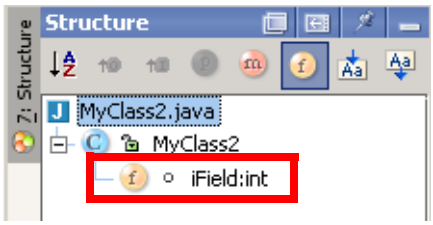


Figure 5.34. Show fields (210)

6.3.4.8. Autoscroll to source

20021008TTT is this right??

If selected: Scrolling within the Structure will open the source file.

6.3.4.9. Autoscroll from source

20021008TTT is this right??

If selected: Opening the source will automatically cause the source to be shown in the Structure.

6.3.5. Hierarchy tool

The Hierarchy tool shows the

6.3.5.1. Type hierarchy

Shows the type hierarchy.

6.3.5.1.1. Class hierarchy

5.71. Modify **MyClass**:

```
package MyPackage;
public class MyClass{
    int field;
    public static void main(String[] args) {
       for (int i = 0; i < 5; i++) {
           System.out.println("i" + i);
      }
    }
    void aMethod() {};
    void aMethod1(){
       MyClass2 mc2 = new MyClass2();
       mc2.aMethod2();
    };
 }
```

5.72. Modify **MyClass2**

```
package MyPackage;
public class MyClass2 extends MyClass {
    void aMethod(){};
    void aMethod2(){};
}
```

5.73. Select the editor for **MyClass**.

5.74. Select **View | Type Hierarchy**. The hierarchy is shown.

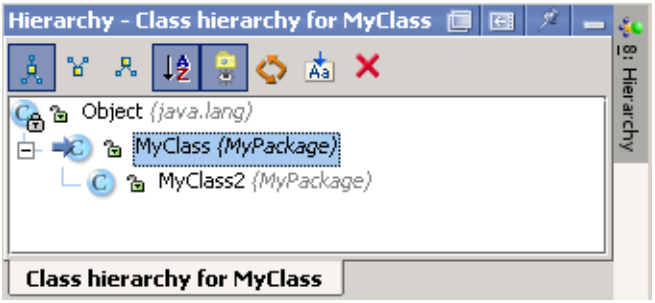


Figure 5.35. Class hierarchy (605)

6.3.5.1.2. Supertypes hierarchy

5.75. Click on the **Supertypes hierarchy** ( ) icon.

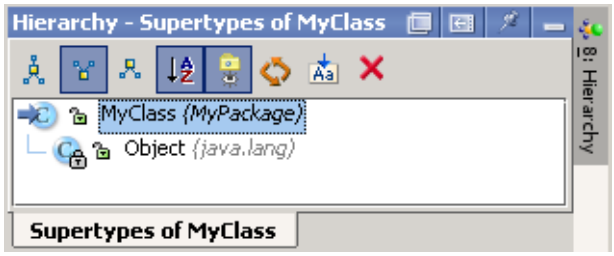


Figure 5.36. Supertypes hierarchy (228)

6.3.5.1.3. Subtypes hierarchy

5.76. Click on the **Subtypes hierarchy** ( ) icon.

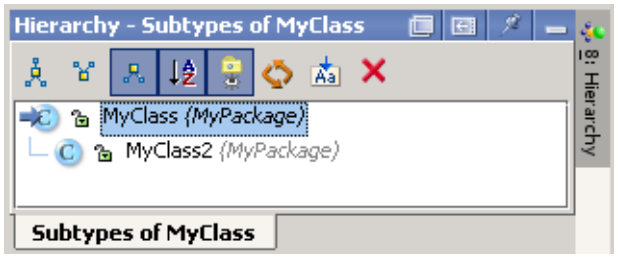


Figure 5.37. Subtypes hierarchy (225)

6.3.5.1.4. Sort alpabetically

Sorts the listed files alphabetically.

6.3.5.1.5. Show packages

Shows/hides the package names.

6.3.5.1.6. Refresh

Refreshes the display.

6.3.5.1.7. Autoscroll to source

If selected: Scrolling within the hierarchy will open the source file for the selected class.

6.3.5.2. Method hierarchy

Shows the method hierarchy.

6.3.5.2.1. Show hierarchy

5.77. In **MyClass** select method **aMethod()**.
5.78. Select **View | Method Hierarchy**. The method hierarchy is shown.

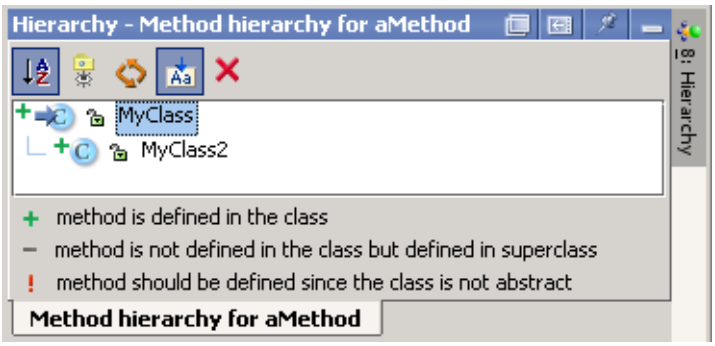


Figure 5.38. Method hierarchy (224)

6.3.5.2.2. Sort alpabetically

Sorts the listed files alphabetically.

6.3.5.2.3. Show packages

Shows/hides the package names.

6.3.5.2.4. Refresh

Refreshes the display.

6.3.5.2.5. Autoscroll to source

If selected: Scrolling within the hierarchy will open the source file for the selected class.

6.3.5.3. Call hierarchy

Shows the call hierarchy.

6.3.5.3.1. Show hierarchy

5.79. In **MyClass** select method **aMethod2()**.
5.80. Select **View | Call Hierarchy**. The call hierarchy is shown.

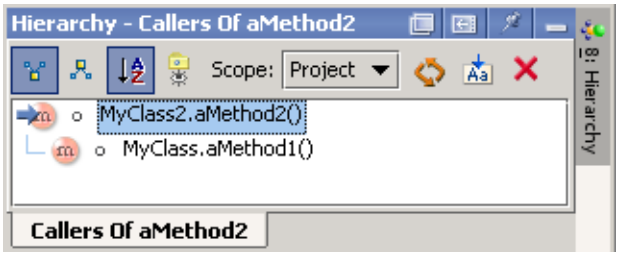


Figure 5.39. Call hierarchy (caller methods) (223)

6.3.5.3.2. Caller methods hierarchy

5.81. Click on the **Caller methods hierarchy** ( ) icon (same as above).

6.3.5.3.3. Callee methods hierarchy

5.82. Click on the **Callee methods hierarchy** ( ) icon (same as above).

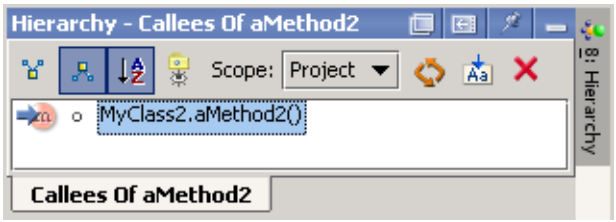


Figure 5.40. Call hierarchy (callee methods) (220)

6.3.5.3.4. Sort alpabetically

Sorts the listed files alphabetically.

6.3.5.3.5. Show packages

Shows/hides the package names.

6.3.5.3.6. Scope

Select:

- **Project** to search within the entire project
- **This class** to search only within the selected class

6.3.5.3.7. Refresh

Refreshes the display.

6.3.5.3.8. Autoscroll to source

If selected: Scrolling within the hierarchy will open the source file for the selected class.

Part C. Editing files

20021018TTT last edit.

The chapters in this part describe the extensive functionality provided by IDEA for editing files.

7. Editor X (page 107). Demonstrates how the ease-of-use and extensive functionality of the editor makes it the tool of choice for editing any type of code file.

8. Code Automation (page 163). Demonstrates how the code automation functions provided by IDEA allow you to more easily and quickly create, modify, and improve code.

9. Code Refactoring (page 201). Demonstrates how IDEA's extensive refactoring support makes code maintenance much easier.

~~**10. Code Inspection X (page 243)**. Demonstrates how IDEA can automaticallly inspect your code and recommend / implement solutions or improvements.~~

11. Version control (page 255). Demonstrates how IDEA's local versioning tool and compatible external tools (CVS, SourceSafe, StarTeam) provide complete and robust version control.

12. Java Doc (page 269). Demonstrates how IDEA not only provides its own JavaDoc functionality but also makes it easy to integrate Sun's JavaDoc tools for use from within IDEA.

7. Editor X

20021030TTT: last edit.

contacts: valentin (maxim?)

This chapter introduces editing features provided by IDEA and includes the following sections:

Note that chapters

also introduce editing functionality.

7.1. File operations

The IDEA editor supports the following file operations

7.1.1. Open

You can open a file in an editor

- **From a view**
- **From "Open file" dialog**
- **Autoscroll to source**
- **Reload from disk**
- **Recent files**

7.1.1.1. From a view

Simply double-click on a file (or a file member, field, etc.) to open the file from within any view (views were introduced in **6.3. Views (page 94)**)

7.1.1.2. Autoscroll to source

6.1. Close the source file for **MyClass** (if open).

6.2. Click the **Autoscroll to source** icon ().

6.3. Click on **MyPackage**.

6.4. Move the focus (with the **arrow down key**) to MyClass. MyClass.java is opened in the editor.

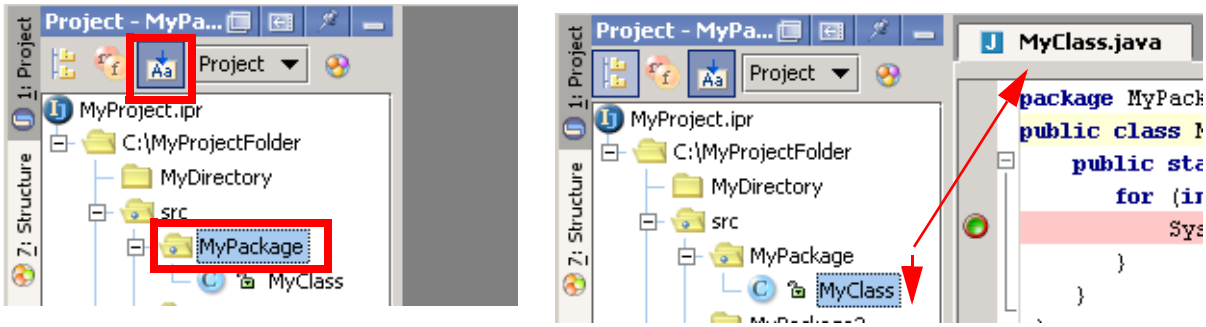


Figure 6.1. Autoscroll to source (647,648)

7.1.1.3. From "Open file" dialog

6.5. Select **File | Open file...**. The dialog "Open file" appears.

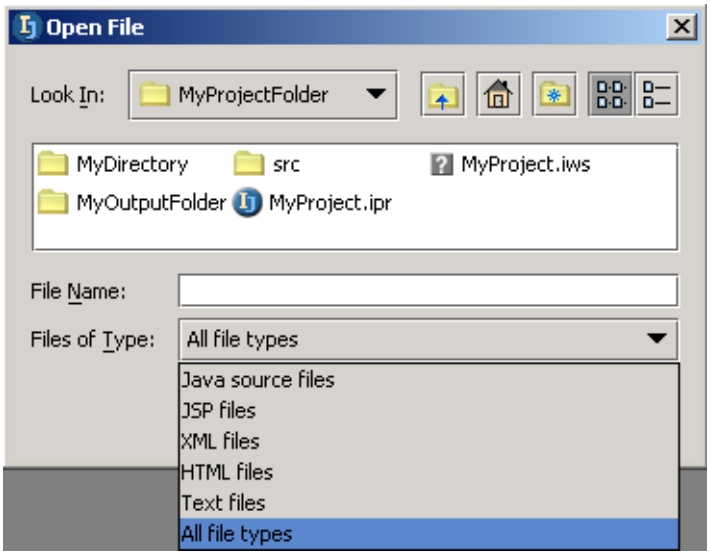


Figure 6.2. Dialog “Open file” (653)

6.6. Double-click on a file to open.

7.1.1.4. Reload from disk

6.7. Add any text to MyClass.java.

6.8. Select **File | Reload from disk**.

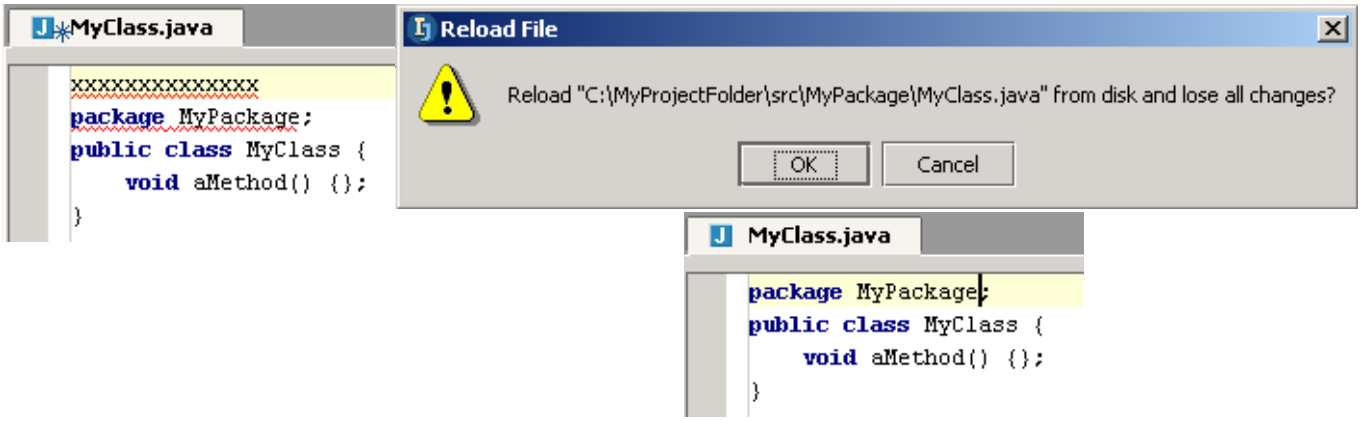


Figure 6.3. Reload file (209,208,207)

7.1.1.5. Recent files

6.9. Select **View | Recent files...**. A dialog with a list of recently opened files appears.

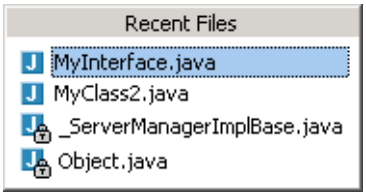


Figure 6.4. List of recent files (651)

6.10. Click on a file to open in an editor.

7.1.2. Synchronize

20021008TTT: how do i demo synchronize??

6.11. Select **File | Synchronize** to synchronize the file.

7.1.3. Save all

6.12. To save all open files: Select **File | Save All**.

Note: IDEA does not allow an individual file to be saved. There are several very compelling reasons for this which will become apparent during the course of this tutorial.

see http://www.intellij.net/forums/thread.jsp?forum=1&thread=8721&message=237663&q=53617665#237663

7.1.4. Close

You can

- **Close Active**
- **Close All**
- **Close All but current**

7.1.4.1. Close Active

6.13. To close the active editor do one of the following:

- Select **File | Close Active Editor**.
- Right-click on the editor tab and select **Close**.

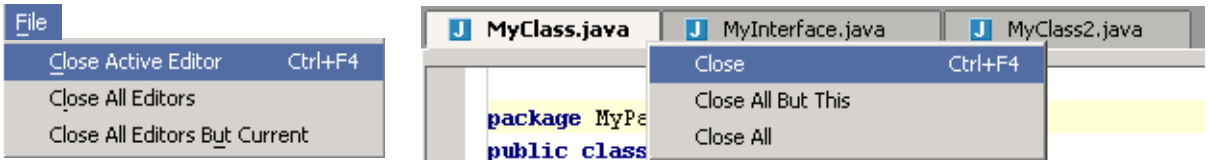


Figure 6.5. Close file menus (654,655,206)

7.1.4.2. Close All

6.14. To close all editors do one of the following (reference diagram above):

- Select **File | Close All Editors**.
- Right-click on the editor tab and select **Close All**.

7.1.4.3. Close All but current

6.15. To close all editors do one of the following (reference diagram above):

- Select **File | Close All Editors But Current**.
- Right-click on the editor tab and select **Close All But This**.

7.2. Text editing X

The IDEA provides extensive text editing functionality

7.2.1. Undo / Redo

2 of the most important editing functions (and one that most people use quite often) are:

Undo CTRL-Z

Undo the previous action.

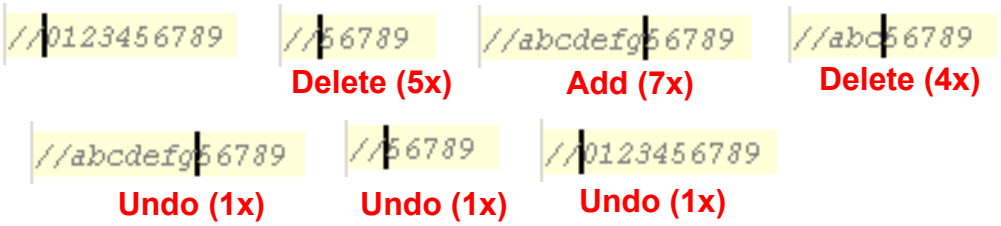


Figure 6.6. Undo (813-819)

Redo CTRL-SHIFT-Z

Redo the an undone action.

7.2.2. Select

The folllowing select functions are available:

Select line at caret

Select the entire line of text in the line that contains the caret.

Select word at caret CTRL-W

Select the entire word that contains the caret.

Figure 6.7. Select line / word at caret (820,821,822)

Unselect word at caret CTRL-SHIFT-W

Unselect the entire word that contains the caret.

7.2.3. Cut / Copy / Paste / Duplicate / Delete

The following functions are supported:

Cut CTRL-X

Standard Cut.

Copy CTRL-C

Standard Copy.

Paste CTRL-V

Standard Paste.

Duplicate line or block CTRL-D

Select a block of text. Clicking CTRL-D will create a copy of the block immediately following the block.

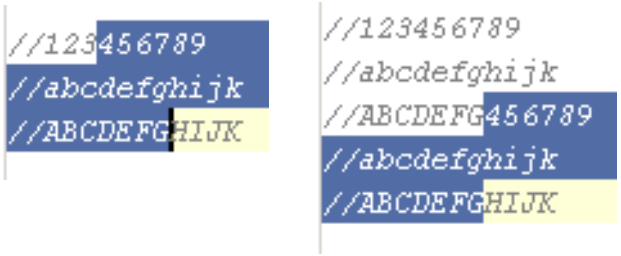


Figure 6.8. Duplicated block (732,733)

Delete line at caret CTRL-Y

Place the caret on a line. Clicking CTRL-Y will delete the line.

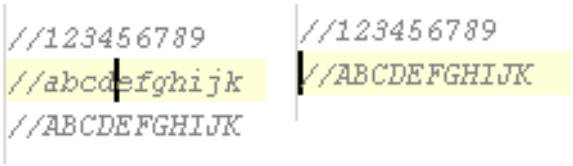


Figure 6.9. Delete line at caret (734,735)

Delete to word end CTRL-DEL

Place the caret in a word. Clicking CTRL-DEL will delete all characters in the word after the caret.

Delete to word start CTRL-BACKSPACE

Place the caret in a word. Clicking CTRL-BACKSPACE will delete all characters in the word before the caret.

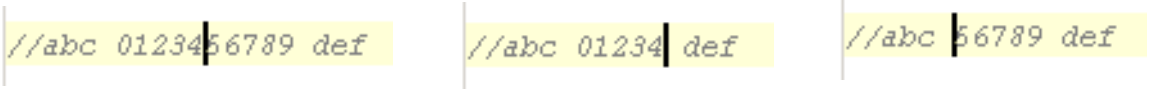


Figure 6.10. Delete to word end / start (736,737,738)

Toggle insert/override INSERT

Click INSERT. The caret changes from a vertical blinking line to a blinking rectangle (that encloses a character). Typing a character will overwrite the enclosed character.

Figure 6.11. Non-insert mode (overwrite) (739,740)

7.2.4. Move / Scroll

IDEA provides a wide variety of move and scroll functions:

7.2.4.1. Move basics (left/right/up/down)

BACKSPACE

Move cursor back 1 character.

LEFT

Move cursor left 1 character.

RIGHT

Move cursor right 1 character.

UP

Move cursor to the next upper line.

DOWN

Move cursor to the next lower line.

Left with selection SHIFT-LEFT

Place the caret in a line. Press and hold SHIFT-LEFT to select the line to the left of the caret.

Figure 6.12. Left with selection (741,742)

Right with selection SHIFT-RIGHT

Place the caret in a line. Press and hold SHIFT-RIGHT to select the line text to the right of the caret.

Up with selection SHIFT-UP

Place the caret in a line. Press and hold SHIFT-UP to select the text as shown below.

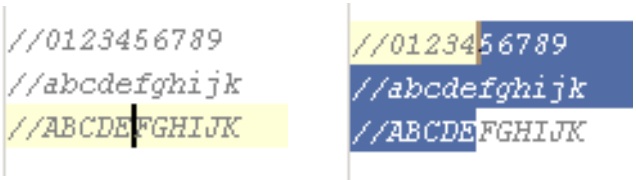


Figure 6.13. Up with selection (743,744)

Down with selection SHIFT-DOWN

Place the caret in a line. Press and hold SHIFT-DOWN to select the text as shown below.

7.2.4.2. Within code block

Move to code block start CTRL-[

Place the caret within a code block. Clicking CTRL-[will cause the caret to be placed at the start of the code block.

Move to code block end CTRL-]

Place the caret within a code block. Clicking CTRL-] will cause the caret to be placed at the end of the code block.

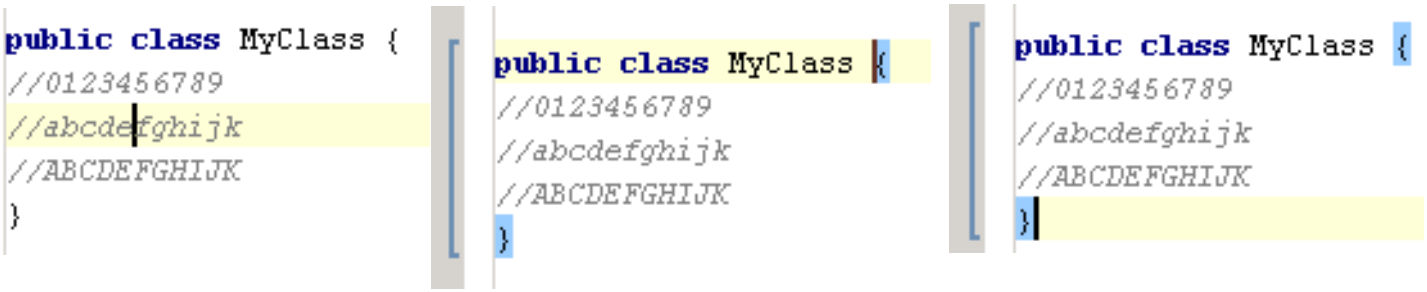


Figure 6.14. Move to code block start / end (745,746,747)

Move to code block start with selection CTRL-SHIFT-[

Place the caret within a code block. Clicking CTRL-SHIFT-[will select the text between the caret and the start of the code block (and place the caret at the beginning of the code block).

20021010TTT does this work??

Move to code block end with selection CTRL-SHIFT-]

Place the caret within a code block. Clicking CTRL-SHIFT-] will select the text between the caret and the end of the code block (and place the caret at the end of the code block).

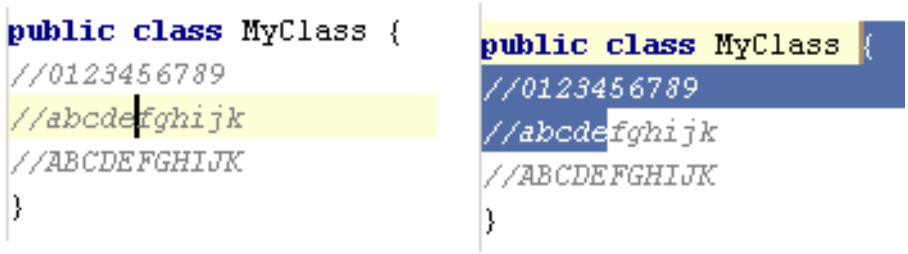


Figure 6.15. Move to code block start with select (748,749)

7.2.4.3. Within line

Move line end END

Place the caret in a line. Clicking END will move the caret to the end of the line.

Figure 6.16. Move to line end (750,751)

Move line start HOME

Place the caret in a line. Clicking HOME will move the caret to the start of the line.

Move line end with selection SHIFT-END

Place the caret in a line. Clicking SHIFT-HOME will move the caret to the start of the line and select the text between the caret initial and final position.

Figure 6.17. Move to line end with select (750,752)

Move line start with selection SHIFT-HOME

Place the caret in a line. Clicking SHIFT-HOME will move the caret to the start of the line and select the text between the caret initial and final position.

7.2.4.4. Within text

Move to next word CTRL-RIGHT

Place the caret anywhere in the class text. Clicking CTRL-RIGHT will move the caret to the start of the next word.

Move to previous word CTRL-LEFT

Place the caret anywhere in the class text. Clicking CTRL-LEFT will move the caret to the start of the word the caret was place in or (if the caret was not placed in a word) to the start of the word before the caret.

Figure 6.18. Move to next / previous word (756,757,758)

Move to next word with selection CTRL-SHIFT-RIGHT

Place the caret anywhere in the class text. Clicking CTRL-SHIFT-RIGHT will move the caret to the start of the next word and select the text between the caret initial and final position.

Move to previous word with selection CTRL-SHIFT-LEFT

Place the caret anywhere in the class text. Clicking CTRL-SHIFT-LEFT will move the caret [to the start of the word the caret was place in or (if the caret was not placed in a word) to the start of the word before the caret] and [select the text between the caret initial and final position].

Figure 6.19. Move to next / previous word with select (756,759,760)

Move text end CTRL-END

Place the caret anywhere in the class text. Clicking CTRL-END will move the caret to the end of the text.

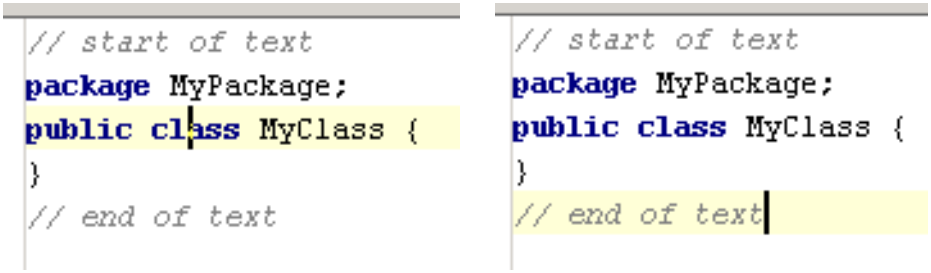


Figure 6.20. Move to text end (753,754)

Move text start CTRL-HOME

Place the caret anywhere in the class text. Clicking CTRL-HOME will move the caret to the start of the text.

Move text end with selection CTRL-SHIFT-END

Place the caret anywhere in the class text. Clicking CTRL-SHIFT-END will move the caret to the end of the text and select the text between the caret initial and final position.

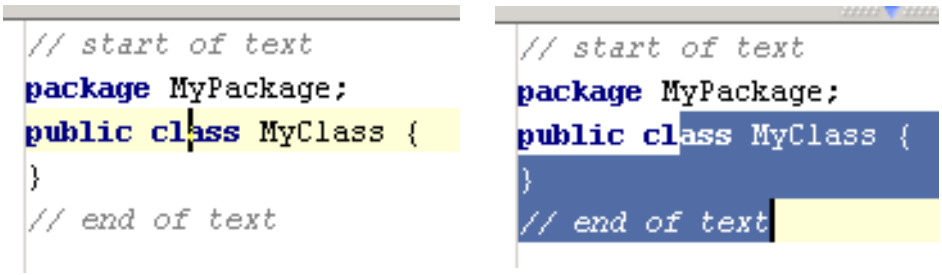


Figure 6.21. Move to text end with select (753,755)

Move text start with selection CTRL-SHIFT-HOME

Place the caret anywhere in the class text. Clicking CTRL-SHIFT-HOME will move the caret to the start of the text and select the text between the caret initial and final position.

7.2.4.5. Page

Page down PAGE DOWN

Place the caret anywhere in the class text. Clicking PAGE DOWN will scroll down to the next visible page.

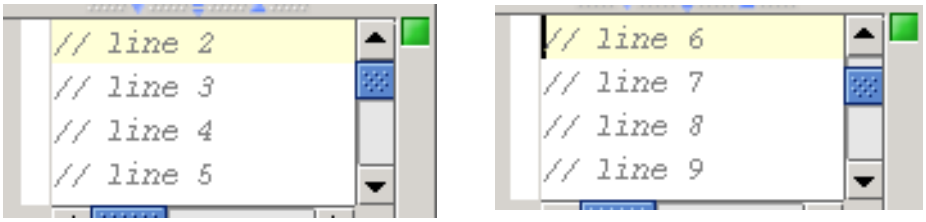


Figure 6.22. Page down (761,762)

Page up PAGE UP

Place the caret anywhere in the class text. Clicking PAGE UP will scroll up to the next visible page.

Page down with selection SHIFT-PAGE DOWN

Place the caret anywhere in the class text. Clicking PAGE DOWN will scroll down to the next visible page and select the text between the caret initial and final position (the caret final position will be in the same relative location on the new page).

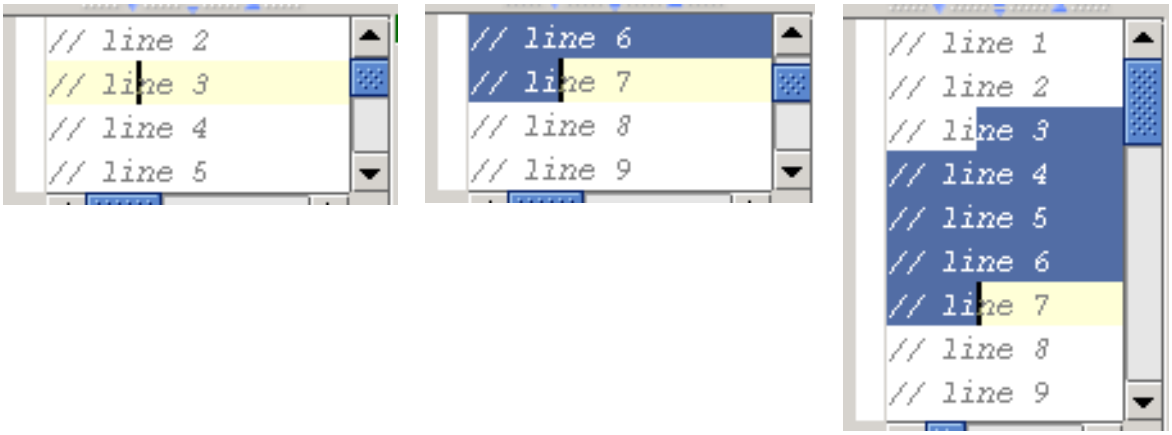


Figure 6.23. Page down with selection (763,764,765)

Page up with selection SHIFT-PAGE UP

Place the caret anywhere in the class text. Clicking PAGE UP will scroll up to the next visible page and select the text between the caret initial and final position (the caret final position will be in the same relative location on the new page).

Go page bottom CTRL-PAGE DOWN

Place the caret anywhere in the class text. Clicking CTRL-PAGE DOWN will move the cursor to the bottom of the page (in the same vertical location).

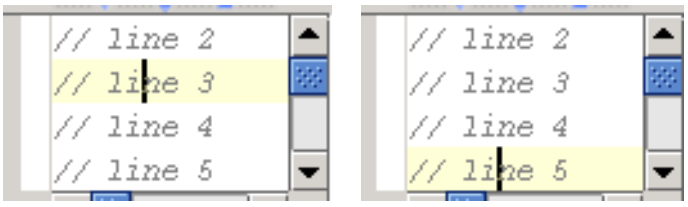


Figure 6.24. Go page bottom (766,767)

Go page top CTRL-PAGE UP

Place the caret anywhere in the class text. Clicking CTRL-PAGE UP will move the cursor to the top of the page (in the same vertical location).

Go page bottom with selection CTRL-SHIFT-PAGE DOWN

Place the caret anywhere in the class text. Clicking CTRL-SHIFT-PAGE DOWN will move the cursor to the bottom of the page (in the same vertical location) and select the text between the cursor initial and final location.

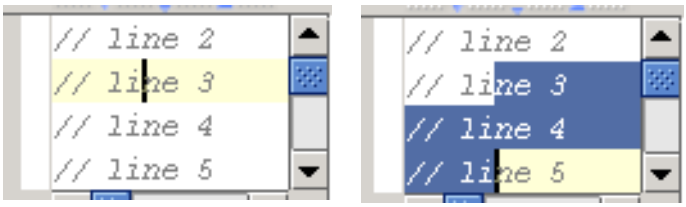


Figure 6.25. Go page bottom with selection (766,768)

Go page top with selection CTRL-SHIFT-PAGE UP

Place the caret anywhere in the class text. Clicking CTRL-SHIFT-PAGE UP will move the cursor to the top of the page (in the same vertical location) and select the text between the cursor initial and final location.

7.2.4.6. Scroll

Scroll down CTRL-DOWN, CTRL-SHIFT-DOWN

Place the caret anywhere in the class text. Clicking CTRL-DOWN will move the displayed page down 1 line and keep the cursor in the same relative page position.

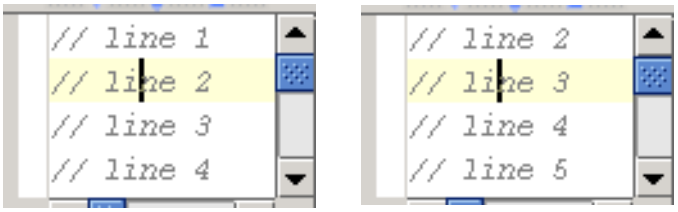


Figure 6.26. Scroll down (769,770)

Scroll up CTRL-UP, CTRL-SHIFT-UP

Place the caret anywhere in the class text. Clicking CTRL-UP will move the displayed page up 1 line and keep the cursor in the same relative page position.

Scroll to center CTRL-M

Place the caret anywhere in the class text. Clicking CTRL-M will move the displayed page sot that the caret is in the center.

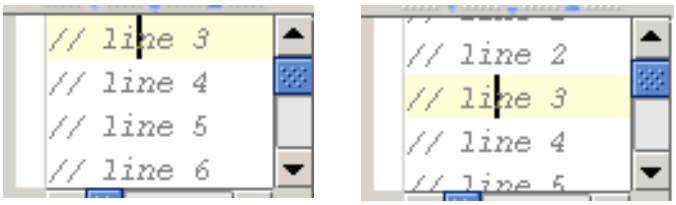


Figure 6.27. Scroll to center (772,773)

20021012TTT no hotkeys by default for move scroll XX ?? are these repeated functions??

Move down and scroll

Place the caret anywhere in the class text. Move down and scroll will move the displayed page down 1 line and keep the cursor in the same relative page position.

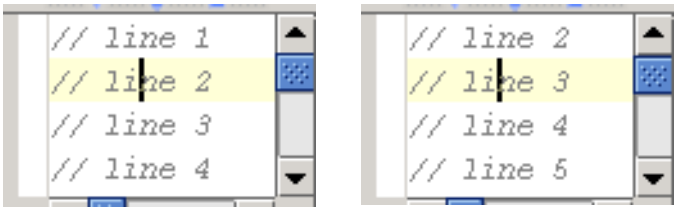


Figure 6.28. Move down and scroll (769,770)

Move up and scroll

Place the caret anywhere in the class text. Move up and scroll will move the displayed page up 1 line and keep the cursor in the same relative page position.

Move down and scroll with selection

Place the caret anywhere in the class text. Move down and scroll with selection will [move the displayed page down 1 line and keep the cursor in the same relative page position] and [select the text between the cursor initial and final location].

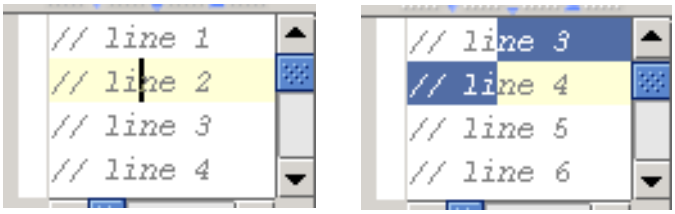


Figure 6.29. Move down and scroll with selection (769,771)

Move up and scroll with selection

Place the caret anywhere in the class text. Move up and scroll with selection will [move the displayed page up 1 line and keep the cursor in the same relative page position] and [select the text between the cursor initial and final location].

7.2.5. Indent / tabs / lines

Tab TAB
Indent selection TAB

Place the caret anywhere in the class text. Clicking TAB will insert several spaces before the caret.

Figure 6.30. Indent selection (tab) (774,775)

Unindent selection SHIFT-TAB

Place the caret within the indent of indented text (the indent must be at the beginning of the line). Clicking SHIFT-TAB will removed 4 (default) spaces (equivalent to a TAB). The caret will not move.

Figure 6.31. Unident selection (tab) (776,777)

Start new line SHIFT-ENTER

Place the caret anywhere in the class text. Clicking SHIFT-ENTER will insert a new line after the line the caret is located in and move the caret to the start of the new line.

Figure 6.32. Start new line (778,779)

Split line CTRL-ENTER

Place the caret anywhere in a line. Clicking CTRL-ENTER will [insert a new line after the line the caret is located in] and [move the caret and the text located after the caret to the new line].

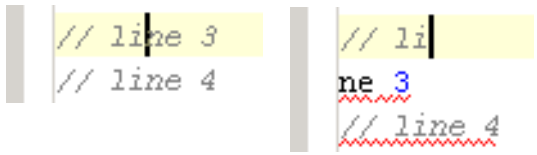


Figure 6.33. Split line (778,780)

Join lines CTRL-SHIFT-J
Line with caret and next line

Place the caret anywhere in the class text. Clicking CTRL-SHIFT-J will join the line that the caret is in and the next line.

Figure 6.34. Join line with caret and next line (781,782)

Selected lines

Select text in multiple lines. Clicking CTRL-SHIFT-J will join the lines in which text is selected.

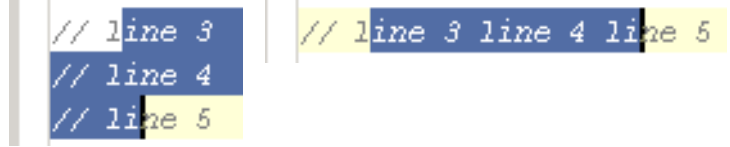


Figure 6.35. Join selected lines (783,784)

7.2.6. Modify text

Toggle case CTRL-SHIFT-U

Select text. Clicking CTRL-SHIFT-U will:

- [if the text contains upper-case characters] : Make the selected text lower case.
- [if the text contains NO upper-case characters] : Make the selected upper case.

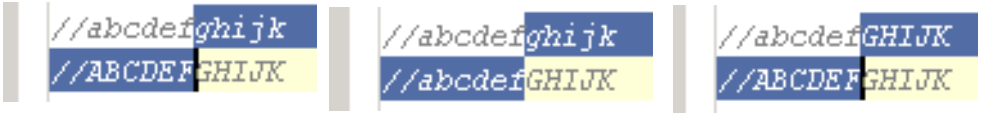


Figure 6.36. Toggle text case (785,786,787)

~~?? Choose lookup item~~
~~?? Choose lookup item replace~~
~~?? Next template variable~~
~~?? Previous template variable~~

7.3. Find / Navigation

IDEA provides the following find and navigation functions:

7.3.1. Bookmarks

IDEA support the following functions for bookmarks:

7.3.1.1. Create

6.16. Place the cursor in a file.
6.17. Select **Edit | Toggle Bookmark**. A bookmark appears.

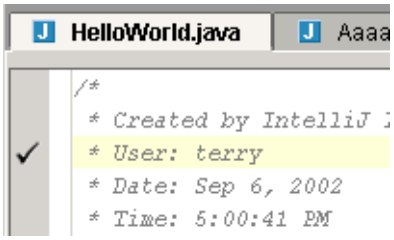


Figure 6.37. Bookmark in file (672)

6.18. Create bookmarks in several other files.

7.3.1.2. Show

6.19. Select **Edit | Show Bookmarks**. The dialog “Editor bookmarks” appears.

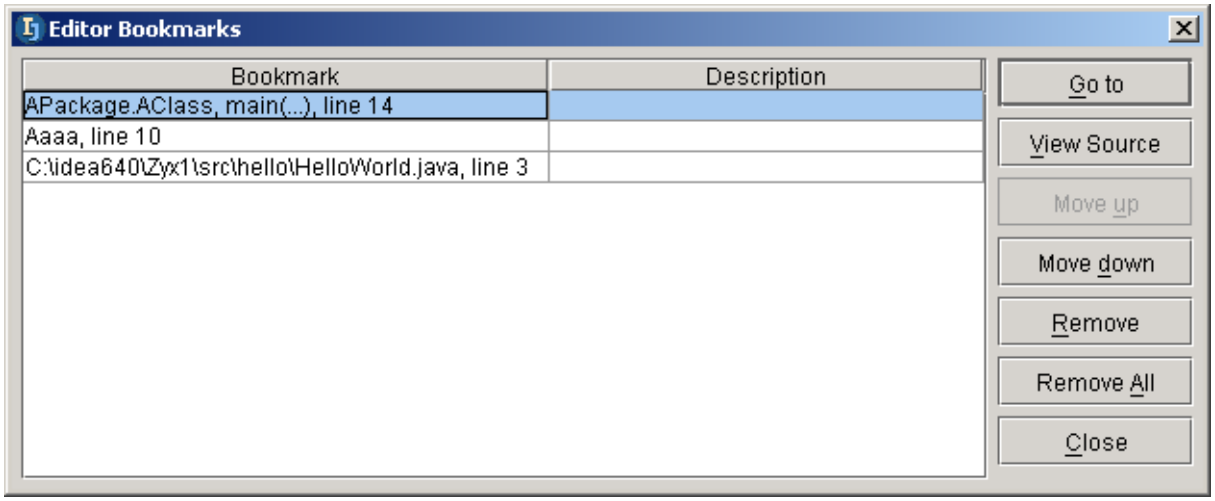


Figure 6.38. Bookmarks editor (673)

7.3.1.3. View source

6.20. Select a bookmark.

6.21. Click **View Source**. The editor of the bookmark source is displayed (and the bookmark editor is not closed).

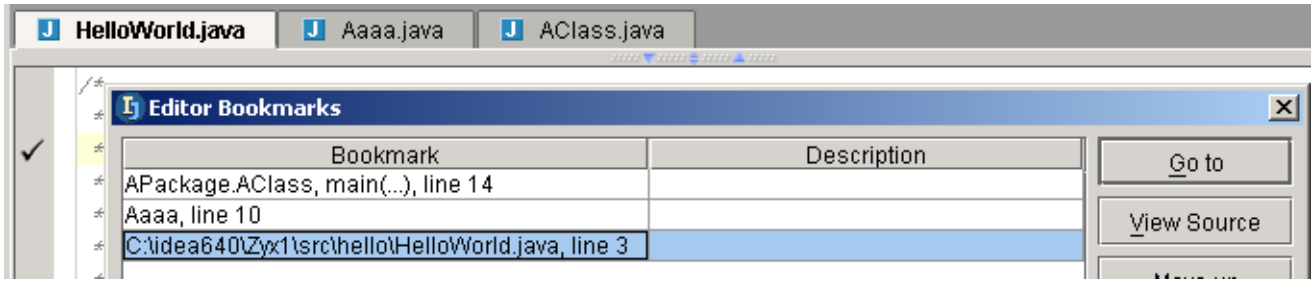


Figure 6.39. View source (674)

7.3.1.4. Go to

Goto is the same as View Source, except that the bookmark editor is closed.

7.3.1.5. Describe

6.22. Click in the column **Description** for a bookmark.
6.23. Type in the description text.

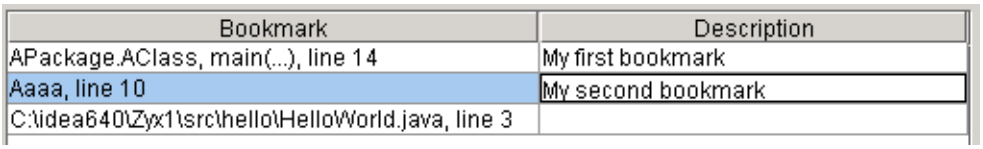


Figure 6.40. Bookmark description (675)

7.3.1.6. Move

6.24. Select a bookmark.
6.25. Click **Move up / Move down** to move the bookmark.

7.3.1.7. Remove

6.26. Select a bookmark.
6.27. Click **Remove** to delete the bookmark.

Click **Remove all** to delete all bookmarks.

7.3.2. Find / Replace

IDEA supports the following Find / Replace variations:

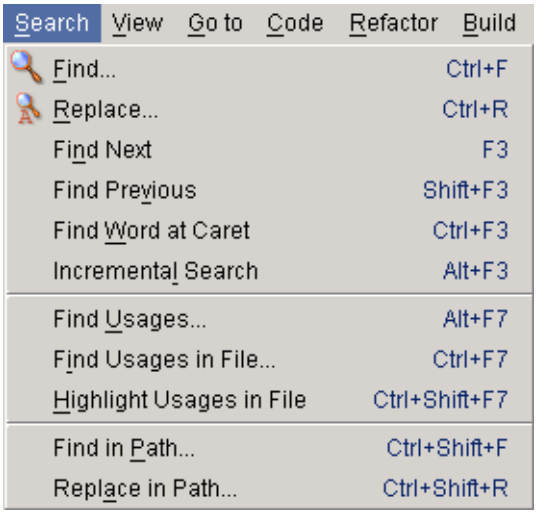


Figure 6.41. Find/replace menu (676)

7.3.2.1. Find (in file)

6.28. Open a file.
6.29. Select a word.
6.30. Select **Search | Find**. The dialog “Find text” appears.

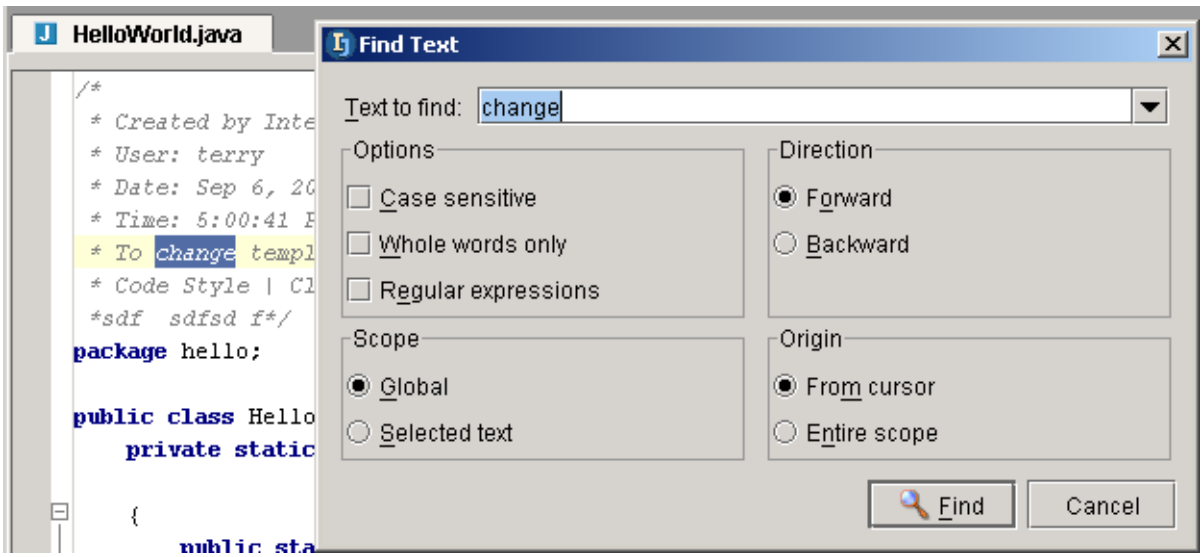


Figure 6.42. Dialog “Find text” (677)

Note that previously searched text is available in the drop-down list “Text to find”.

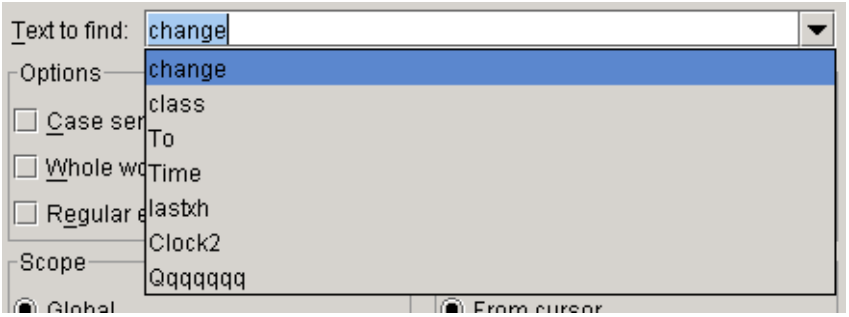


Figure 6.43. Drop-down list “Text to find” (678)

6.31. Click **Find** to find the text.

7.3.2.2. Highlight usages in file

6.32. Place the cursor within a code element (do not select).

6.33. Select **Search | Highlight usages in file**. The usage occurences of the word is highlighted.

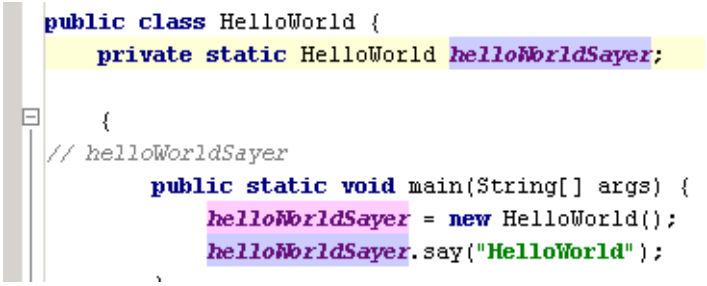


Figure 6.44. Highlight usages (687)

Note in the above example that “helloWorldSayer” in the comment was not highlighted.

7.3.2.3. Find usages in file

This is the same as highlighting the usages, except that the usages are found (ie, selected, and you can use F3 to find the next).

7.3.2.4. Find Next

6.34. Select **Search | Find next** to find the next occurence.

7.3.2.5. Find Previous

6.35. Select **Search | Find previous** to find the previous occurence.

7.3.2.6. Find in path

6.36. Select a word.

6.37. Select **Search | Find in path...**. The dialog “Find in path” appears.

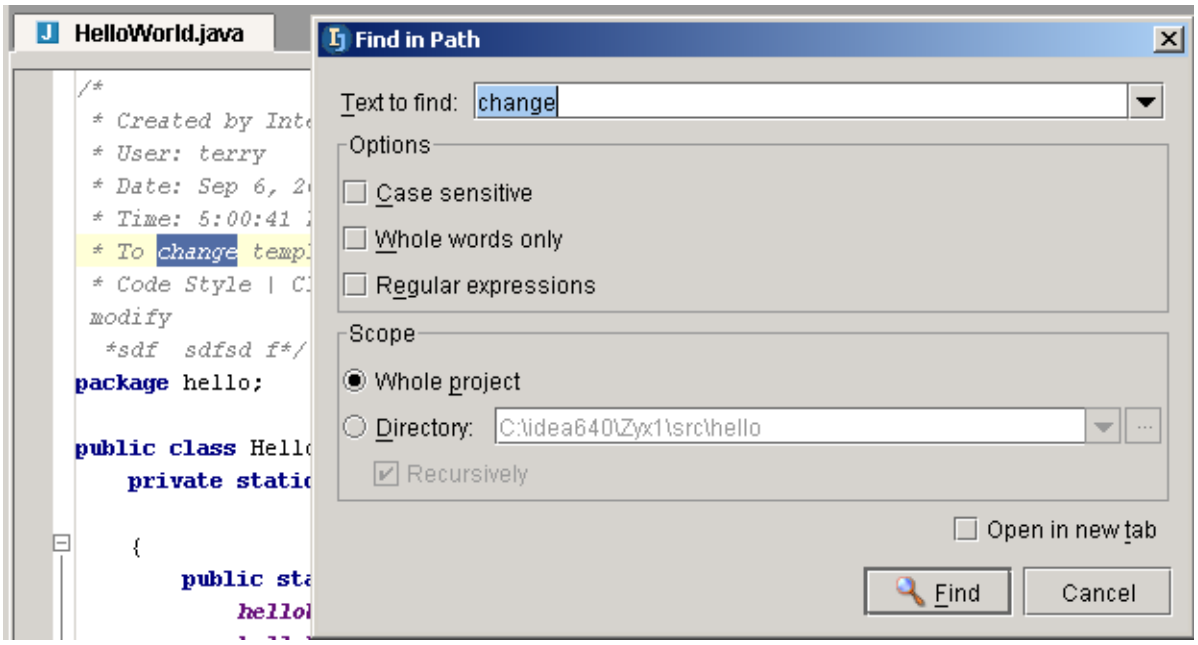


Figure 6.45. Dialog “Find in path” (681)

6.38. Click **Find** to find the text. The tool “Find” appears with a list of packages and dirs in which the text was found.

6.39. Expand a package or directory and double-click on an occurence. The source file is opened.

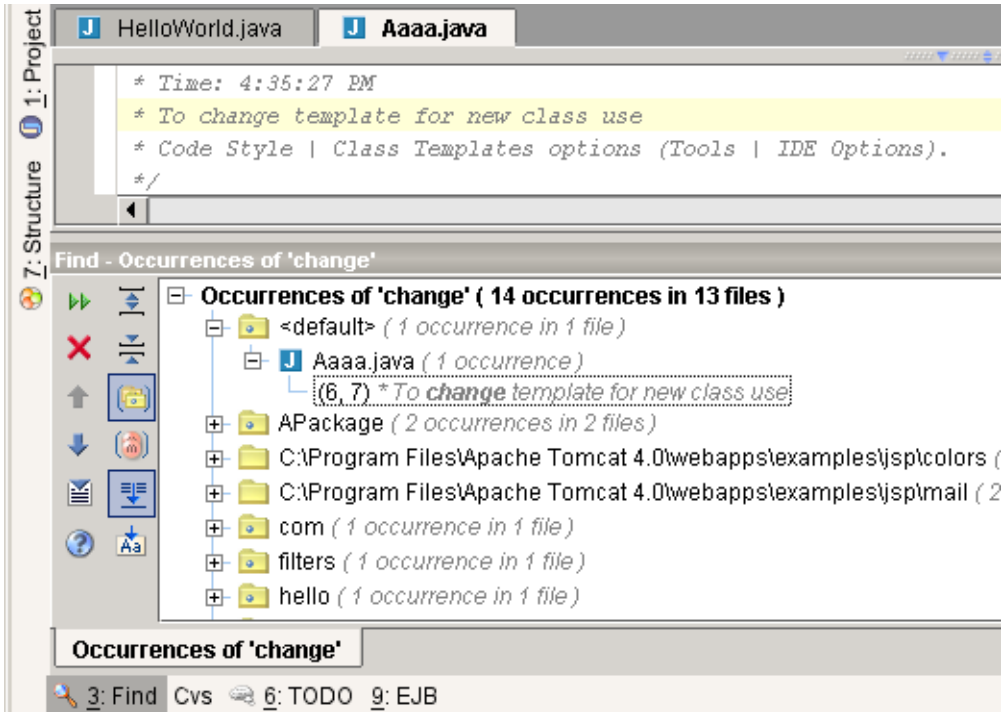


Figure 6.46. Tool “Find” (682)

7.3.2.7. Find usages (in path)

6.40. Place the cursor within a code element (do not select).
6.41. Select **Search | Find usages**. The “Find usages” dialog appears.

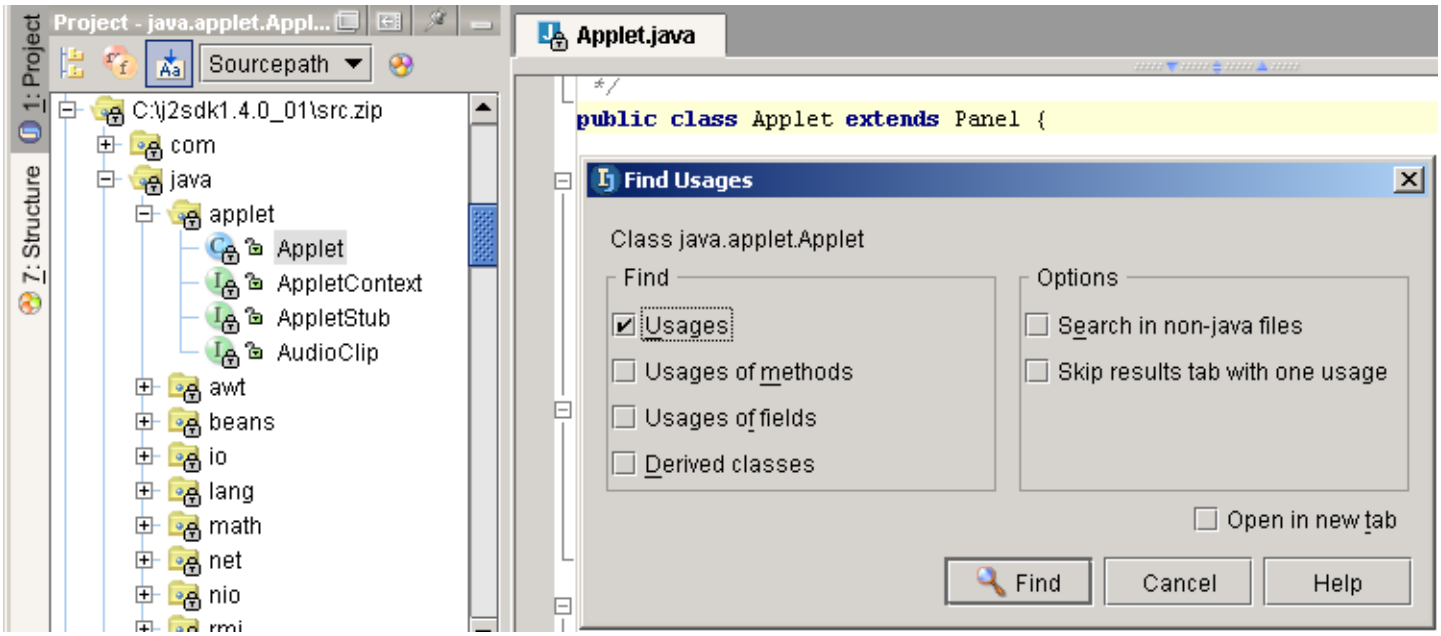


Figure 6.47. Dialog “Find usages” (688)

6.42. Click **Find**. The results are displayed.

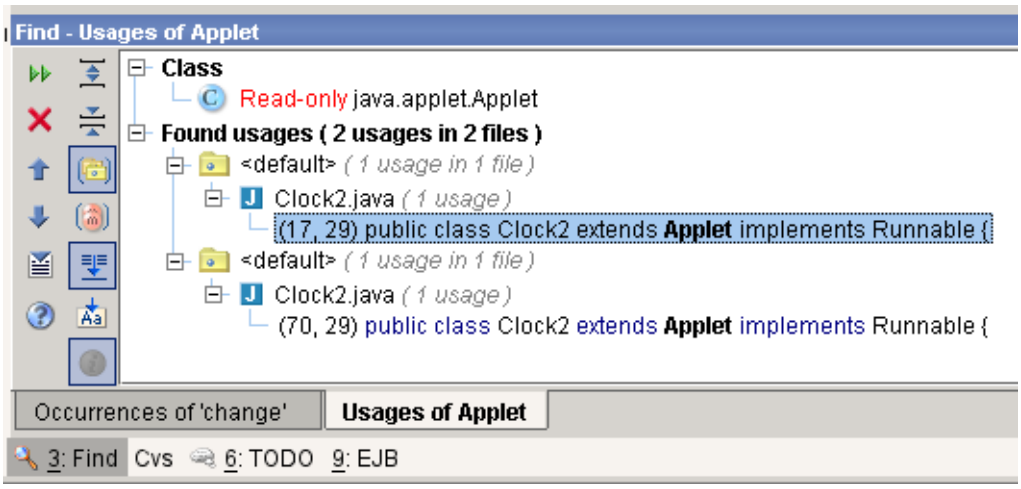


Figure 6.48. Find tool results (689)

7.3.2.8. Replace (in file)

6.43. Open a file.
6.44. Select a word.
6.45. Select **Search | Replace**. The dialog “Replace text” appears.
6.46. For “Replace with:”: Enter the new text.

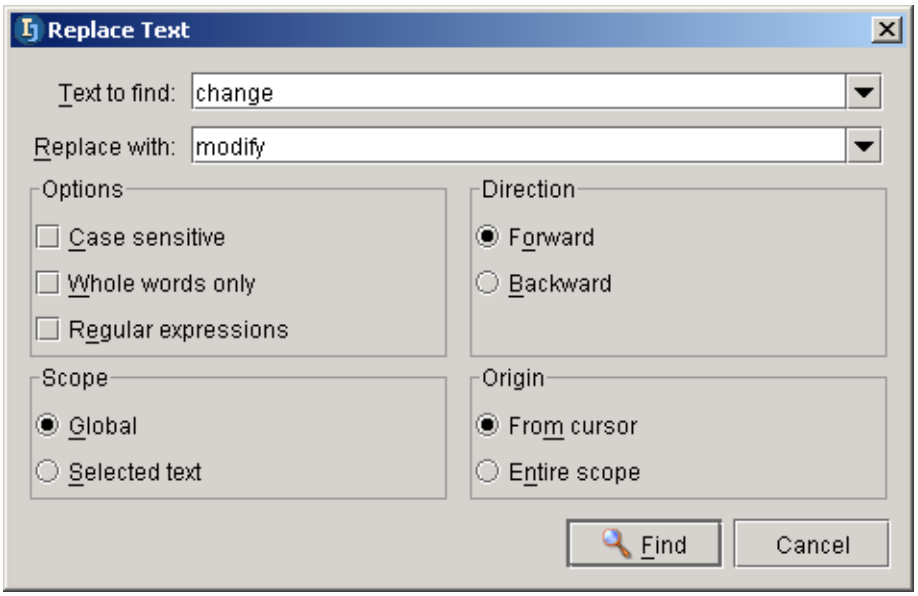


Figure 6.49. Dialog “Replace text” (679)

6.47. Select **Find**. The dialog “Replace” appears.

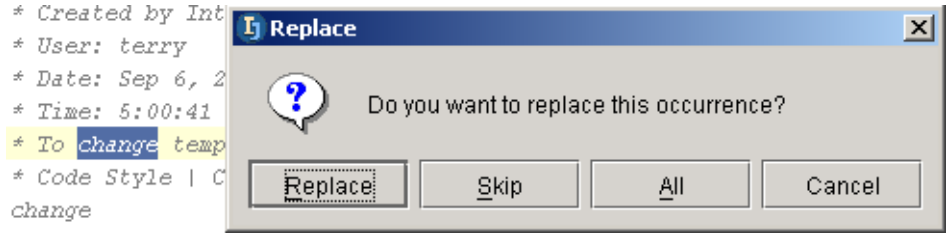


Figure 6.50. Dialog “Replace text” (680)

6.48. Select

- **Replace** to replace the selection and find the next occcurence.
- **Skip** to not replace the selection and to find the next occurrence.
- **All** to replace all occurences.
- **Cancel** to not replace any remaining occurences.

7.3.2.9. Replace in path

6.49. Open a file.

6.50. Select a word.

6.51. Select **Search | Replace in path**. The dialog “Replace in path” appears.

6.52. For “Replace with:”: Enter the new text.

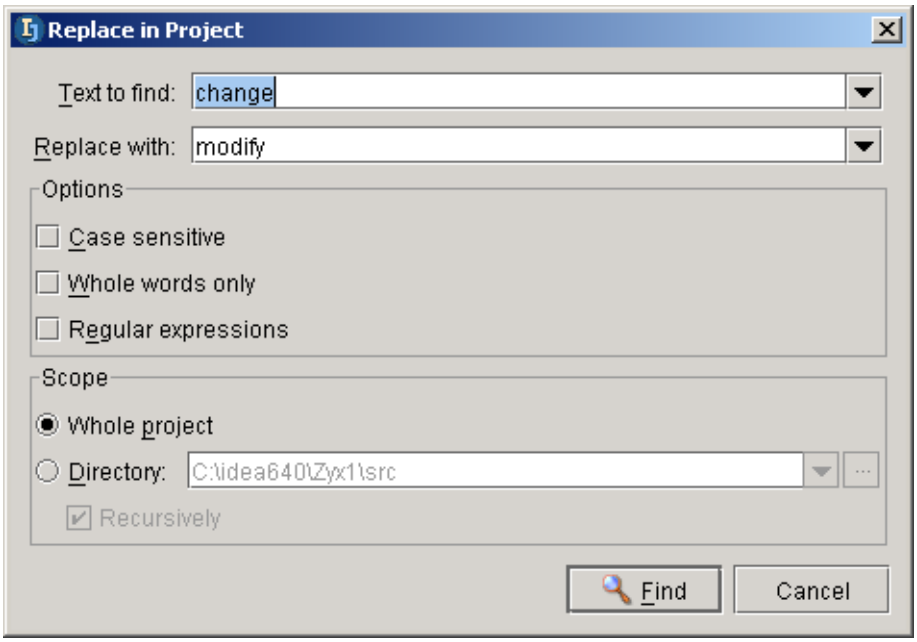


Figure 6.51. Dialog “Replace in project” (683)

6.53. Select **Find**. The dialog “Replace” appears.

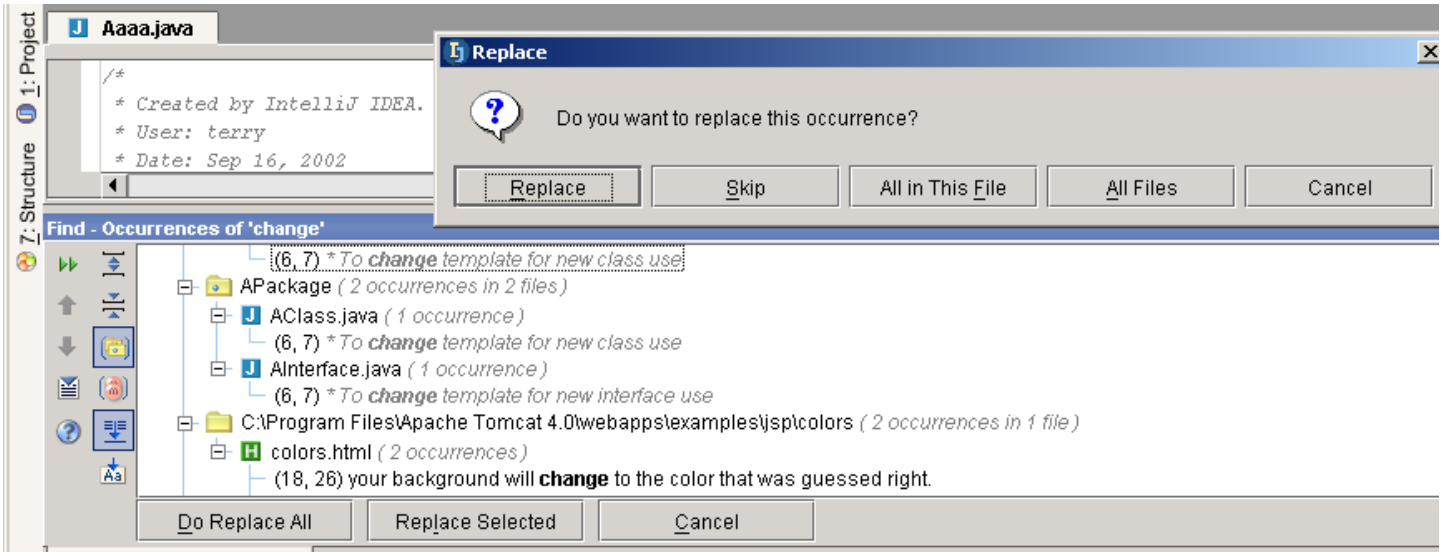


Figure 6.52. Dialog “Replace” (684)

6.54. Select

- **Replace** to replace the selection and find the next occcurence.
- **Skip** to not replace the selection and to find the next occurrence.
- **All in this file** to replace all occurences in the selected file.
- **All file** to replace all occurences in all files.
- **Cancel** to not replace any remaining occurences.

7.3.2.10. Find Word at caret

6.55. Place the cursor within a word (do not select the word).

6.56. Select **Search | Find word at caret**. The next occurence of the word is highlighted.

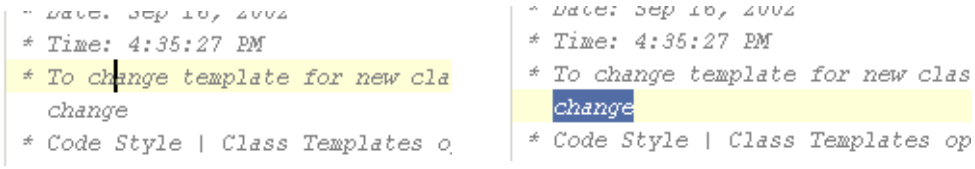


Figure 6.53. Find word at caret (685,686)

7.3.2.11. Incremental search

Performs an incremental search

7.3.3. Go to

IDEA provides the following “go to” functions:

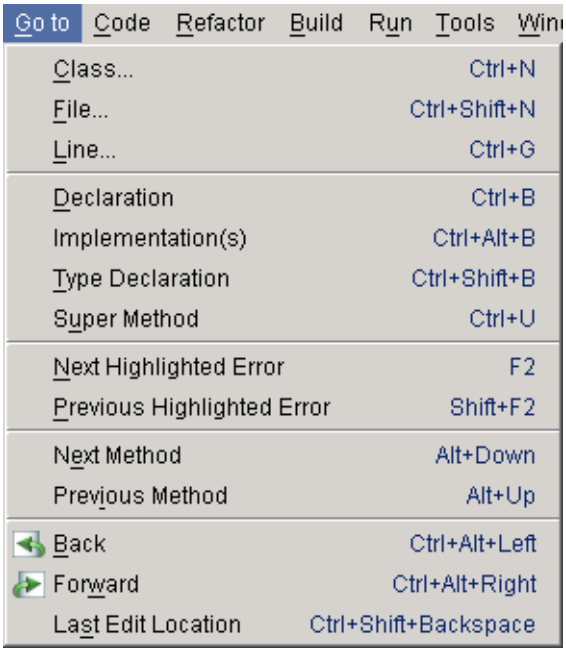


Figure 6.54. Goto menu (690)

7.3.3.1. Class

6.57. Select **Go to | Class**. The dialog “Enter class name” appears.
6.58. Enter the class name. Note that IDEA will suggest names based on the letters you type in.

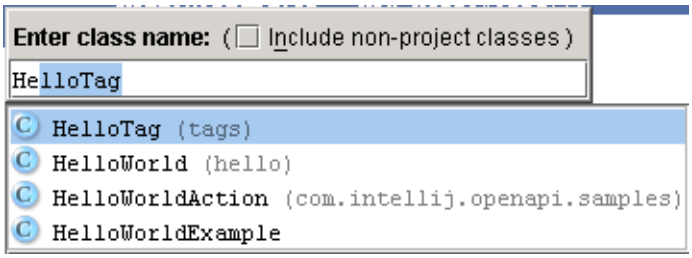


Figure 6.55. Dialog “Enter class name” (691)

6.59. Click **Enter**. The source for the class is opened in an editor.

7.3.3.2. File

6.60. Select **Go to | File**. The dialog “Enter file name” appears.

6.61. Enter the file name. Note that IDEA will suggest names based on the letters you type in.

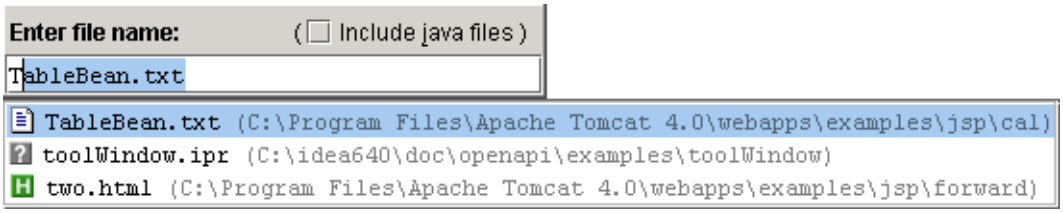


Figure 6.56. Dialog “Enter file name” (692)

6.62. Click **Enter**. The file is opened in an editor.

7.3.3.3. Line

Select **Go to / Line** to go to the specified line in the selected editor.

7.3.3.4. Declaration

6.63. Place the cursor in a code element.

6.64. Select **Go to | Declaration**. The source file for the declaration is opened.

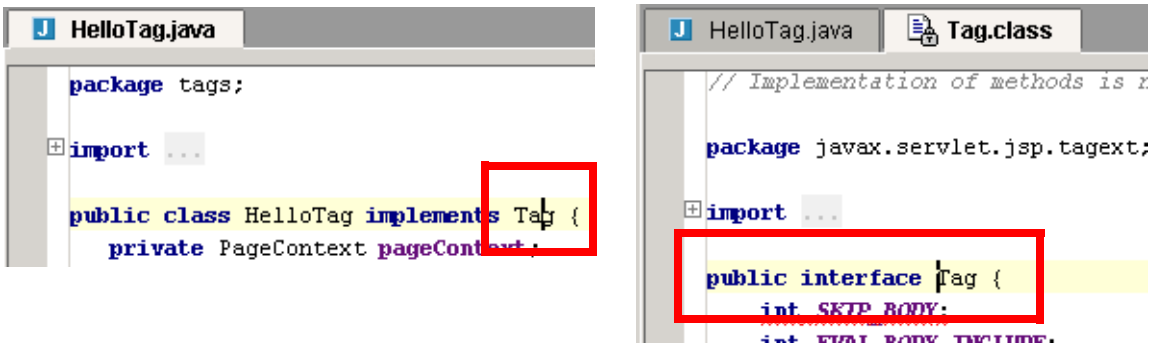


Figure 6.57. Go to declaration (693,694)

7.3.3.5. Implementation

6.65. Open an Interface file.

6.66. Place the cursor on the interface name.

6.67. Select **Go to | Implementation**. A list of the implementing classes appears in a popup (if more than 1 exists).

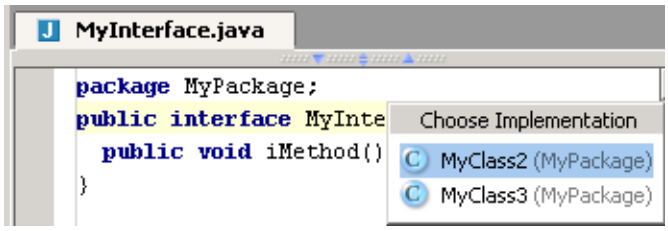


Figure 6.58. Go to implementation (194)

6.68. Select an implementor to open.

7.3.3.6. Type declaration

6.69. Place the cursor in a code element.

6.70. Select **Go to | Type declaration**. The source file for the declaration of the type is opened.

Figure 6.59. Go to type declaration (695,696)

7.3.3.7. Super method

6.71. Place the cursor in a code element.
6.72. Select **Go to | Super method**. The source file for the method of the super class is opened.

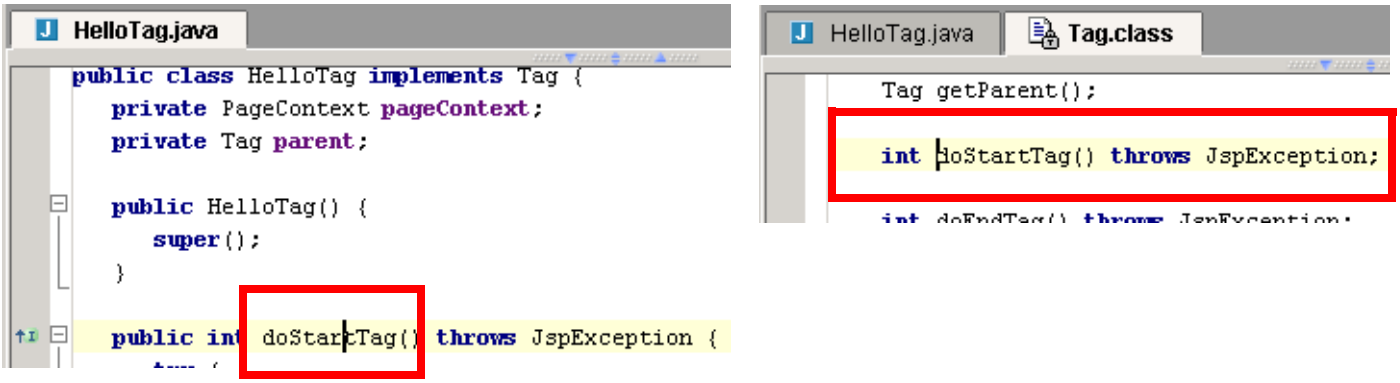


Figure 6.60. Go to super method (698,697)

7.3.3.8. Next / Previous highlighted error

Select **Go to | Next highlighted error** to place the cursor at the next highlighted error (typically red) in a source file.

Select **Go to | Previous highlighted error** for the previous error.

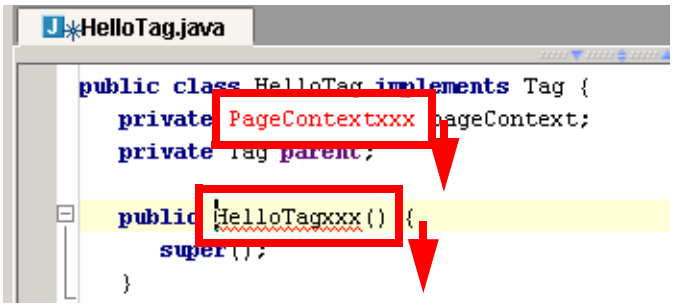


Figure 6.61. Next highlighted error (699)

7.3.3.9. Next / Previous method

Select **Go to | Next method** to place the cursor at the next method

Select **Go to | Previous method** for the previous method.

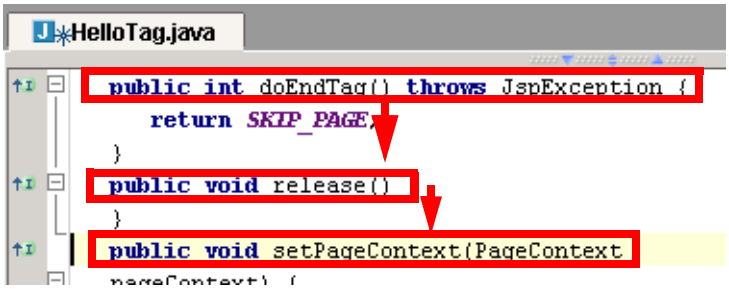


Figure 6.62. Next method (700)

7.3.3.10. Back / Forward

The **Back** and **Forward** buttons () are used to goto to different editors. The folllowing simple example shows how it works.

6.73. Create 3 classes: **Class1**, **Class2**, **Class3**.
6.74. Open **Class1**.
6.75. Open **Class2**.
6.76. Open **Class3**.
6.77. Select **Go to | Back**. The Class2 editor is selected.
6.78. Close **Class1**.
6.79. Close **Class3**.
6.80. Select **Go to | Forward**. Class3 is opened in an editor.
6.81. Select **Go to | Back**. The Class2 editor is selected.
6.82. Select **Go to | Back**. Class1 is opened in an editor.

7.3.3.11. Last Edit location

Select **Go to / Last edit location** to place the cursor at the location of the last edit made in IDEA.

7.4. Colors and fonts X

IDEA simplifies editing tasks with colors and fonts that make it easier to recognize text functionality:

7.4.1. General X

Tab **General** shows general colors and fonts.

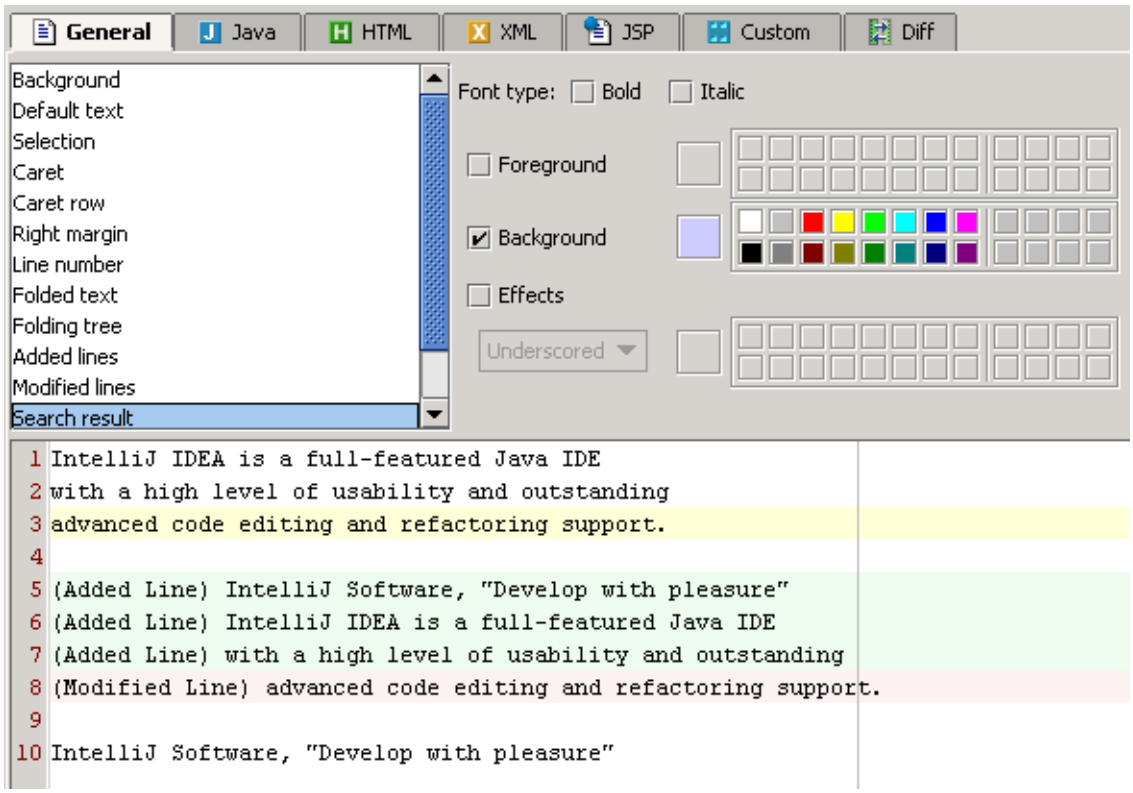


Figure 6.63. General colors/fonts (438)

7.4.2. Java X

Tab **Java** shows colors and fonts for Java files.

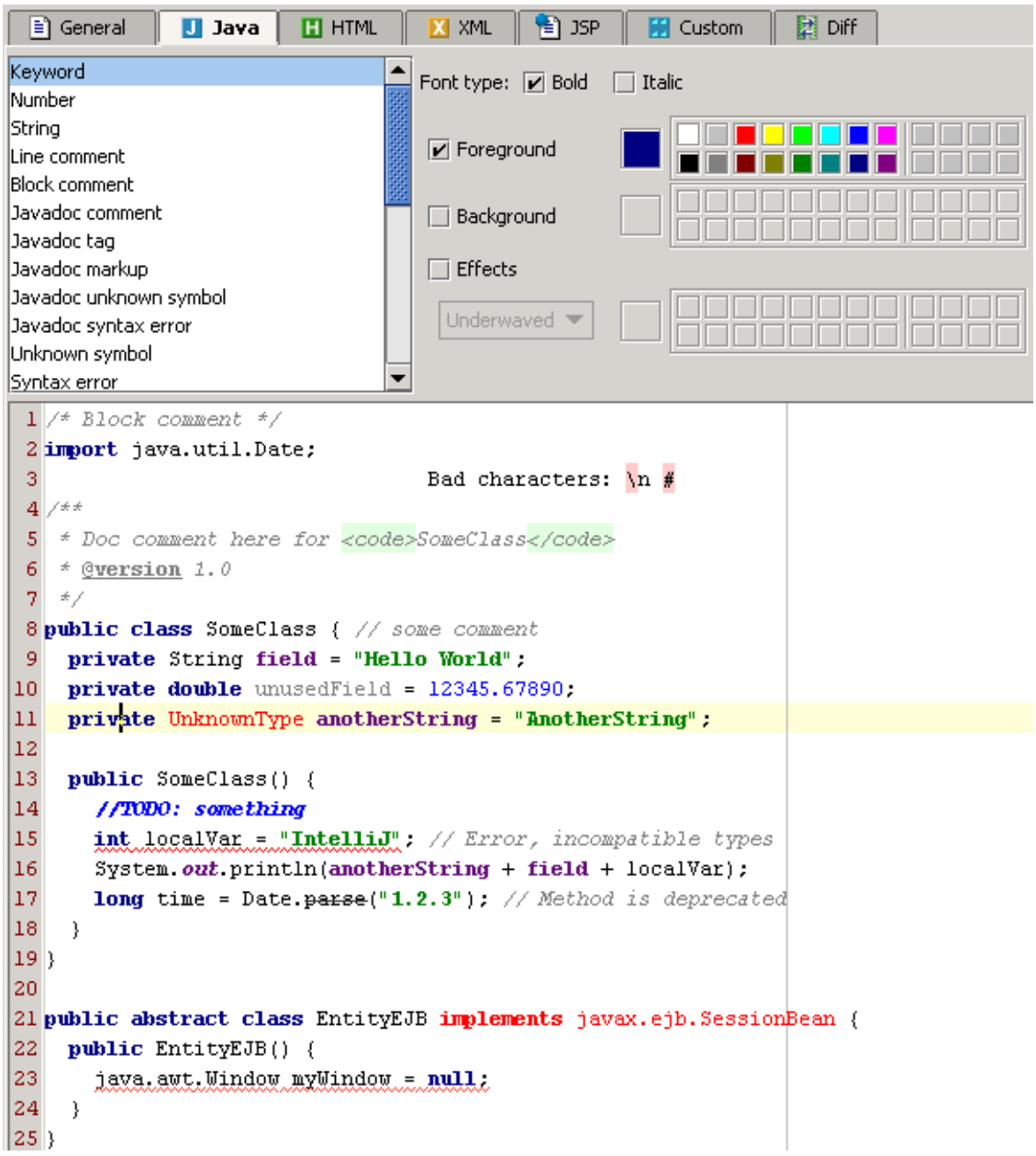


Figure 6.64. Colors/fonts for Java files (437)

7.4.3. HTML X

Tab **HTML** shows colors and fonts for HTML files.

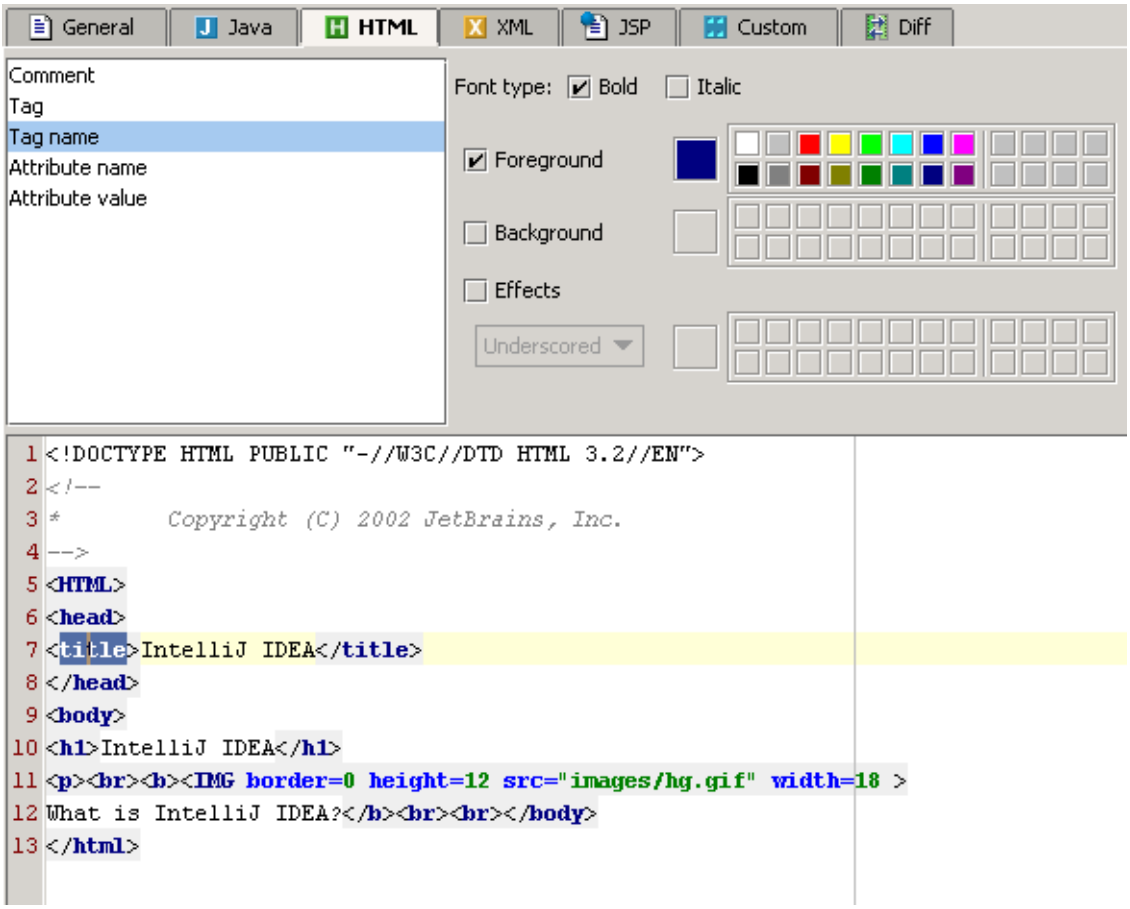


Figure 6.65. Colors/fonts for HTML files (436)

7.4.4. XML X

Tab **XML** shows colors and fonts for XML files.

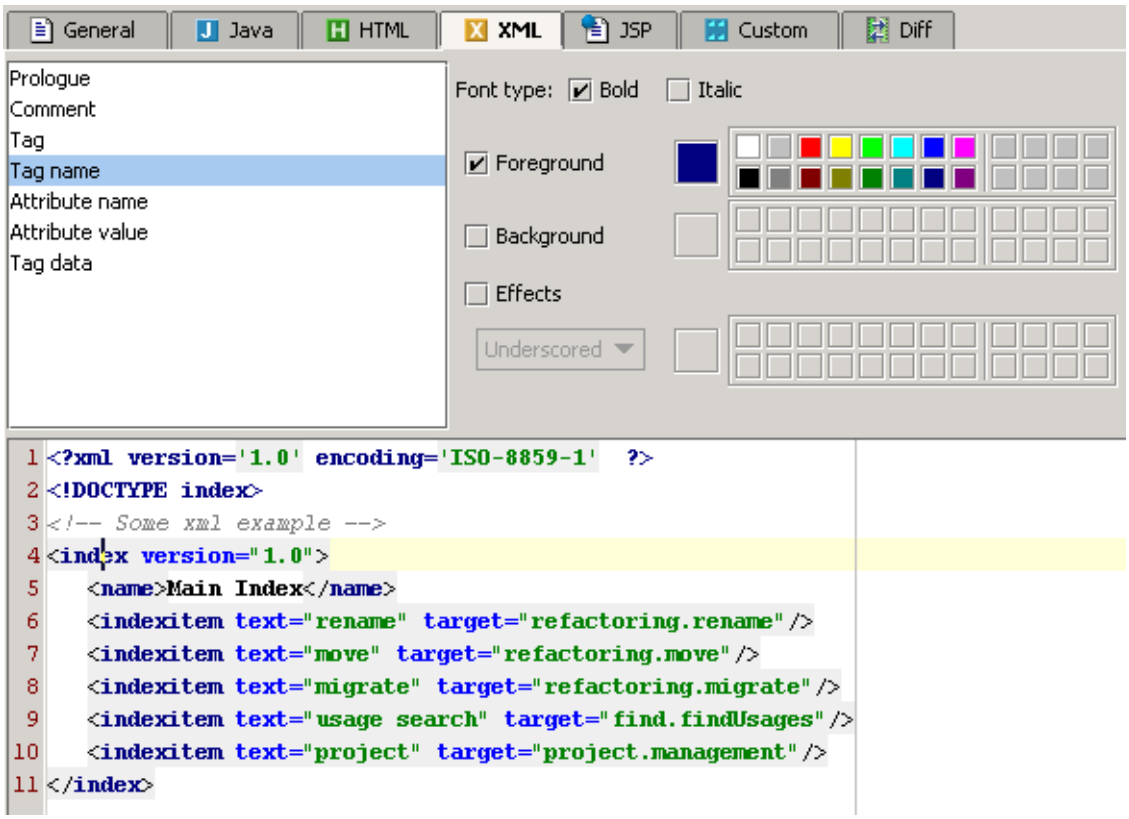


Figure 6.66. Colors/fonts for XML files (435)

7.4.5. JSP X

Tab **JSP** shows colors and fonts for JSP files.

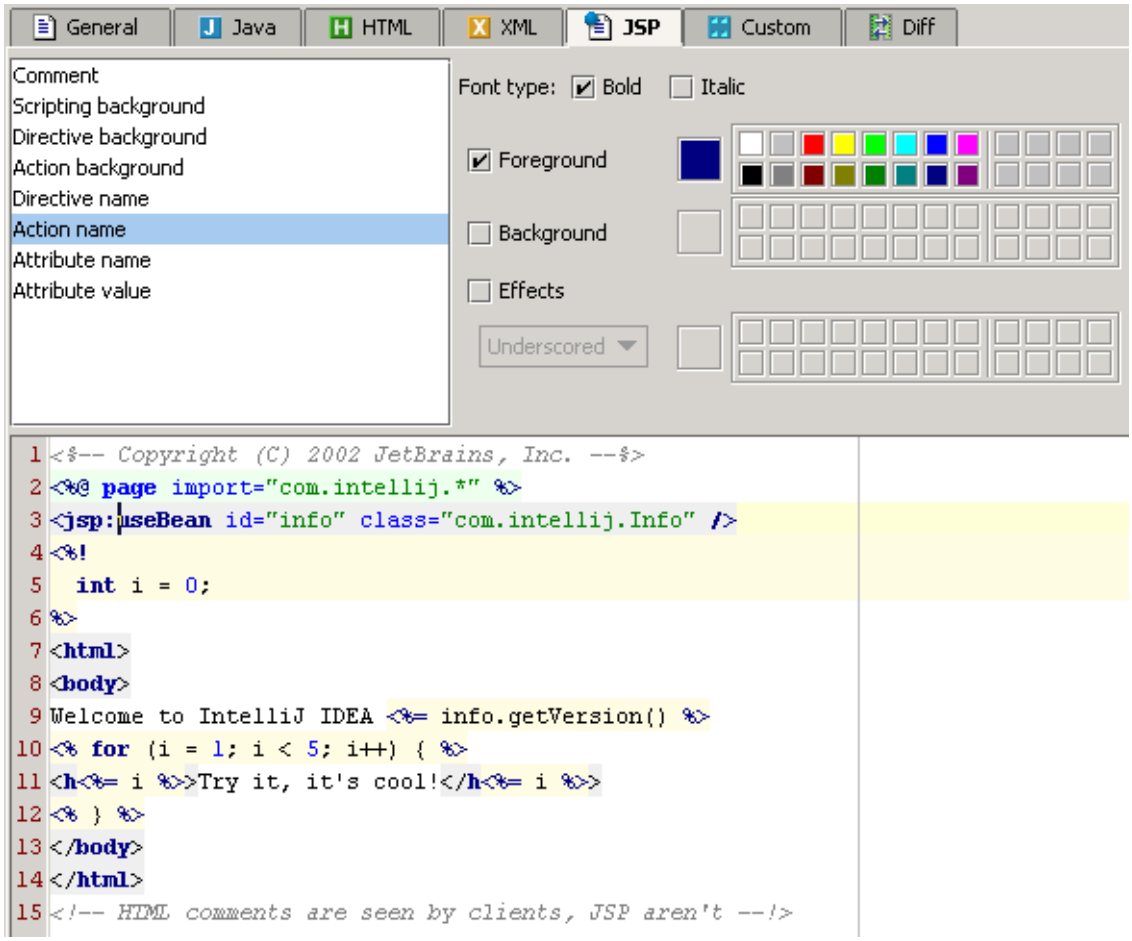


Figure 6.67. Colors/fonts for JSP files (434)

7.4.6. Custom X

Tab **Custom** shows custom colors and fonts.

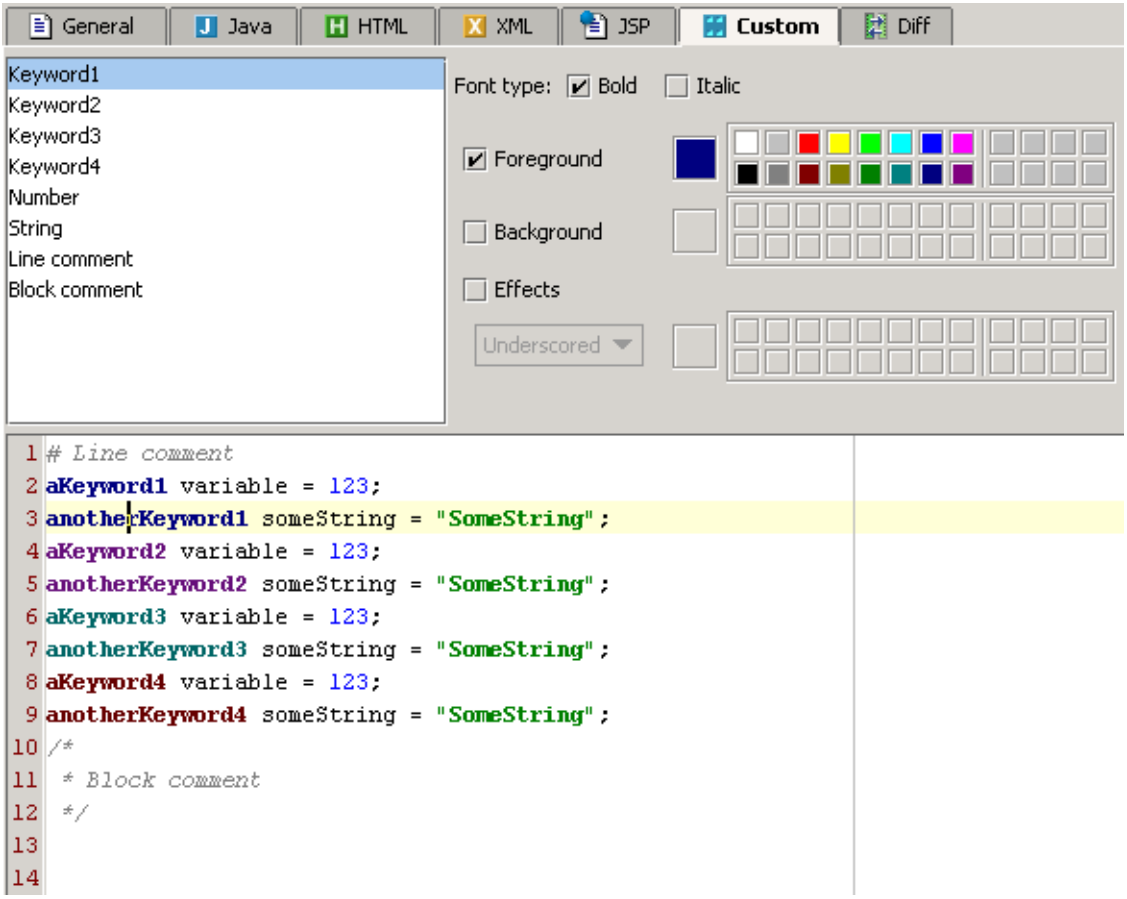


Figure 6.68. Custom colors/fonts (433)

7.4.7. Color Schemes

To use a custom color scheme, do the following:

7.4.7.1. Create

6.83. Click **Save as...**. The dialog “Save color scheme as” appears.
6.84. For “Name” enter **MyColorScheme**.

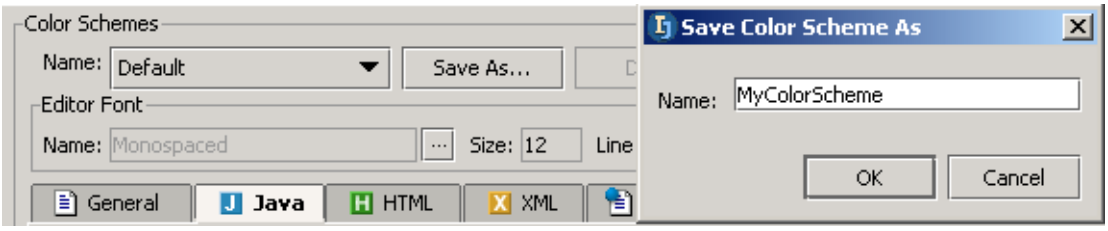


Figure 6.69. Custom color scheme name (789)

6.85. Click **OK**. The color scheme is created.

7.4.7.2. Select

6.86. Select from “Name” drop-down list **MyColorScheme**.

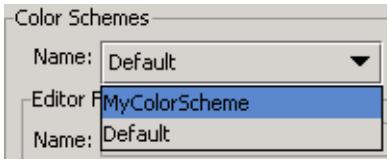


Figure 6.70. Selecting a color scheme (790)

7.4.7.3. Modify

6.87. In tab “General”: Click on **line 1**. Note that the “Default text” is selected.
6.88. Check the checkbox **Background**.
6.89. For the background color select grey.

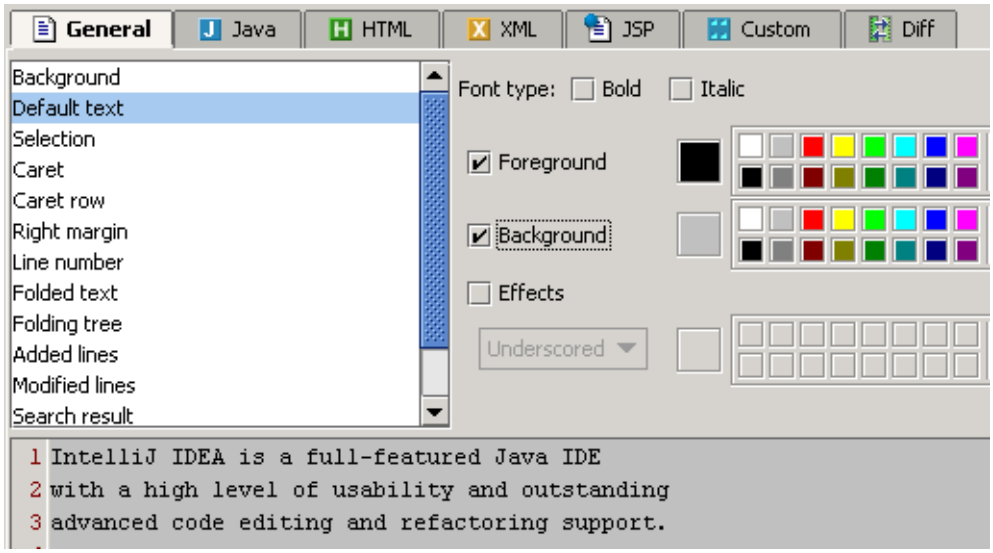


Figure 6.71. Selecting a background color (791)

7.4.7.4. Apply

6.90. Click **Apply**. The text background is changed.

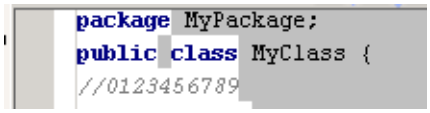


Figure 6.72. New background color (792)

7.5. Code style X

IDEA provides the following code style functionality to make it easier to recognize code:

7.5.1. General X

Tab **General** shows general code styles.

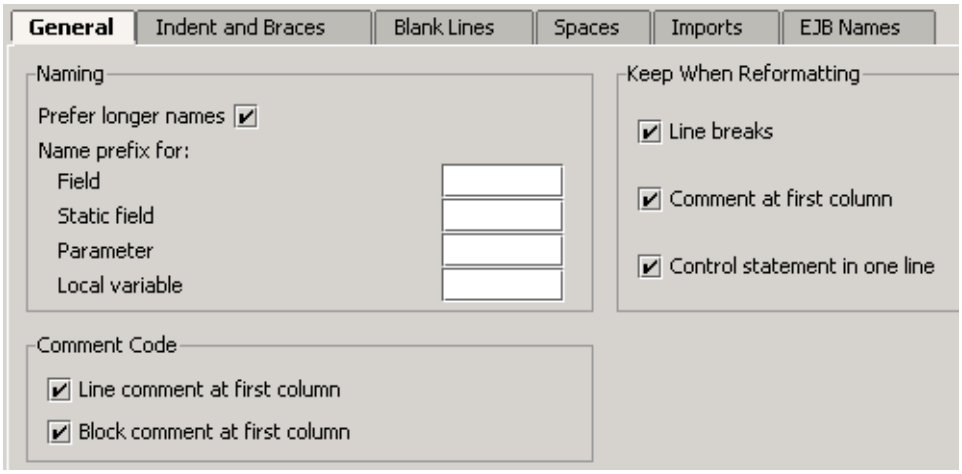


Figure 6.73. General code style (431)

7.5.2. Indent and Braces X

Tab **Indents and braces** shows indents and braces for different types of code and text.

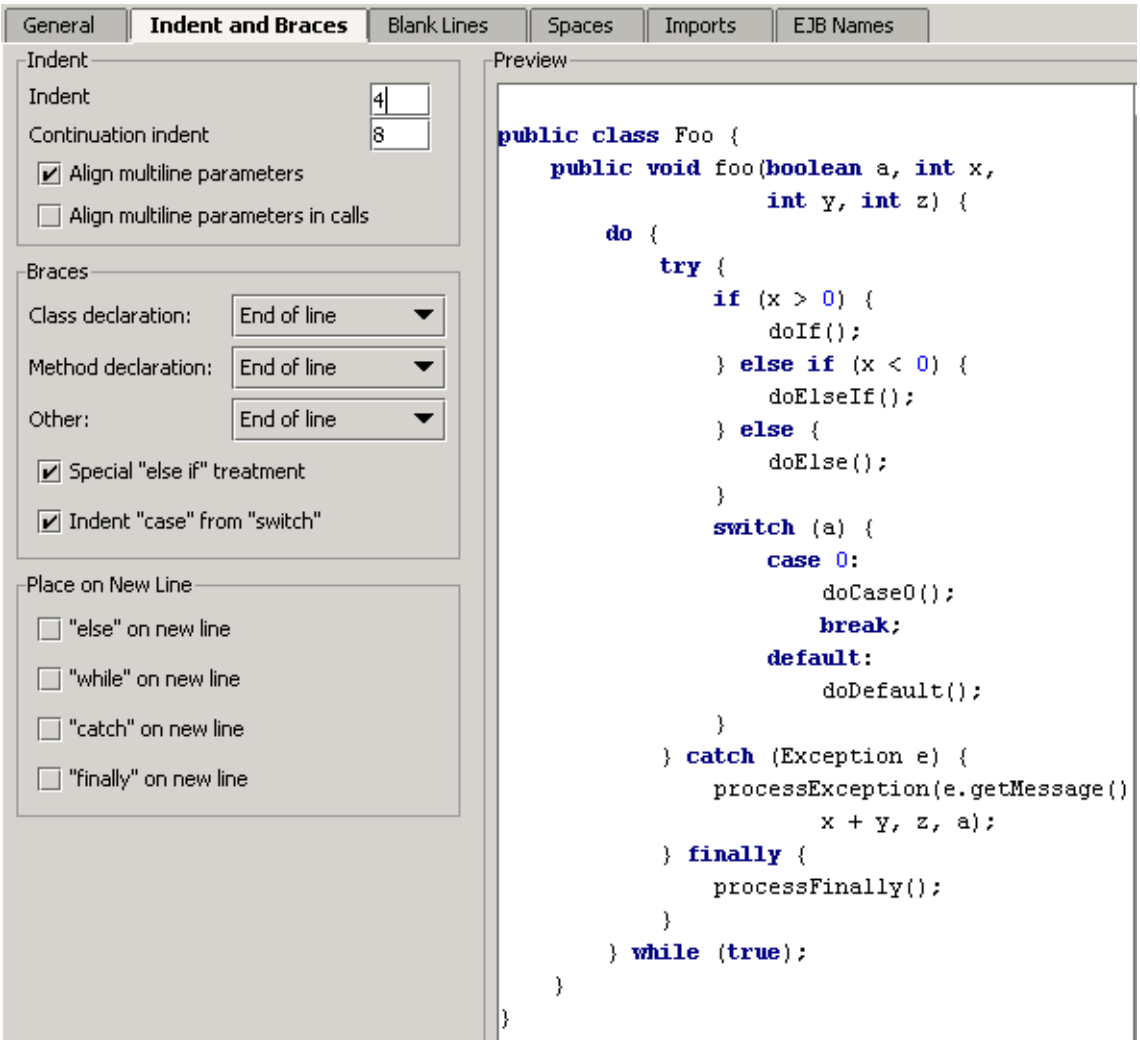


Figure 6.74. Code style / indents and braces (430)

7.5.3. Blank lines X

Tab **Blank lines** shows how blank lines are added.

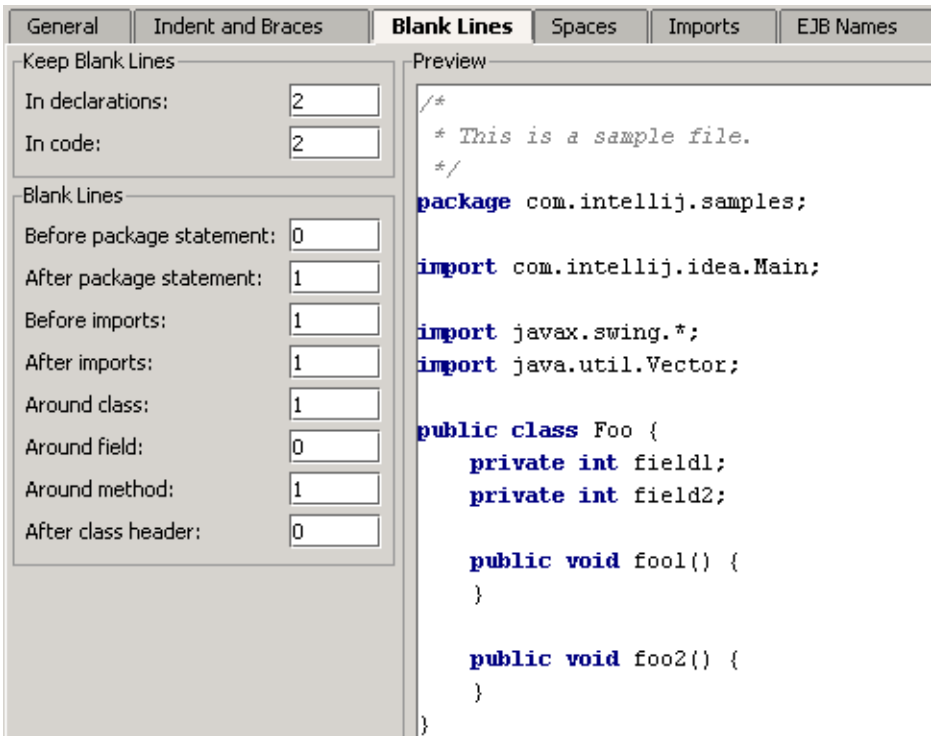


Figure 6.75. Code style / blank lines (429)

7.5.4. Spaces X

Tab **Spaces** shows how spaces are added.

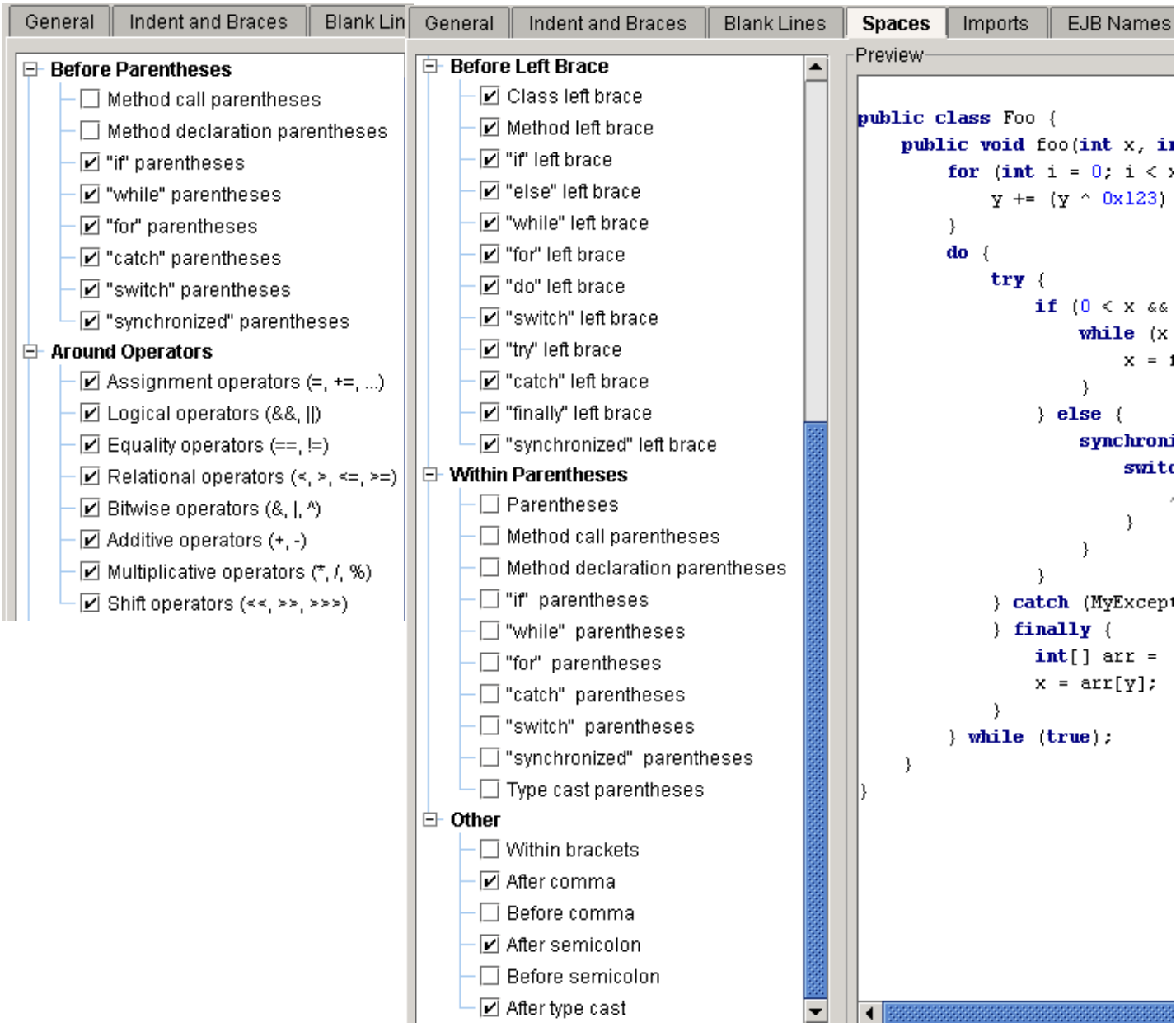


Figure 6.76. Code style / spaces (428,427)

7.5.5. Imports X

Tab **Imports** shows how imports are configured.

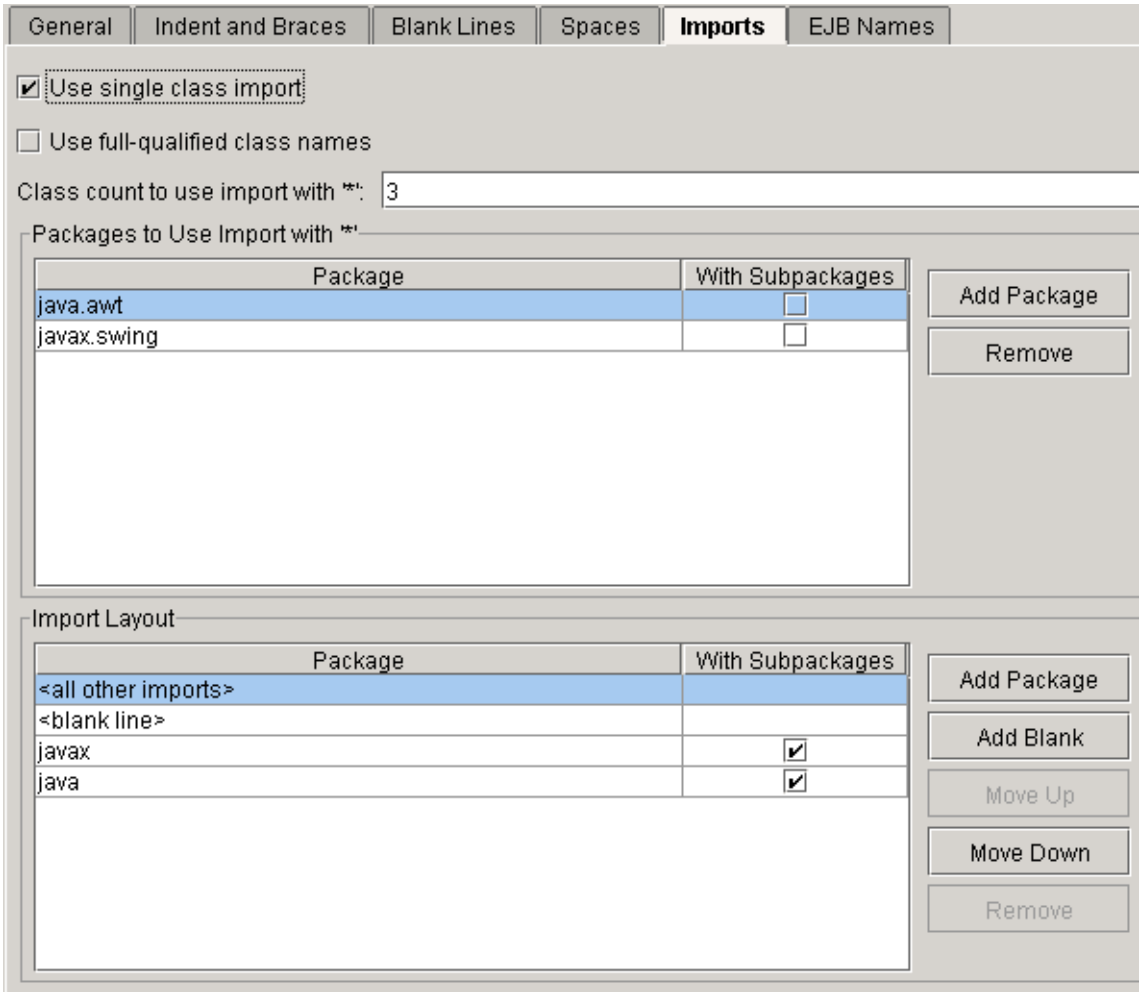


Figure 6.77. Code style / imports (426)

7.5.6. EJB Names X

20021014TTT move this somewhere else?? are EJB names really code style relevant??.

Tab **EJB Names** shows how EJB's are named by default.

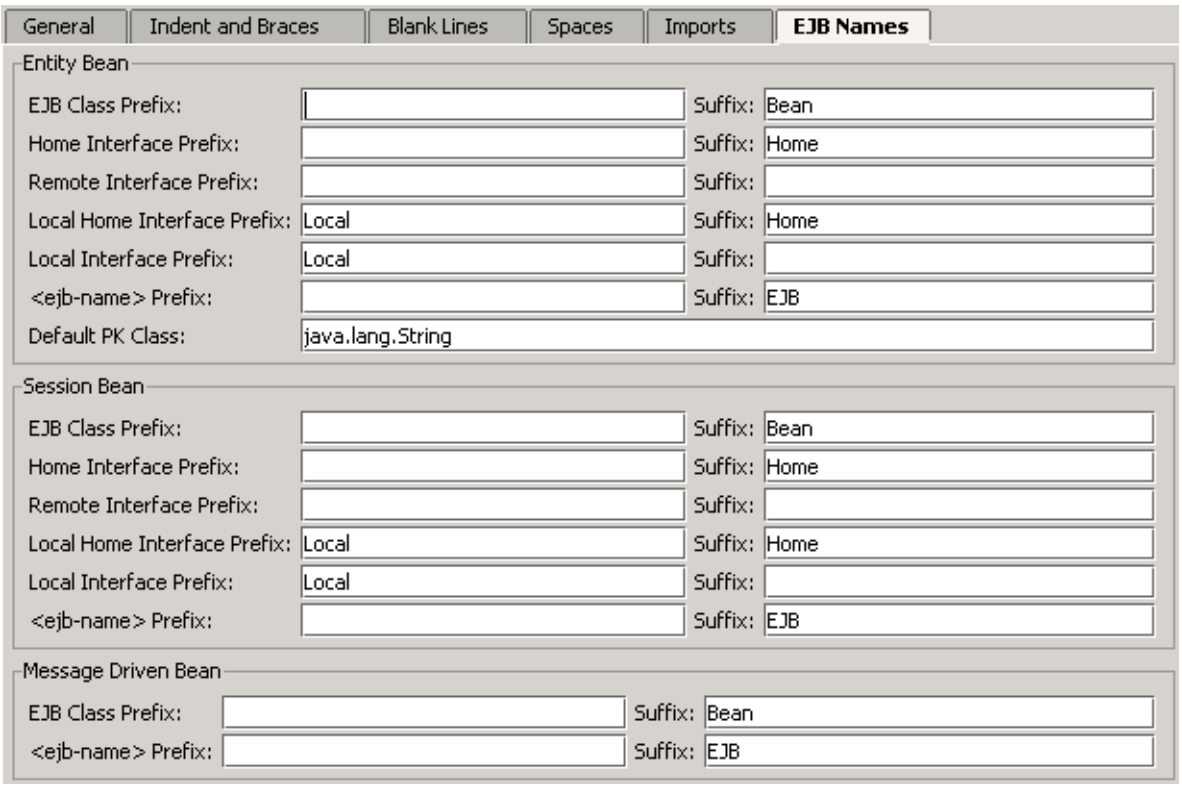


Figure 6.78. Code style / EJB names (793)

7.5.7. Code style schemes

To use a custom code style scheme, do the following:

7.5.7.1. Create

6.91. Click **Save as...**. The dialog “Save code style scheme as” appears.
6.92. For “Name” enter **MyCodeStyleScheme**.

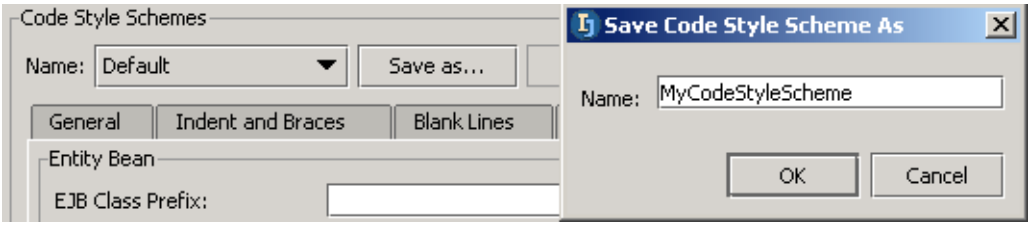


Figure 6.79. Custom code style scheme name (794)

6.93. Click **OK**. The code style scheme is created.

7.5.7.2. Select

6.94. Select from “Name” drop-down list **MyCodeStyleScheme**.

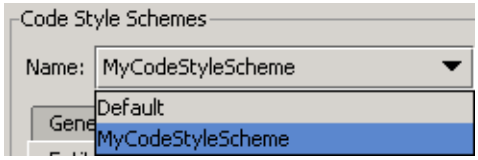


Figure 6.80. Selecting a code style scheme (795)

7.5.7.3. Modify

6.95. In tab “Indent and braces”: In section “Braces”: For “Class declaration” select **Next line**. Note the different style for indenting class declarations.

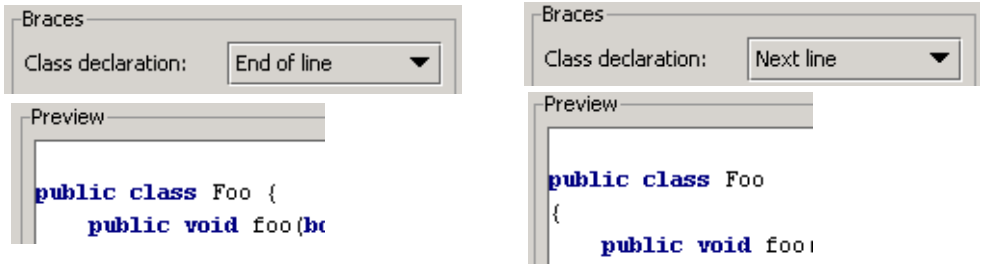


Figure 6.81. Class declaration indents (796,797,798,799)

6.96. Click **OK**. The code style is saved.

7.5.7.4. Apply

7.5.7.4.1. To existing class

6.97. Open **MyClass.java**.
6.98. Select **Tools | Reformat code...**. The dialog “Reformat code” appears.
6.99. Select **File**.

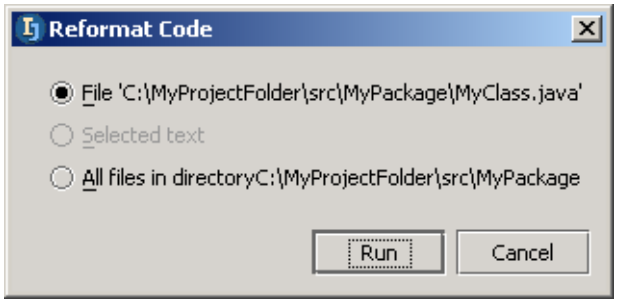


Figure 6.82. Dialog “Reformat code” (801)

6.100. Click **Run**. The file is reformatted.

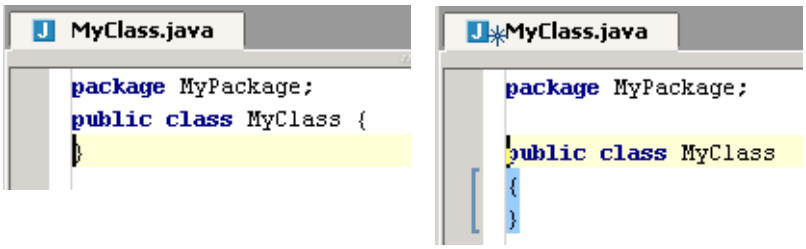


Figure 6.83. Reformatted source file (800,802)

7.5.7.4.2. To class template

6.101. Select **Options | File templates**. The dialog “File templates” appears.

6.102. For tab “Templates” class type “New class” check checkbox **Reformat according to style**.

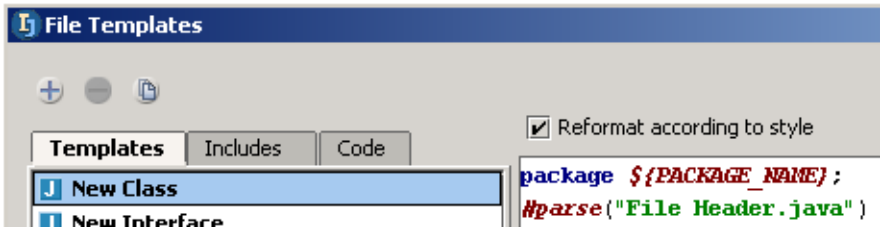


Figure 6.84. Reformat according to style checkbox (803)

6.103. Click **OK**.

6.104. Create a new class. Note the code style.

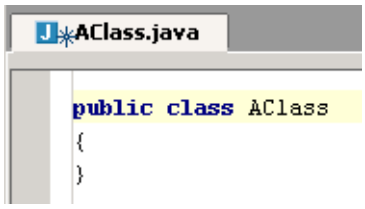


Figure 6.85. New class with code style (804)

7.5.8. Autoindent

6.105. Create class **Class1**:

```
     public class Class1 {
  String s1 = "string1";
String s2 = "string2";
         public static void main(String[] args) {
   System.out.println("Hello");
}
          }
```

6.106. Select all the text (CTRL-A).

6.107. Select **Code | Autoindent lines**. The lines of text are auto-indented.

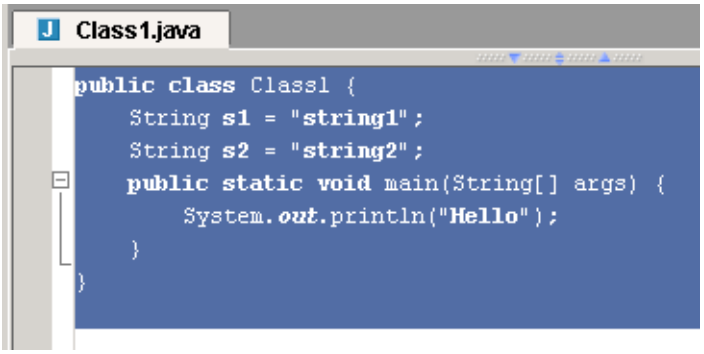


Figure 6.86. Autoindented code (346)

7.5.9. Reformat

IDEA can reformat

7.5.9.1. File

6.108. Create class **Class1**:

```
public class Class1 {String s1 = "string1"; String s2 = "string2";
 public static void main(String[] args) {
System.out.println("Hello");}}
```

6.109. Select **Tools | Reformat code...**. The dialog “Reformat code” appears.

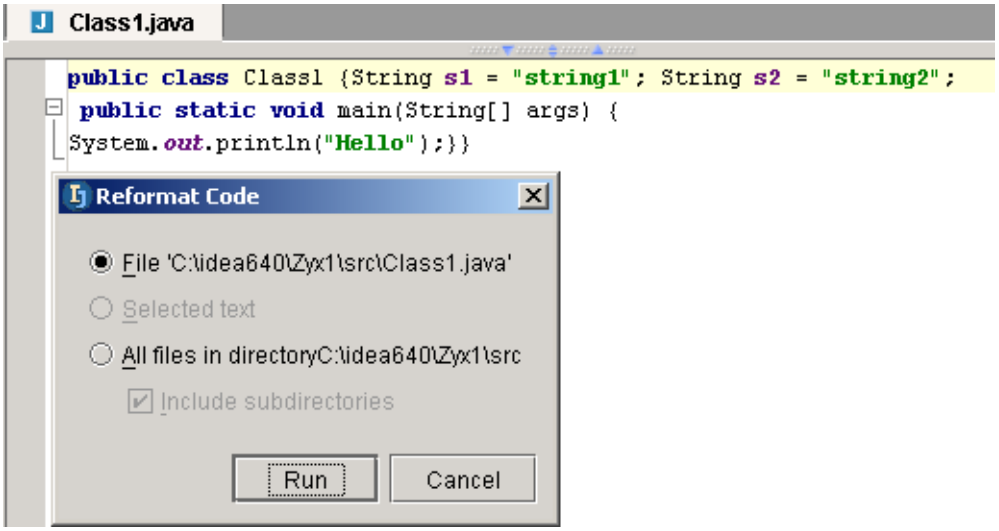


Figure 6.87. Dialog “Reformat code” (345)

6.110. Select **Run**.

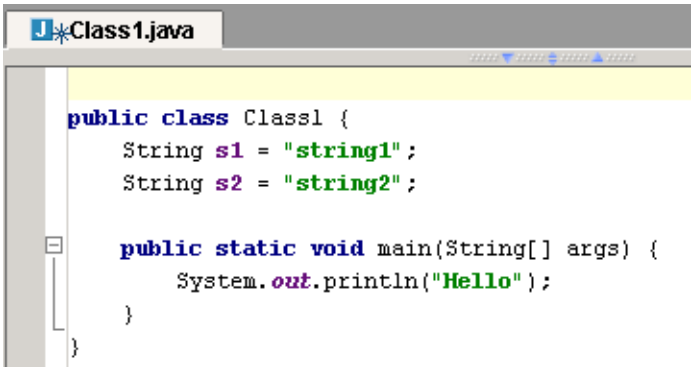


Figure 6.88. Reformatted code (344)

7.5.9.2. Selected text

6.111. Undo the reformatting for **Class1**:
6.112. Select the lines that are in bold below.

```
public class Class1 {String s1 = "string1"; String s2 = "string2";
 public static void main(String[] args) {
System.out.println("Hello");}}
```

6.113. Select **Tools | Reformat code...**. The dialog “Reformat code” appears.

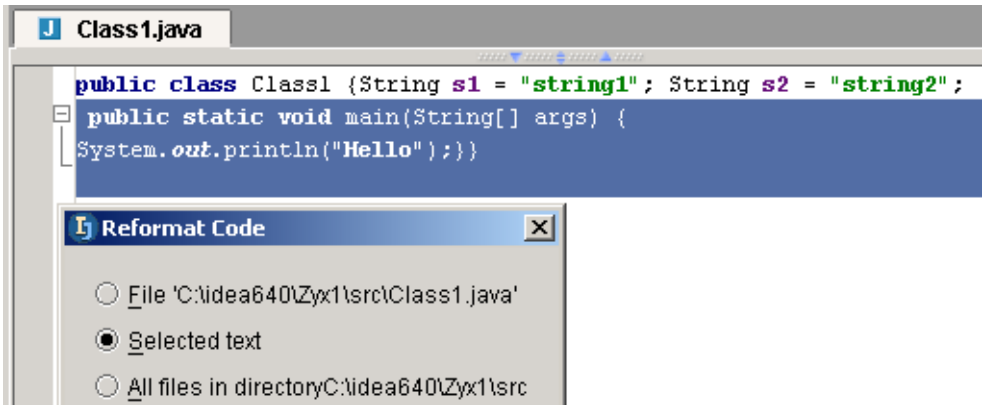


Figure 6.89. Dialog “Reformat code” (selected text) (343)

6.114. Select **Run**. Note that only the selected text is reformatted.

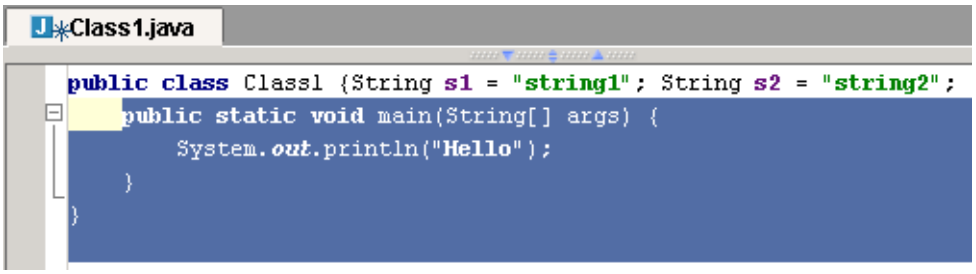


Figure 6.90. Reformatted code (342)

7.5.9.3. Files in directory

6.115. Select a directory.
6.116. Select **Tools | Reformat code...**. The dialog “Reformat code” appears.

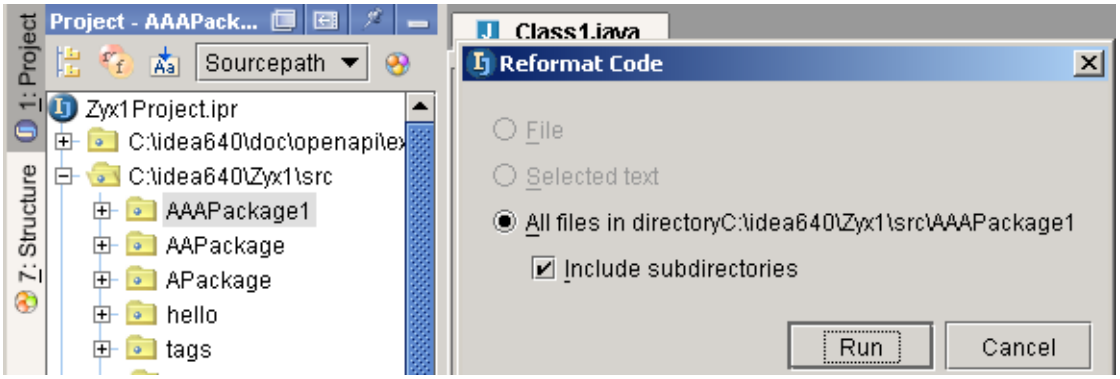


Figure 6.91. Dialog “Reformat code” (selected directory) (341)

If you click **Run**, then the files in the chosen directory and all subdirectories will be reformatted.

7.6. Error indication X

The IDEA editor checks for the following types of errors while editing:

7.6.1. Deprecated symbol

6.117. Change **MyClass** as shown:

```
package MyPackage;
public class MyClass {
    void aMethod() {
        System.out.println(java.awt.Frame.CROSSHAIR_CURSOR);
    };
}
```

An deprecation warning is generated.

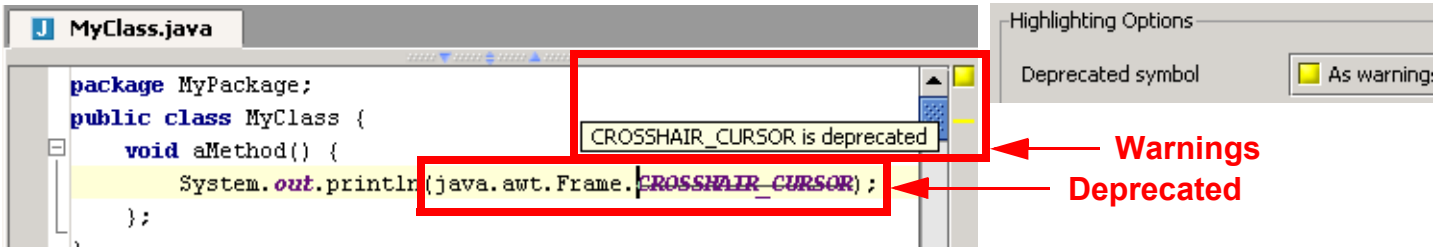


Figure 6.92. Deprecation (720,722)

7.6.2. Reparse delay

6.118. In IDE Settings - Errors: Set **Autoreparse delay** to **5000** (5 seconds).
6.119. In an editor: Make an error (in the example below, “package” was changed to “pacxxxkage”).
6.120. Move the cursor to a different line. Note that the error is marked (ie, the file is reparsed) after 5 seconds.

Figure 6.93. Reparse delay (714,716)

6.121. In IDE Settings - Errors: Set **Autoreparse delay** to **300**.
6.122. Click **Apply**.

7.6.3. Unused import

6.123. Change **MyClass** as shown:

```
import java.beans.*;
package MyPackage;
public class MyClass {
    void aMethod() {};
}
```

An “Unused import statement” warning is generated.

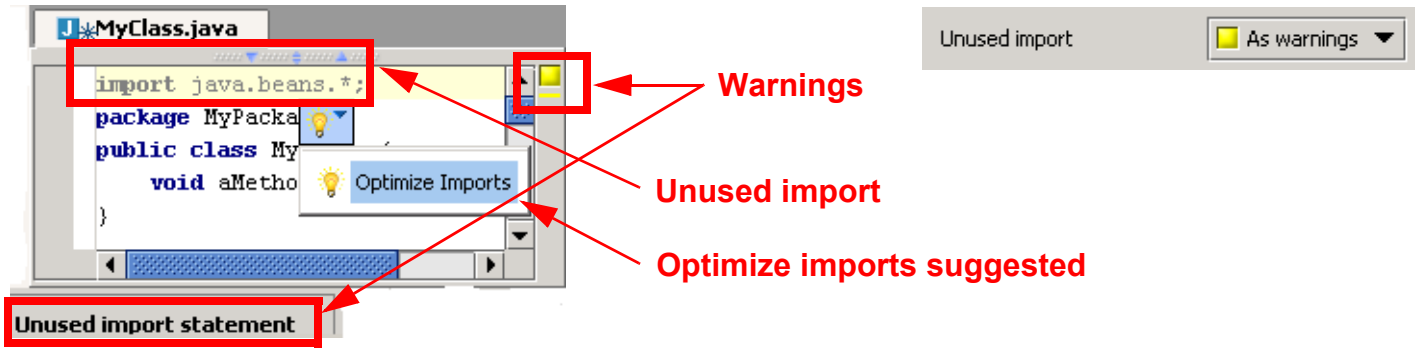


Figure 6.94. Unused import (715,717)

7.6.4. Unused symbol

6.124. Change **MyClass** as shown:

```
package MyPackage;
public class MyClass {
    void aMethod() {
        int a;
    };
}
```

An “Unused symbol” warning is generated.

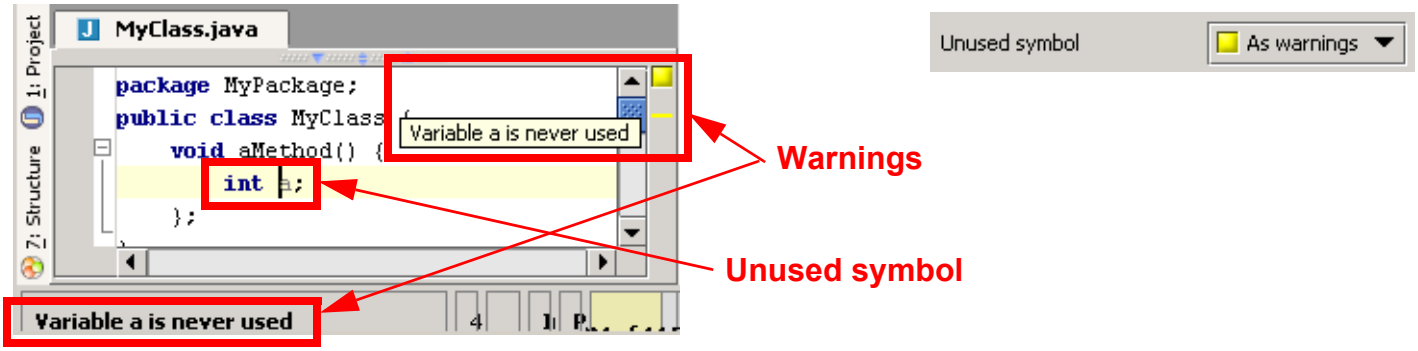


Figure 6.95. Unused symbol (718,719)

~~7.6.5. Unused throws declaration XXX~~

7.6.6. Redundant type cast

6.125. Change **MyClass** as shown:

```
package MyPackage;
public class MyClass {
 Object a = new Integer (1);
```

```
 Object b = (Object)a;
}
```

An “Redundant type cast” warning is generated.

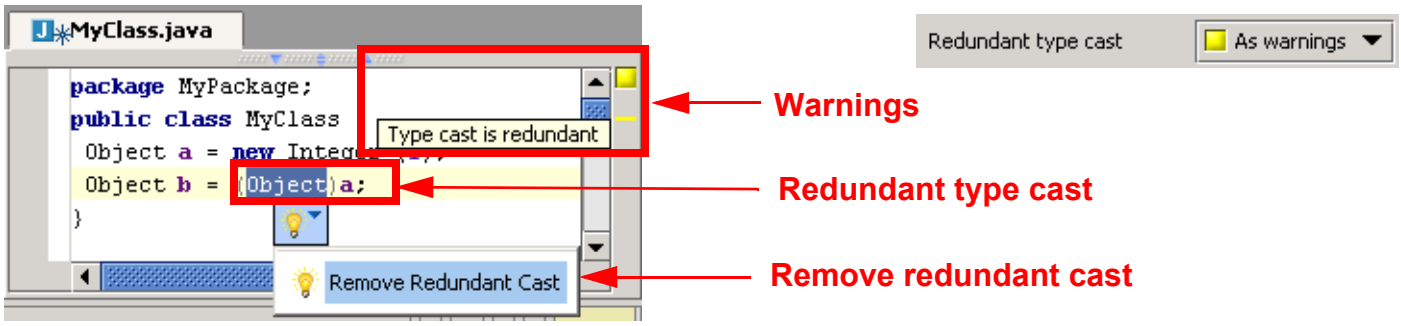


Figure 6.96. Redundant type cast (721,723)

~~7.6.7. Silly assignment XXX~~

7.6.8. Wrong package statement

6.126. Change **MyClass** as shown:

```
package MyPackage2;
public class MyClass {
}
```

An wrong package warning is generated.

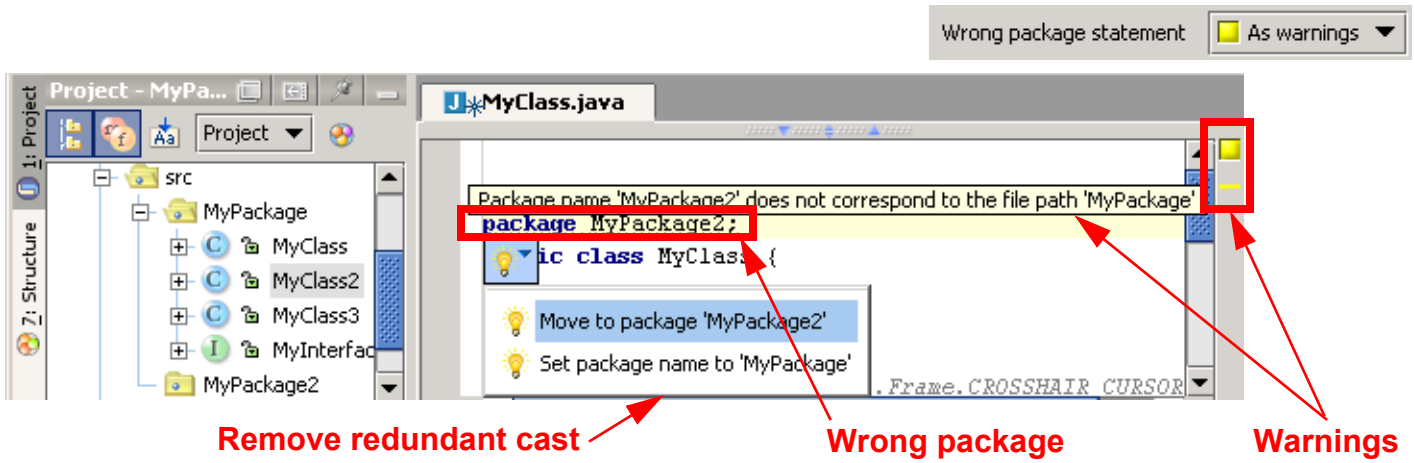


Figure 6.97. Wrong package statement (724,725)

~~7.6.9. Javadocs errors XXX~~

7.6.10. Unknown Javadoc tags

6.127. Change **MyClass** as shown:

```
package MyPackage;
public class MyClass {
/**
 * @param p1
```

```
 * @paxxxxram p2
 * @return
 */
  public int foo(int p1, int p2)
   { return p1 + p2; }
}
```

An wrong javadoc tag is generated.

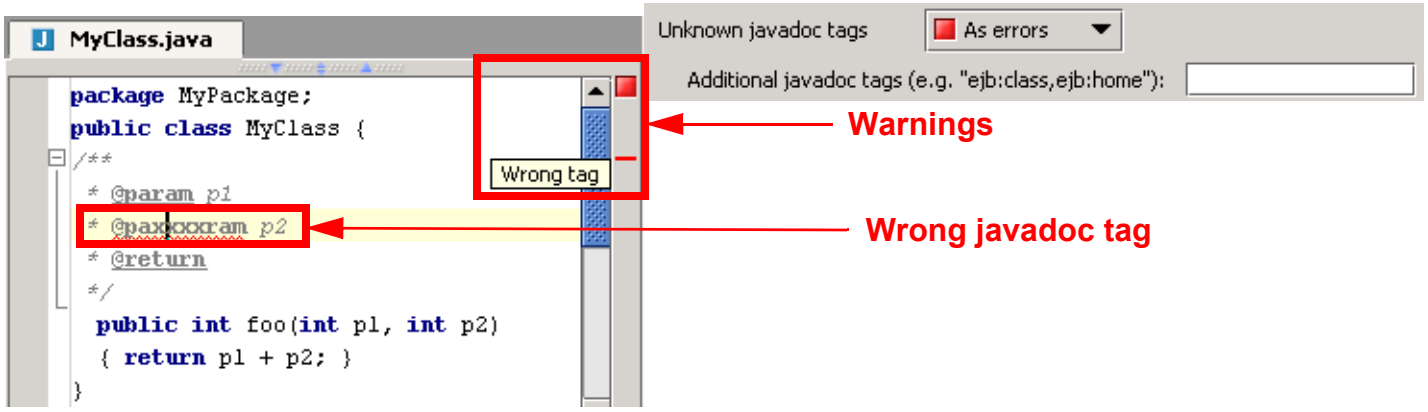


Figure 6.98. Wrong javadoc tag (726,727)

~~7.6.11. EJB errors XXX~~

~~Figure 6.99. EJB error (728)~~

~~7.6.12. EJB warnings XXX~~

~~Figure 6.100. EJB error (729)~~

7.7. Todo

The IDEA todo functionality makes it easy to make and find todo notes in a file or project.
IDEA todo includes:

7.7.1. Basics

6.128. In Class1 add the line

```
//@todo finish class1
```

6.129. In Class2 add the lines

```
//@todo finish class2
//@todo get ready for class3
```

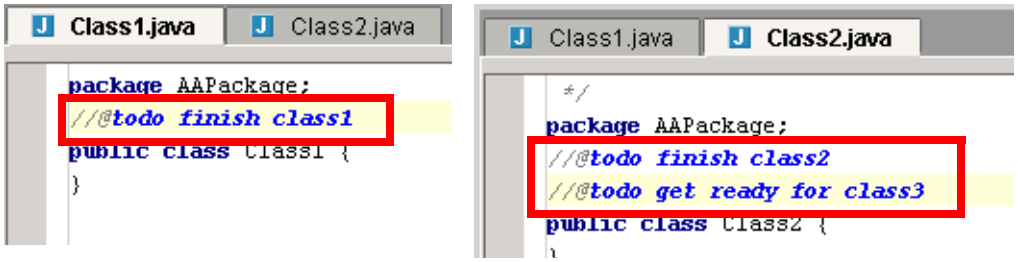


Figure 6.101. Added todo text (702,703)

6.130. Open the **TODO** tool.

6.131. Select the tab **Project**. The todos for the entire project are shown.

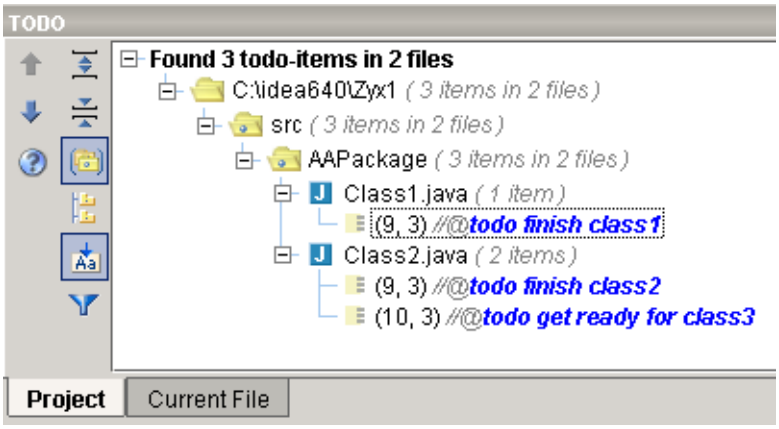


Figure 6.102. TODO items for the project (704)

6.132. Select tab **Current file**. The todos for the current file are shown.

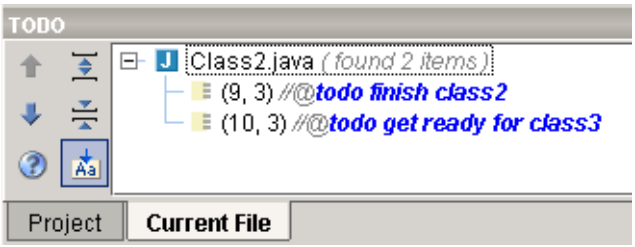


Figure 6.103. Todo items for a file (705)

6.133. Select a different file. The todo items for that file are shown in the TODO tool.

You can also open a file by double-clicking on a todo item.

7.7.2. Patterns

You can create custom patterns that are interpreted by IDEA as todo items.

- **Create pattern**
- **Add pattern to file**

7.7.2.1. Create pattern

6.134. Select **Options | IDEA settings**. The “IDE Options” dialog appears.
6.135. Select **TODO**.
6.136. For Patterns: Select **Add**. The dialog “Add Pattern” appears.
6.137. For Pattern: Enter **\btodoNOW\b.***.
6.138. Select the red icon.

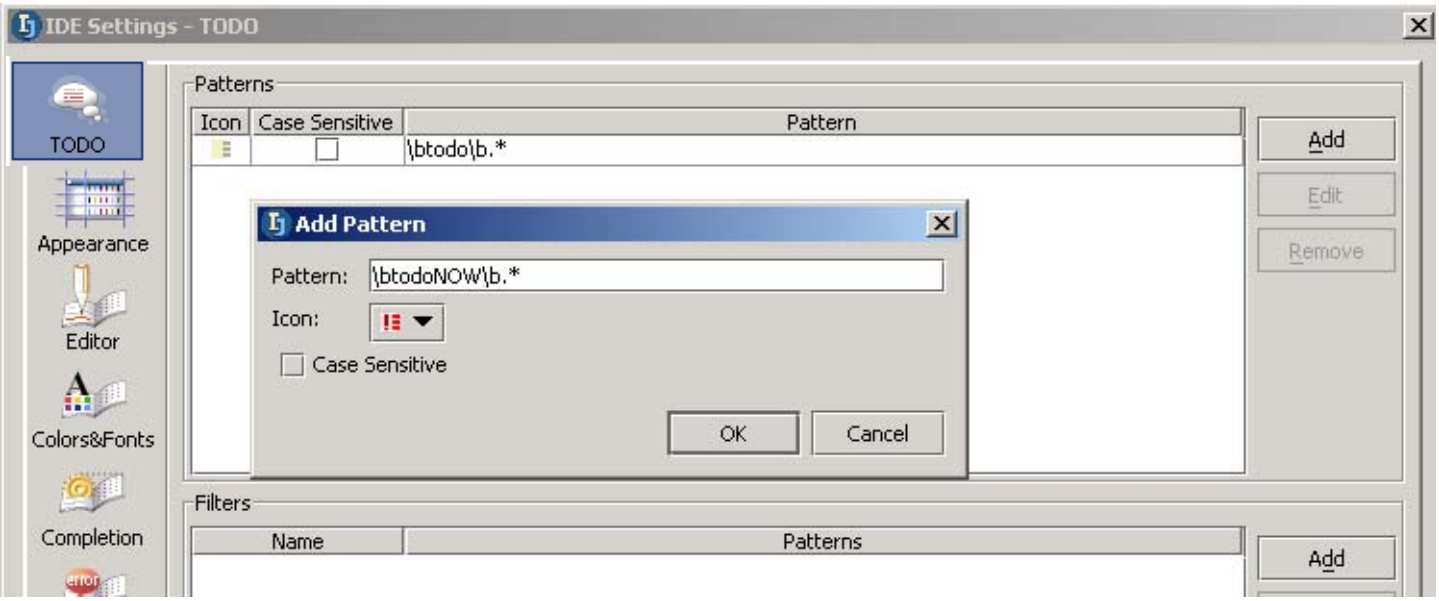


Figure 6.104. New TODO pattern (706)

6.139. Click **OK**. The new pattern appears in the list.

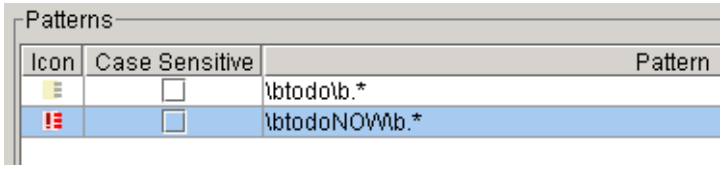


Figure 6.105. New TODO pattern (707)

6.140. Click **OK** to close.

7.7.2.2. Add pattern to file

6.141. In Class1 add the line

```
//@todonow urgent stuff
```

6.142. View the todo in teh TODO dialog:

Figure 6.106. New TODO in the TODO tool (708)

7.7.3. Filters

You can create filters that only show certain todo patterns.

- **Create filter**
- **Display filtered TODOs**

7.7.3.1. Create filter

6.143. In dialog “IDEA options” tab “TODO”: For **Filters** click **Add**. The dialog “Add filter” appears.
6.144. For “Name” enter **NOW**.
6.145. Check **\btodoNOW\b.***.

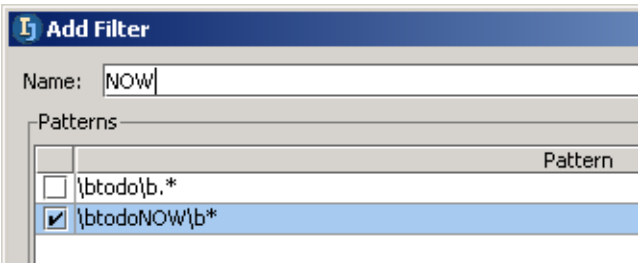


Figure 6.107. New TODO filter (709)

6.146. Click **OK**. The new filter appears in the list.

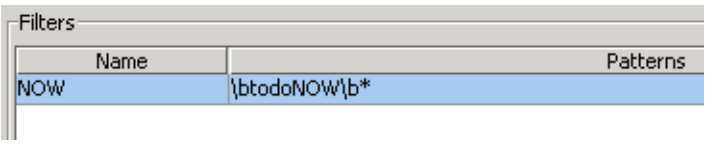


Figure 6.108. New TODO filter (710)

6.147. Click **OK** to close.

7.7.3.2. Display filtered TODOs

6.148. In the TODO dialog: Click on filter icon ( ). A popup for selecting the filter appears.

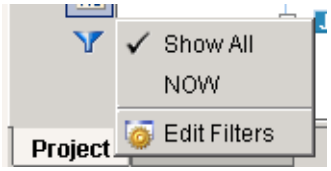


Figure 6.109. Popup for selecting filter (711)

6.149. Select **NOW**. Only the NOW TODOs are shown.

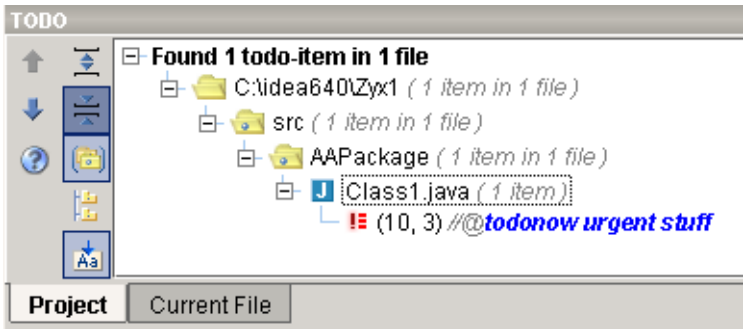


Figure 6.110. Only filtered TODOs shown (713)

8. Code Automation

contacts: many, maxim, valya

IDEA offers the following code automation functions:

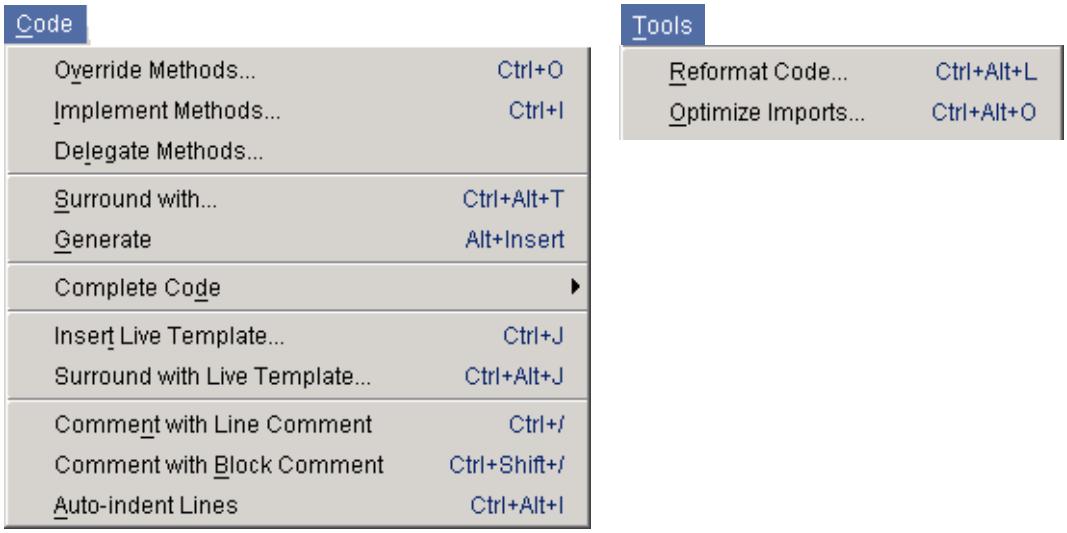


Figure 7.1. Code automation menu items (417,416,415)

8.1. Code completion (suggestion)

20021016TTT recommended dialog changes.

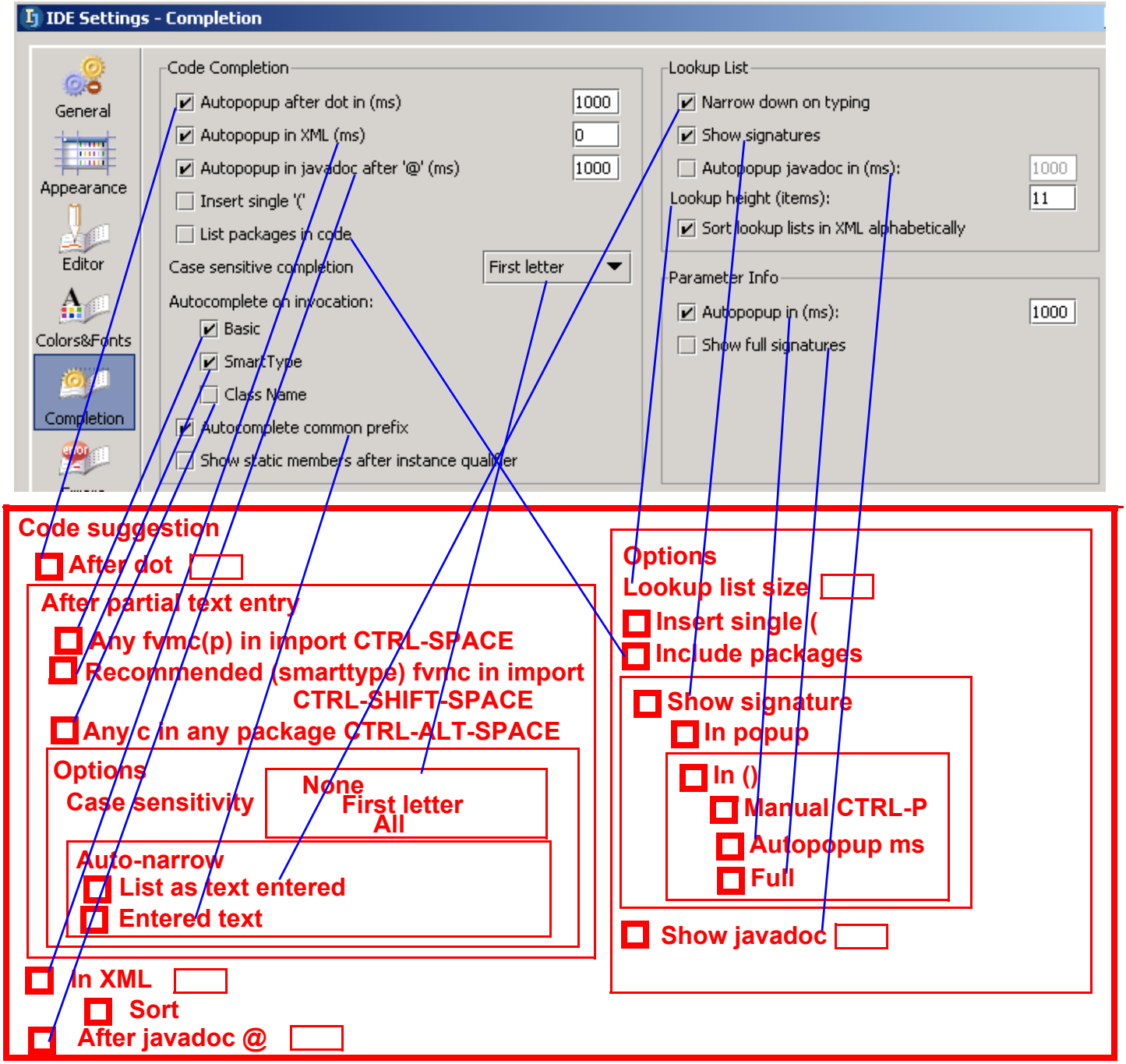


Figure 7.2. current and recommended dialog (812)

IDEA can suggest how to complete partially entered code:

- **8.1.1. Suggest after dot (auto) (page 166)**
- **8.1.2. Suggest after partial text (manual) (page 167)**
- **8.1.3. Suggest in XML (auto) X (page 174)**
- **8.1.4. Suggest after @ (javadoc) (auto) X (page 174)**

The above functions have several

- **8.1.5. Options (page 175)**

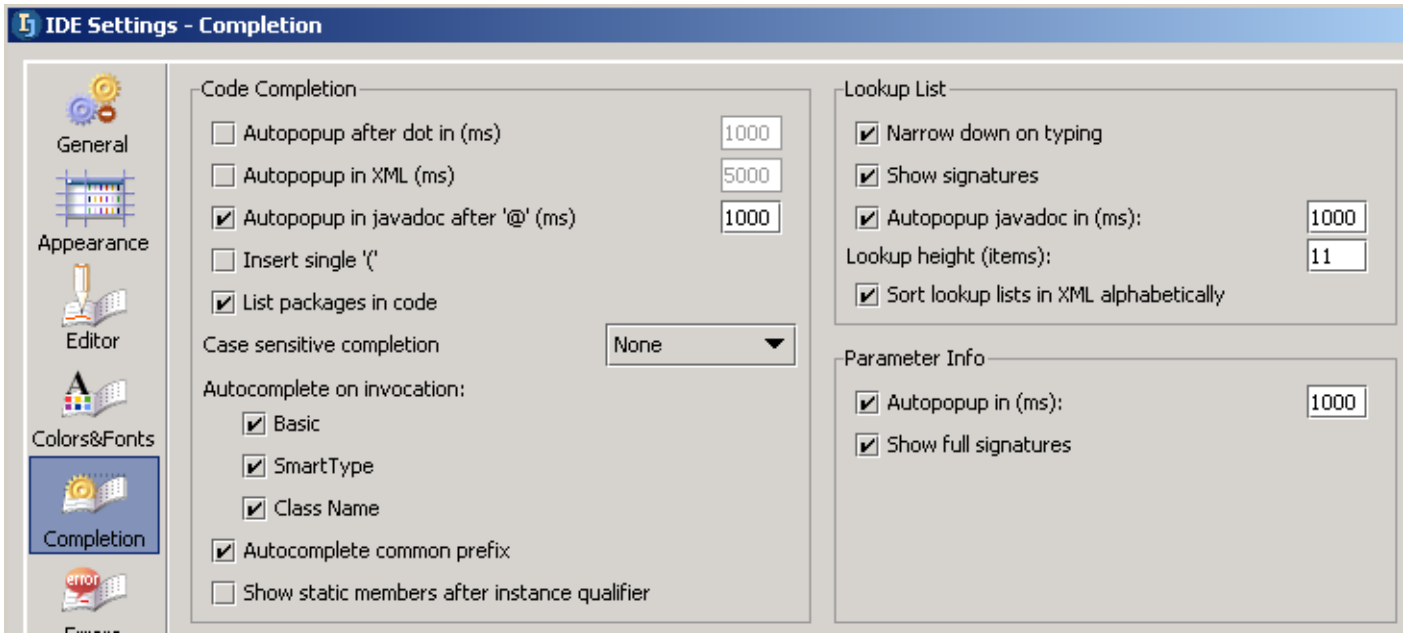


Figure 7.3. IDEA Settings / Completion (858)

8.1.1. Suggest after dot (auto)

Determines if and after what delay an autopopup will appear after a period has been typed at the end of a declaration (assuming that the cursor does not move and nothing else is typed in after the dot).

7.1. Open **IDEA Settings | Completion**.
7.2. Check the checkbox **Autopopup after dot in (ms)**.
7.3. For the value enter **5000** (5 secs).
7.4. Click **OK**.
7.5. In the editor: Enter "**System.out.**". Note that after 5 seconds an autopopup appears.

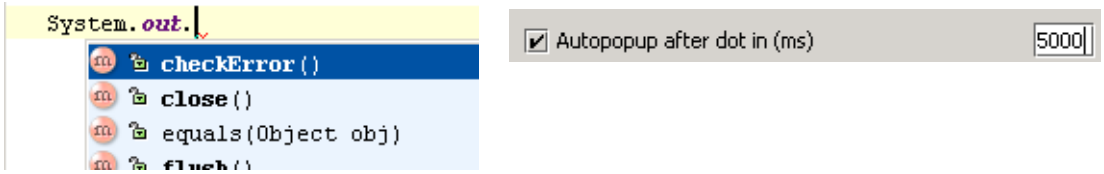


Figure 7.4. Autopopup (824,823)

7.6. Open **IDEA Settings | Completion**.
7.7. Uncheck the checkbox.
7.8. Click **OK**.
7.9. Again in the editor: Enter "**System.out.**". Note that the popup does not appear.
7.10. Click **CTRL-SPACE**. The popup appears.
7.11. Open **IDEA Settings | Completion**.
7.12. Check the checkbox.
7.13. For the value enter **1000** (1 sec).
7.14. Click **OK**.

8.1.2. Suggest after partial text (manual)

IDEA supports the following variations for code suggestion after part of the code has been entered and a hot key has been pressed:

- **8.1.2.1. fvmc(p) in import CTRL-SPACE (basic) (page 167)**
- **8.1.2.2. fvmc recommended in import CTRL-SHIFT-SPACE (smarttype) (page 168)**
- **8.1.2.3. Classes recommended in all packages CTRL-ALT-SPACE (page 169)**

The above functions have several

- **8.1.2.4. Options (page 170)**

8.1.2.1. fvmc(p) in import CTRL-SPACE (basic)

This function suggests

- fields
- variables
- methods
- classes
- packages (optional)

that

- match the partial text that has been entered and
- are imported

7.15. Enter the following code:

```
String myString = "hello";
myString.c
```

7.16. Leave the cursor positioned after "myString.c".

7.17. Press **CTRL-SPACE**. A list of suggestions appears.

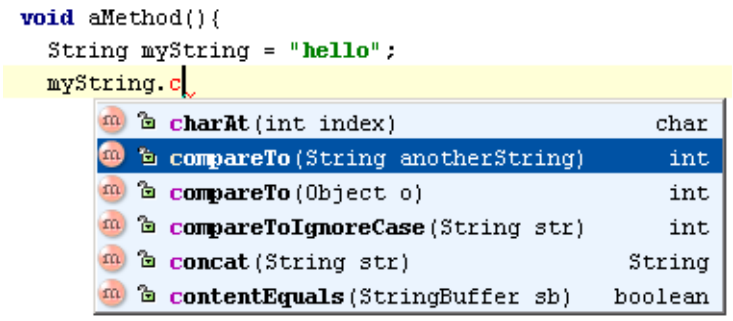


Figure 7.5. Matching fvmc(p) in import (842)

7.18. Double-click on a suggestion to complete the code.

8.1.2.2. fvmc recommended in import CTRL-SHIFT-SPACE (smarttype)

This function suggests

- fields
- variables
- methods
- classes

that

- match the partial text that has been entered and
- are imported and
- are most likely required in the given situation

7.19. Enter the following code:

```
String myString = "hello";
myString.compareTo(
```

7.20. Leave the cursor positioned after "myString.compareTo(".

7.21. Press **CTRL-SHIFT-SPACE**. A list of suggestions that are most likely required in this situation appears.

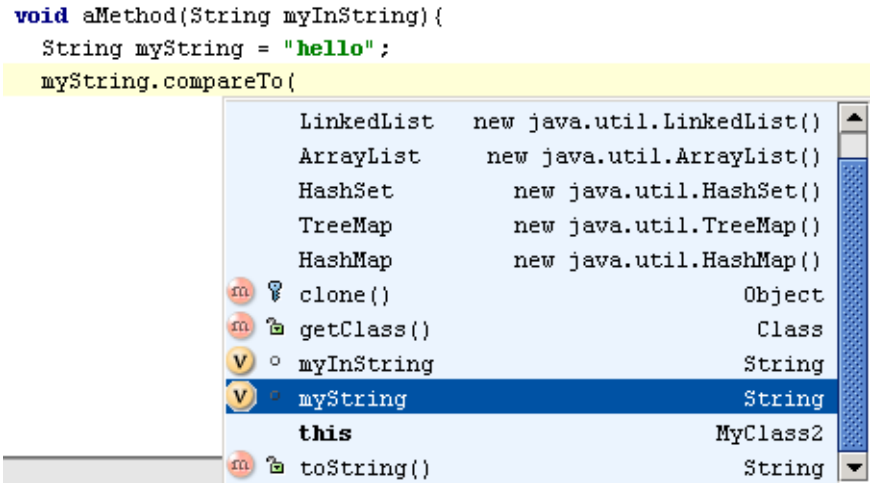


Figure 7.6. Recommended fvmc in import (843)

7.22. Double-click on a suggestion to complete the code.

8.1.2.3. Classes recommended in all packages CTRL-ALT-SPACE

This function suggests

- classes

that

- match the partial text that has been entered

Note that all classes in all packages are listed (not just those in the import).

7.23. Enter the following code (the letter O):

O

7.24. Leave the cursor positioned after “O”.

7.25. Press **CTRL-ALT-SPACE**. A list of all classes in all packages that start with “O” are listed.

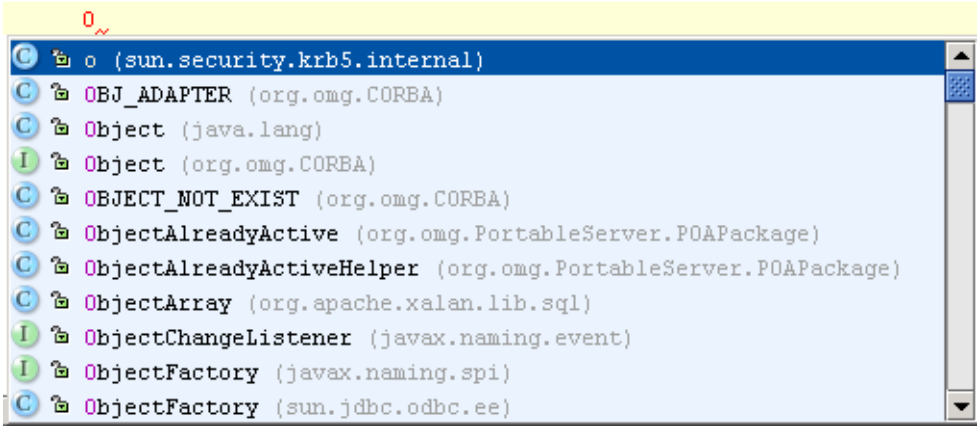


Figure 7.7. All matching classes (844)

7.26. Double-click on a suggestion to complete the code.

8.1.2.4. Options

The following options are available

8.1.2.4.1. Case sensitivity

IDEA can limit the list of suggestions to only those possibilities whose

letters have the same case as the entered partial text.

8.1.2.4.1.1. None

7.27. Open **IDEA Settings | Completion**.
7.28. For “Case sensitive completion” select **None**.
7.29. Uncheck the 3 checkboxes for “Autocomplete on invocation”.
7.30. Click **OK**.
7.31. Create Class2 with the following content:

```
package MyPackage;
public static class MyClass2 {
    static int ABCDEF = 1;
    static int Abcdef = 1;
    static void abcdef(){};
    MyClass2.AB
}
```

7.32. Place the cursor at the end of “MyClass2.AB”.
7.33. Press **CTRL-SPACE**. A popup appears with all 3 options.

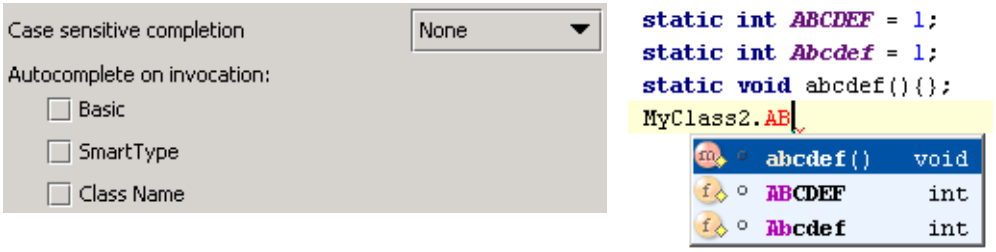


Figure 7.8. Case sensitive completion: None (835,836)

8.1.2.4.1.2. First letter

7.34. Open **IDEA Settings | Completion**.
7.35. For “Case sensitive completion” select **First letter**.
7.36. Click **OK**.
7.37. Place the cursor at the end of “MyClass2.AB”.
7.38. Press **CTRL-SPACE**. A popup appears with 2 options.

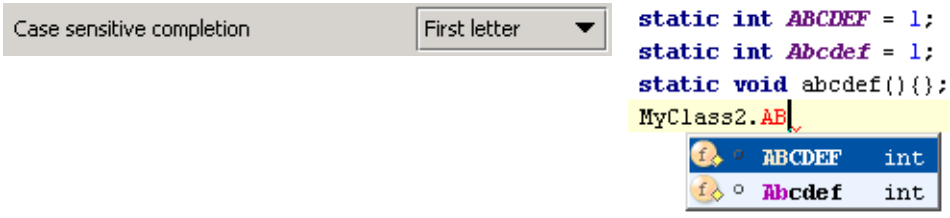


Figure 7.9. Case sensitive completion: First letter (837,838)

8.1.2.4.1.3. All

7.39. Open **IDEA Settings | Completion**.
7.40. For “Case sensitive completion” select **All**.
7.41. Click **OK**.
7.42. Place the cursor at the end of “MyClass2.AB”.
7.43. Press **CTRL-SPACE**. A popup appears with 1 option.

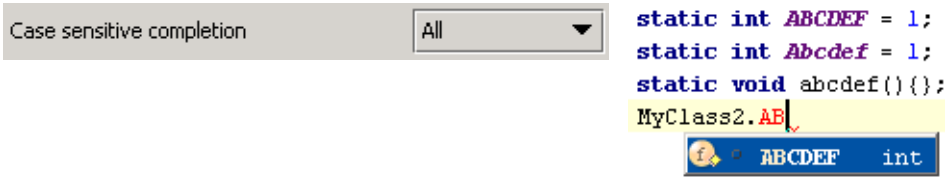


Figure 7.10. Case sensitive completion: All (839,840)

8.1.2.4.2. Auto-narrow

IDEA can automatically narrow the

- **8.1.2.4.2.1. List as text entered (page 172)**
- **8.1.2.4.2.2. Entered text (page 172)**

8.1.2.4.2.1. List as text entered

7.44. Check the checkbox **Narrow down on typing**.
7.45. Enter the following code:

```
String myString = "hello";
myString.c
```

7.46. Leave the caret at the end of "myString.c". Note the auto
7.47. Click **CTRL-SPACE**. A list of suggestions appears.

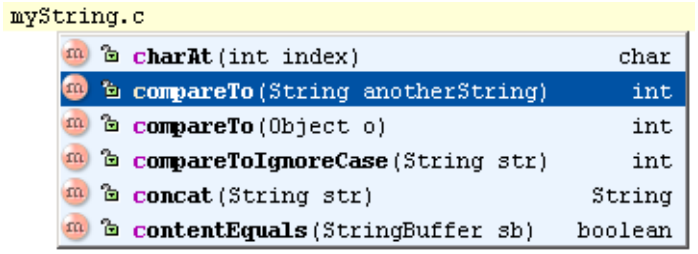


Figure 7.11. Suggestions after myString.c (845)

7.48. Press the "o" key. The list is narrowed.

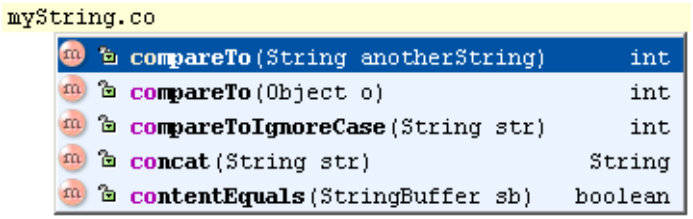


Figure 7.12. Suggestions after myString.co (846)

7.49. Press the "m" key. The list is further narrowed.

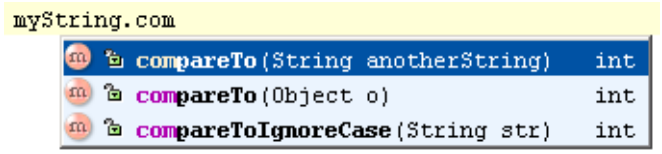


Figure 7.13. Suggestions after myString.com (847)

8.1.2.4.2.2. Entered text

7.50. Check the checkbox **Autocomplete common prefix**.
7.51. Enter the following code:

```
String myString = "hello";
myString.com
```

7.52. Leave the caret at the end of "myString.com".
7.53. Click **CTRL-SPACE**. Note that the letters "pareTo" are added and the corresponding suggestion list displayed.

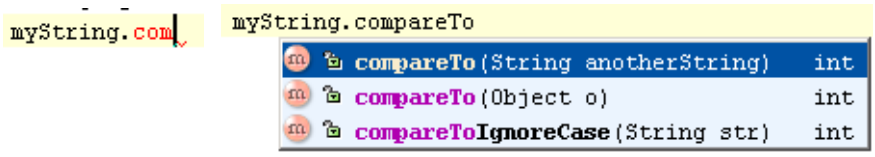


Figure 7.14. Entered text narrowed (848,849)

8.1.3. Suggest in XML (auto) X

Similar to **8.1.1. Suggest after dot (auto) (page 166)**, but for XML files.

~~**8.1.3.1. Sort XXX**~~

8.1.4. Suggest after @ (javadoc) (auto) X

Similar to **8.1.1. Suggest after dot (auto) (page 166)**, but for popups after the javadoc '@'.

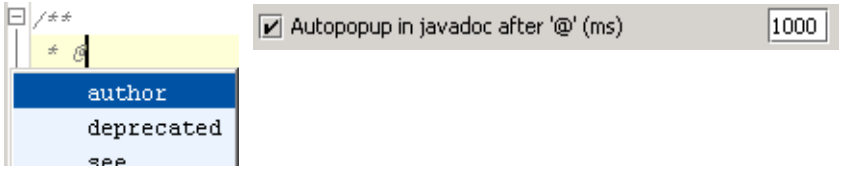


Figure 7.15. Autopopup in javadoc after '@' (826,825)

8.1.5. Options

The following options for code recommendations are available:

8.1.5.1. Lookup list height

Determines the number of lines in the suggestion popup.

7.54. Set "Lookup list height" to **2**.
7.55. Display a list. Note that the list displays only 2 lines (you can scroll to view the other lines).

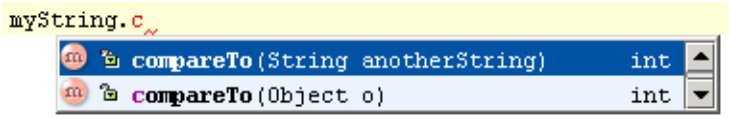


Figure 7.16. Lookup list height = 2 (856)

8.1.5.2. Insert single '('

If checked: Only a single '(' is inserted after a suggestion has been selected.

7.56. Check the checkbox **Insert single ')'**.
7.57. In the editor: Add the following:

```
String aString = "Hello";
aString.getBytes
```

7.58. Place the cursor at the end of "getBytes".
7.59. Press **CTRL-SPACE**. A single ')' appears.

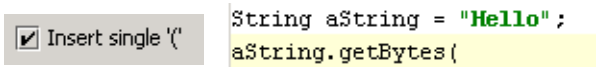


Figure 7.17. Insert single ')' (827,828)

7.60. Delete the single ')'.
7.61. Uncheck the checkbox **Insert single ')'**.
7.62. Place the cursor at the end of "getBytes".
7.63. Press **CTRL-SPACE**. '( )' appears.

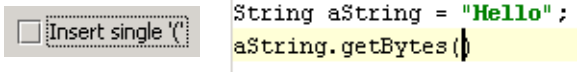


Figure 7.18. Insert '()' (829,830)

8.1.5.3. Include packages

If checked: Available packages are included in the list of suggestions.

7.64. Check the checkbox **List packages in code**.

7.65. In the editor: Add the following:

```
String comString = "Hello";
c
```

7.66. Place the cursor at the end of “c”.

7.67. Press **CTRL-SPACE**. A popup appears that includes packages.

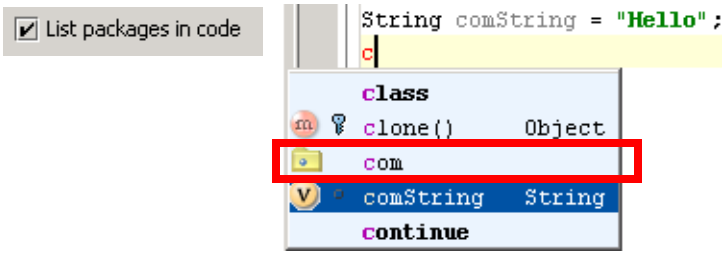


Figure 7.19. List packages in code (832,831)

7.68. Uncheck the checkbox **List packages in code**.

7.69. Place the cursor at the end of “c”.

7.70. Press **CTRL-SPACE**. A popup appears that does not include packages.

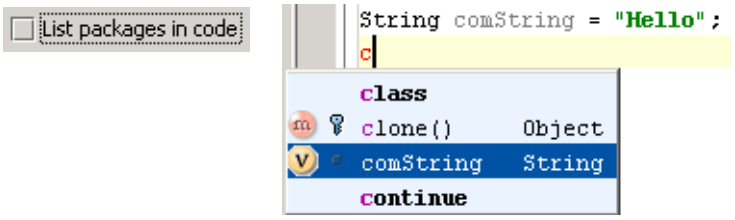


Figure 7.20. No packages in code (833,834)

8.1.5.4. Show signature

The signature can be optionally shown

- **8.1.5.4.1. In popup (page 177)**
- **8.1.5.4.2. In '()' (page 177)**

8.1.5.4.1. In popup

7.71. Check the checkbox **Show signatures**.
7.72. In the editor: Add the following:

```
String aString = "Hello";
aString.c
```

7.73. Place the cursor at the end of "c".
7.74. Press **CTRL-SPACE**. A popup appears that includes the signatures.

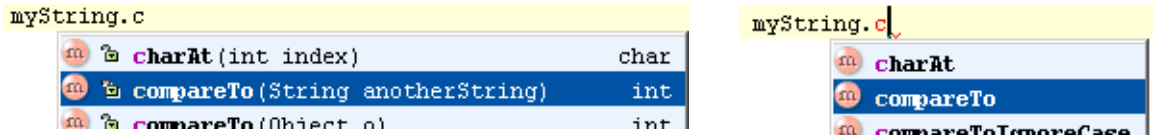


Figure 7.21. With / without signature in popup (850,857)

8.1.5.4.2. In '()'

IDEA can show the signature within '()' with the following variations

- **8.1.5.4.2.1. Manual CTRL-P (page 177)**
- **8.1.5.4.2.2. Autopopup (ms) (page 177)**
- **8.1.5.4.2.3. Full (page 178)**

8.1.5.4.2.1. Manual CTRL-P

The signature can be displayed manually with CTRL-P.

7.75. In the editor: Add the following:

```
String aString = "Hello";
aString.compareTo()
```

7.76. Place the cursor at the end of "compareTo(".
7.77. Press **CTRL-P**. A popup appears with a suggestion that includes signatures.

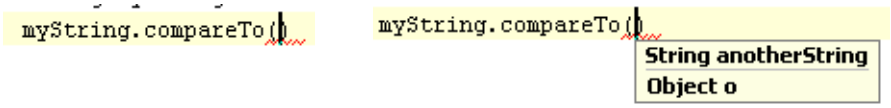


Figure 7.22. CTRL-P signature (851,852)

8.1.5.4.2.2. Autopopup (ms)

7.78. Check the checkbox **Autopopup in ms**.
7.79. In the editor: Add the following:

```
String aString = "Hello";
aString.c
```

7.80. Place the cursor at the end of "c".
7.81. Click **CTRL-SPACE**.
7.82. Double-click on **compareTo(String anotherString)**. The caret is placed between '()'. After 1 sec the popup appears.

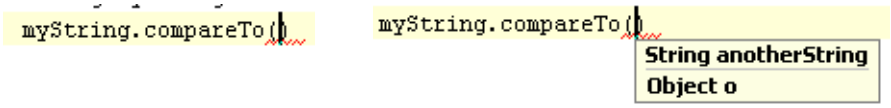


Figure 7.23. Signature autopopup (851,852)

8.1.5.4.2.3. Full

7.83. Check the checkbox **Show full signatures**.
7.84. In the editor: Add the following:

```
String aString = "Hello";
aString.compareTo()
```

7.85. Place the cursor at the end of “compareTo(”.
7.86. Press **CTRL-P**. A popup appears with suggestions that include full signatures.

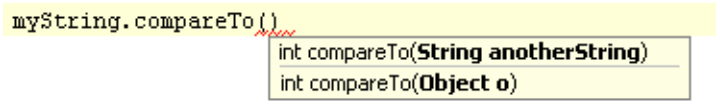


Figure 7.24. Full signatures (853)

8.1.5.5. Show javadoc

7.87. Check the checkbox **Autopopup javadoc in (ms)**.
7.88. In the editor: Add the following:

```
String aString = "Hello";
aString.c
```

7.89. Place the cursor at the end of “aString.c”.
7.90. Press **CTRL-SPACE**. A popup appears with suggestions.
7.91. After 1 sec the Java doc for the highlighted suggestion is displayed.
7.92. Click the **DOWN** arrow key. The following occurs:

- Java doc disappears
- The next suggestion is selected
- After 1 sec the javadoc for the selected suggestion appears.

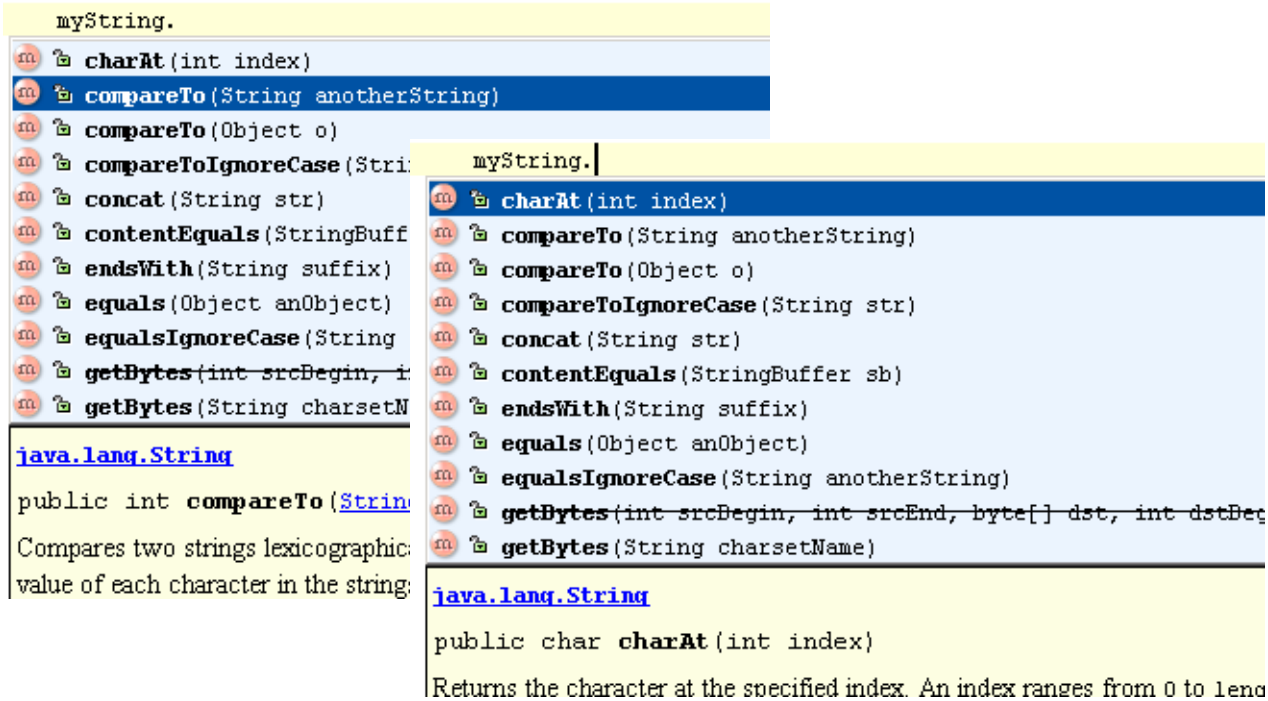


Figure 7.25. Autopopup of JavaDoc for suggestion (854,855)

8.2. Code-completion OLD XXX

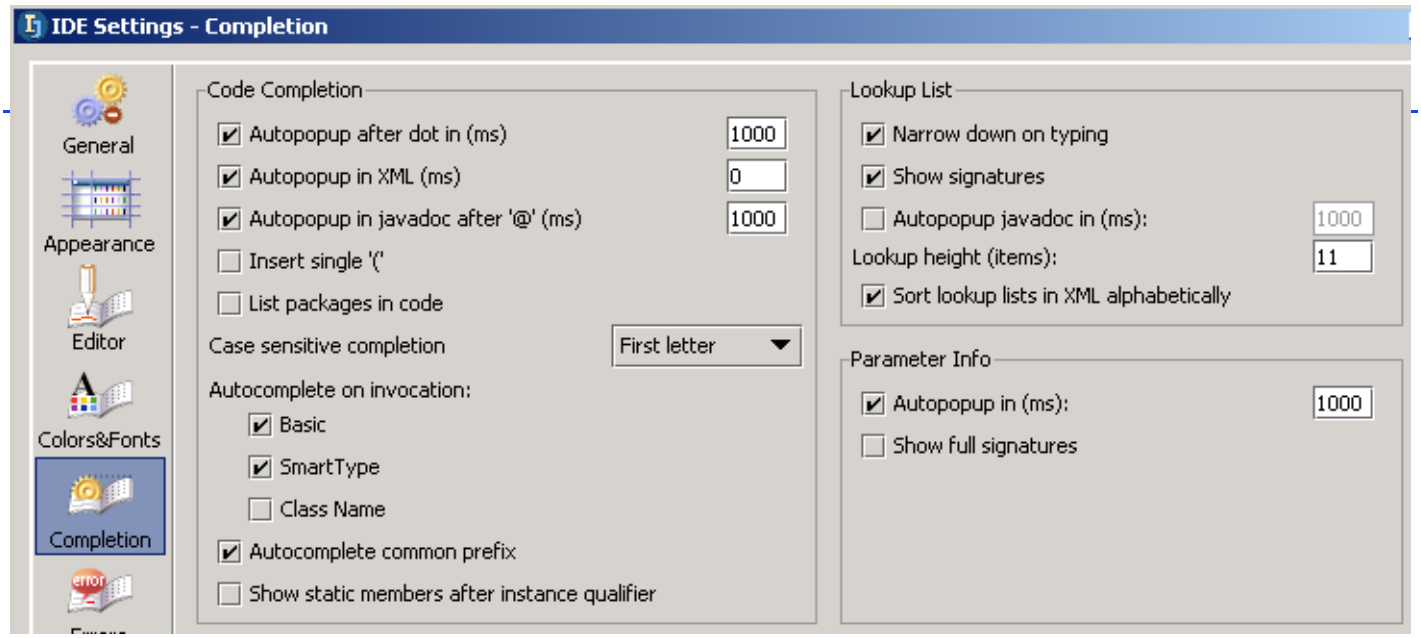


Figure 7.26. Completion (812)

8.2.1. Code completion X

helptopic idea\preferences\editor\codeCompletion.html

IDEA provides the following functions for automatically completing code:

8.2.1.1. Autopopup after dot

Determines if and after what delay an autopopup will appear after a period has been typed at the end of a declaration (assuming that the cursor does not move and nothing else is typed in after the dot).

7.93. Open **IDEA Settings | Completion**.
7.94. Check the checkbox **Autopopup after dot in (ms)**.
7.95. For the value enter **5000** (5 secs).
7.96. Click **OK**.
7.97. In the editor: Enter "**System.out.**". Note that after 5 seconds an autopopup appears.

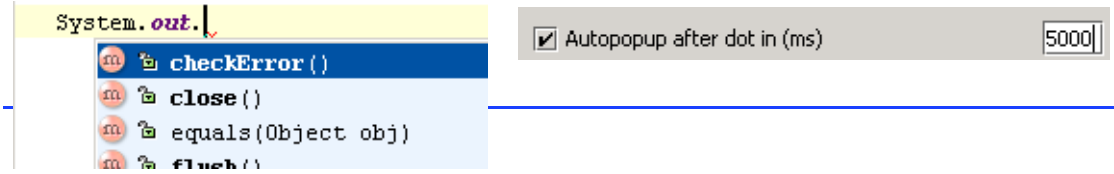


Figure 7.27. Autopopup (824,823)

7.98. Open **IDEA Settings | Completion**.
7.99. Uncheck the checkbox.
7.100. Click **OK**.
7.101. Again in the editor: Enter "**System.out.**". Note that the popup does not appear.
7.102. Click **CTRL SPACE**. The popup appears.
7.103. Open **IDEA Settings | Completion**.
7.104. Check the checkbox.
7.105. For the value enter **1000** (1 sec).
7.106. Click **OK**.

8.2.1.2. Autopopup in XML X

20021015TTT ?? example of this??

Similar to "Autopop after dot", but for XML files.

8.2.1.3. Autopopup in javadoc after '@'

Similar to "Autopopup after dot", but for popups after the javadoc '@'.

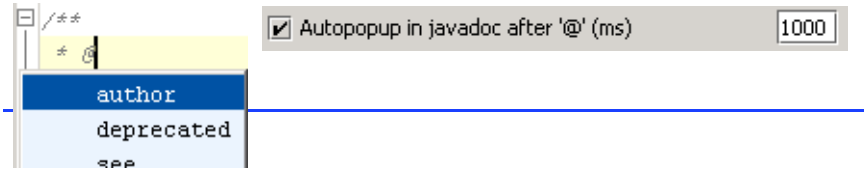


Figure 7.28. Autopopup in javadoc after '@' (826,825)

8.2.1.4. Insert single ')'

7.107. Open **IDEA Settings | Completion**.
7.108. Check the checkbox **Insert single ')'**.
7.109. Click **OK**.
7.110. In the editor: Add the following:

```
String aString = "Hello";
aString.getBytes
```

7.111. Place the cursor at the end of "getBytes".
7.112. Press **CTRL SPACE**. A single ')' appears.

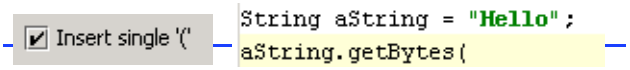


Figure 7.29. Insert single ')' (827,828)

7.113. Delete the single ')'.
7.114. Open **IDEA Settings | Completion**.
7.115. Uncheck the checkbox **Insert single ')'**.
7.116. Click **OK**.
7.117. Place the cursor at the end of "getBytes".
7.118. Press **CTRL SPACE**. '( )' appears.

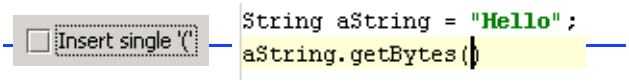


Figure 7.30. Insert '()' (829,830)

8.2.1.5. List packages in code

7.119. Open **IDEA Settings | Completion**.
7.120. Check the checkbox **List packages in code**.
7.121. Click **OK**.
7.122. In the editor: Add the following:

```
String comString = "Hello";
c
```

7.123. Place the cursor at the end of "c".
7.124. Press **CTRL-SPACE**. A popup appears that includes packages.

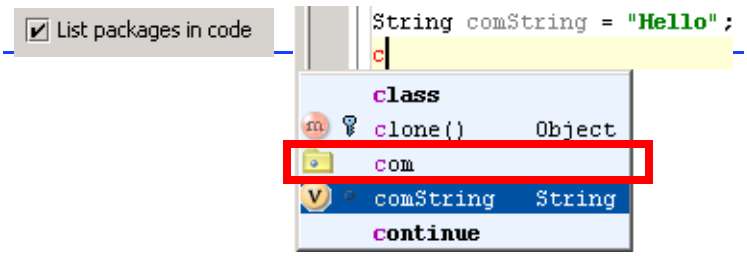


Figure 7.31. List packages in code (832,831)

7.125. Open **IDEA Settings | Completion**.
7.126. Uncheck the checkbox **List packages in code**.
7.127. Click **OK**.
7.128. Place the cursor at the end of "c".
7.129. Press **CTRL-SPACE**. A popup appears that does not include packages.

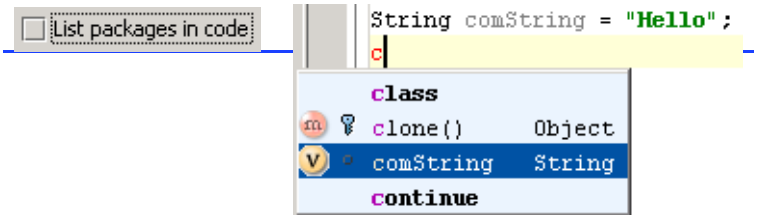


Figure 7.32. No packages in code (833,834)

8.2.1.6. Case sensitive completion

You can set the case sensitivity of IDEA to one of the following:

- 8.2.1.6.1. None (page 181)
- 8.2.1.6.2. First letter (page 182)
- 8.2.1.6.3. All (page 182)

8.2.1.6.1. None

7.130. Open **IDEA Settings | Completion**.
7.131. For "Case sensitive completion" select **None**.
7.132. Uncheck the 3 checkboxes for "Autocomplete on invocation".
7.133. Click **OK**.
7.134. Create Class2 with the following content:

```
package MyPackage;
public static class MyClass2 {
    static int ABCDEF = 1;
```

```
    static int Abcdef = 1;
    static void abcdef(){};
    MyClass2.AB
}
```

7.135. Place the cursor at the end of “MyClass2.AB”.
7.136. Press **CTRL-SPACE**. A popup appears with all 3 options.

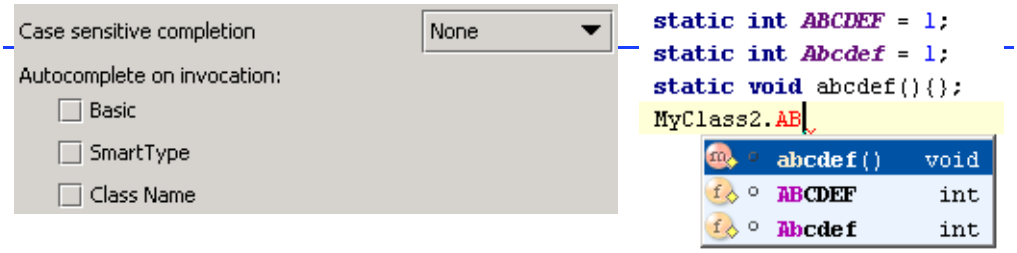


Figure 7.33. Case sensitive completion: None (835,836)

8.2.1.6.2. First letter

7.137. Open **IDEA Settings | Completion**.
7.138. For “Case sensitive completion” select **First letter**.
7.139. Click **OK**.
7.140. Place the cursor at the end of “MyClass2.AB”.
7.141. Press **CTRL-SPACE**. A popup appears with 2 options.

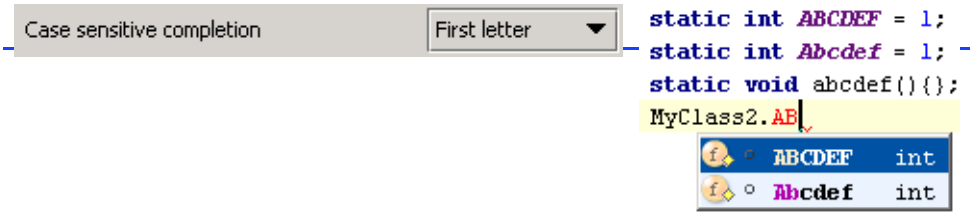


Figure 7.34. Case sensitive completion: First letter (837,838)

8.2.1.6.3. All

7.142. Open **IDEA Settings | Completion**.
7.143. For “Case sensitive completion” select **All**.
7.144. Click **OK**.
7.145. Place the cursor at the end of “MyClass2.AB”.
7.146. Press **CTRL-SPACE**. A popup appears with 1 option.

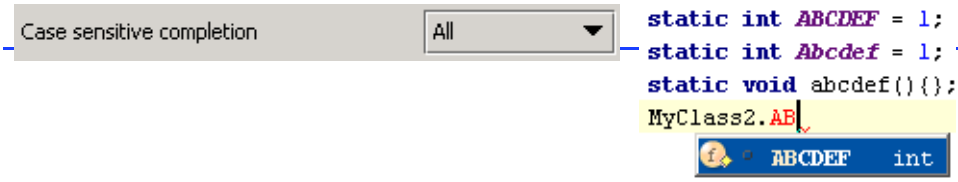


Figure 7.35. Case sensitive completion: All (839,840)

8.2.1.7. Autocompletion on invocation XXX

8.2.1.7.1. Basic XXX

~~8.2.1.7.2. SmartType XXX~~

~~8.2.1.7.3. Class Name XXX~~

~~8.2.1.8. Autocomplete common prefix XXX~~

~~8.2.1.9. Show static member after instance qualifier XXX~~

~~8.2.2. Lookup list XXX~~

~~8.2.2.1. Narrow done on typing XXX~~

~~8.2.2.2. Show signatures XXX~~

~~8.2.2.3. Autopopup javadoc in XXX~~

~~8.2.2.4. Lookup height (items) XXX~~

~~8.2.2.5. Sort lookup lists in XML alphabetically XXX~~

~~8.2.3. Parameter info XXX~~

~~8.2.3.1. Autopopup in XXX~~

~~8.2.3.2. Show full signatures XXX~~

8.3. Code templates

IDEA provides the following code template functionality

8.3.1. Live Templates

There are many different

8.3.1.1. Type of insert

The following types of live templates are available:

8.3.1.1.1. Plain text

7.147. Create class **Class1**:

```
public class Class1 {
    public static void main(String[] args) {

    }
}
```

7.148. Place the cursor inside main().
7.149. Enter **St**.
7.150. Click **TAB**. Note that the live template code is added.

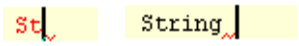


Figure 7.36. Insert plain text live template (870,871)

Note: You can also enter the code by selecting **Code | Insert live template**. A list of live templates appears in a popup dialog. Double-clicking on a selection will add it.

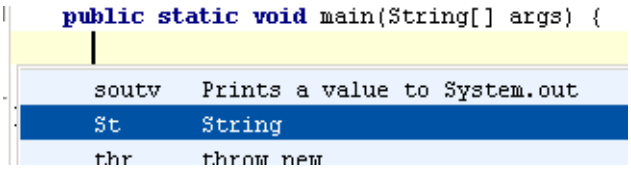


Figure 7.37. Insert using list (872)

8.3.1.1.2. With variables

7.151. Create class **Class1**:

```
public class Class1 {
    public static void main(String[] args) {

    }
}
```

7.152. Add live template **sout**. Note the final location of the cursor.

```
System.out.println("");
```

Figure 7.38. Final location of cursor (873)

7.153. Select **Options | Live templates...**. The dialog “Live templates” appears.

7.154. Select **sout**. Note the variable “**END**”. This specifies the location of the cursor after the live template has been entered.

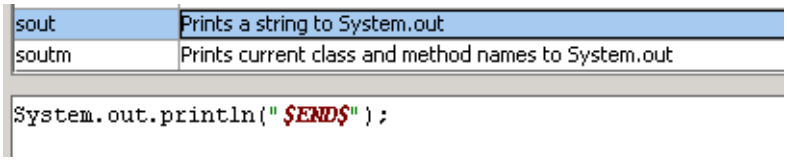


Figure 7.39. END variable (874)

7.155. Insert live template **itar**. An iteration is inserted.

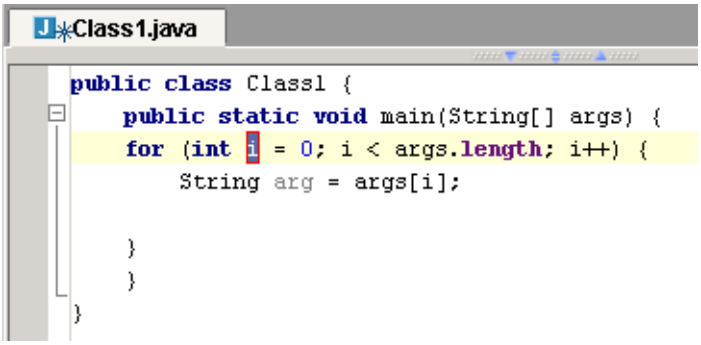


Figure 7.40. Inserted iteration (352)

7.156. Press the **j** key. Note that the iteration variable is changed.

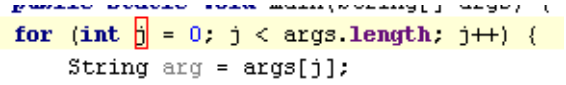


Figure 7.41. Changed iteration variable (351)

7.157. Click the **Tab** key. Note that the red square (the focus) has move to “args”.

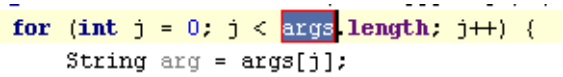


Figure 7.42. Focus moved (350)

The variable definitions explain the above behavior.

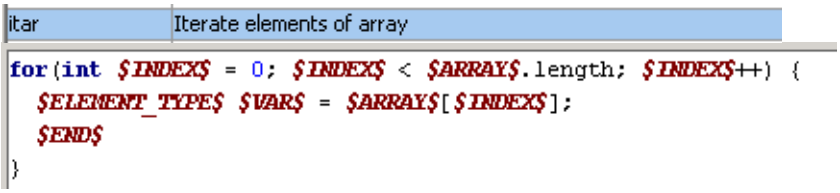


Figure 7.43. itar variables (876,875)

8.3.1.1.3. Surround

7.158. Select the contents of main

7.159. Select **Code | Surround with live template**. A list of surround live templates appears in a popup dialog.

7.160. Click on **B: Surround with {}**. The code is surrounded.

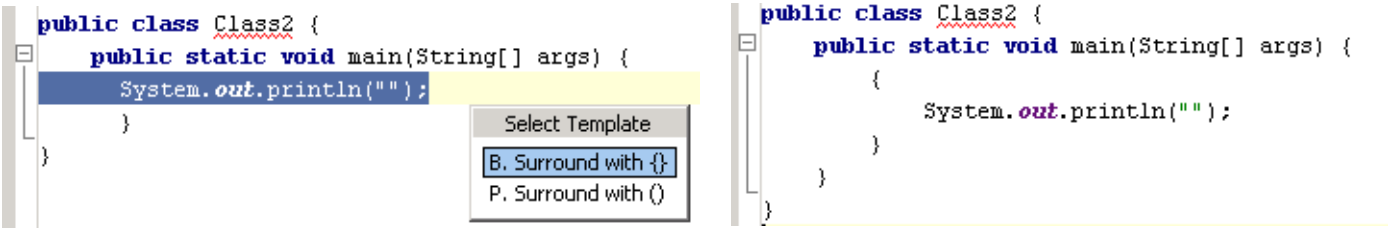


Figure 7.44. Surround with {} (877,878)

8.3.1.2. Context

The context determines how the live template can be used. The following contexts are supported:

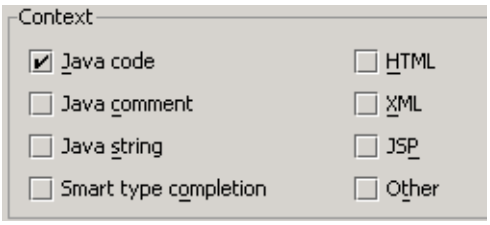


Figure 7.45. Contexts (879)

8.3.1.2.1. Java code

If this context is selected, then the live template can be inserted into java code. In the examples above, you added live templates to java code.

7.161. Add **<** to the code.
7.162. Click **TAB**. The live template is not entered since this template is only supported in HTML, XML, and JSP files.

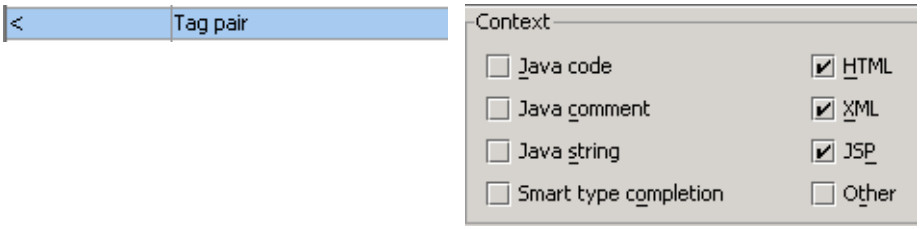


Figure 7.46. Tag pair contexts (880,881)

8.3.1.2.2. Java comment

If this context is selected, then the live template can be inserted into java comments.

7.163. For Tag pair: Check content **Java comment**.
7.164. Add **<** to the code comment.
7.165. Click **TAB**. The live template is entered.

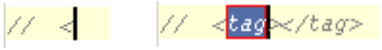


Figure 7.47. Tag pair in comments (882,883)

8.3.1.2.3. Java String

If this context is selected, then the live template can be inserted into java strings.

7.166. For Tag pair: Check content **Java string**.
7.167. Add **<** to the string in System.out.println.
7.168. Click **TAB**. The live template is entered.

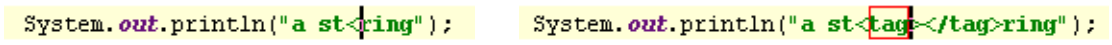


Figure 7.48. Tag pair in a string (884,885)

8.3.1.2.4. Smart type completion

If this context is selected, then the live template will be listed in a Smart type completion.

7.169. Add the following:

```
String s = "";
s.compareTo()
```

7.170. Place the cursor between '()'.

7.171. Click **CTRL-SHIFT-SPACE**. A list of the Smart type completions appear. Note the live templates (all of which have the checkbox "Smarttype completion" checked.

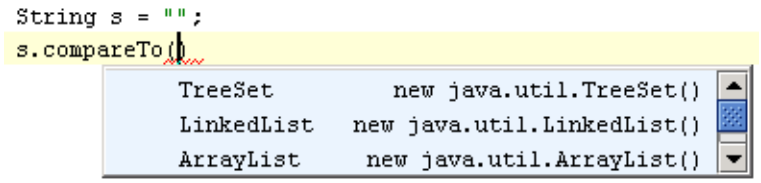


Figure 7.49. Smart type completion (886)

8.3.1.2.5. HTML

If this context is selected, then the live template can be inserted into HTML files.

7.172. Add the **<** live template to an HTML file.

Figure 7.50. Live template < in HTML file (859,860,861)

8.3.1.2.6. XML

If this context is selected, then the live template can be inserted into XML files.

8.3.1.2.7. JSP

If this context is selected, then the live template can be inserted into JSP files.

8.3.1.2.8. Other

20021017TTT what is this used for ??

If this context is selected, then the live template can be inserted into other types of files.

8.3.1.3. Edit / Add / Remove

The following functions are available for managing live templates:

- 8.3.1.3.1. Edit (page 189)
- 8.3.1.3.2. Add / Copy (page 190)
- 8.3.1.3.3. Remove (page 190)

8.3.1.3.1. Edit

7.173. Select **Options | Live templates...**. The dialog “Live templates” appears.
7.174. Double-click on **soutm**. The dialog “Edit Live Template” appears.

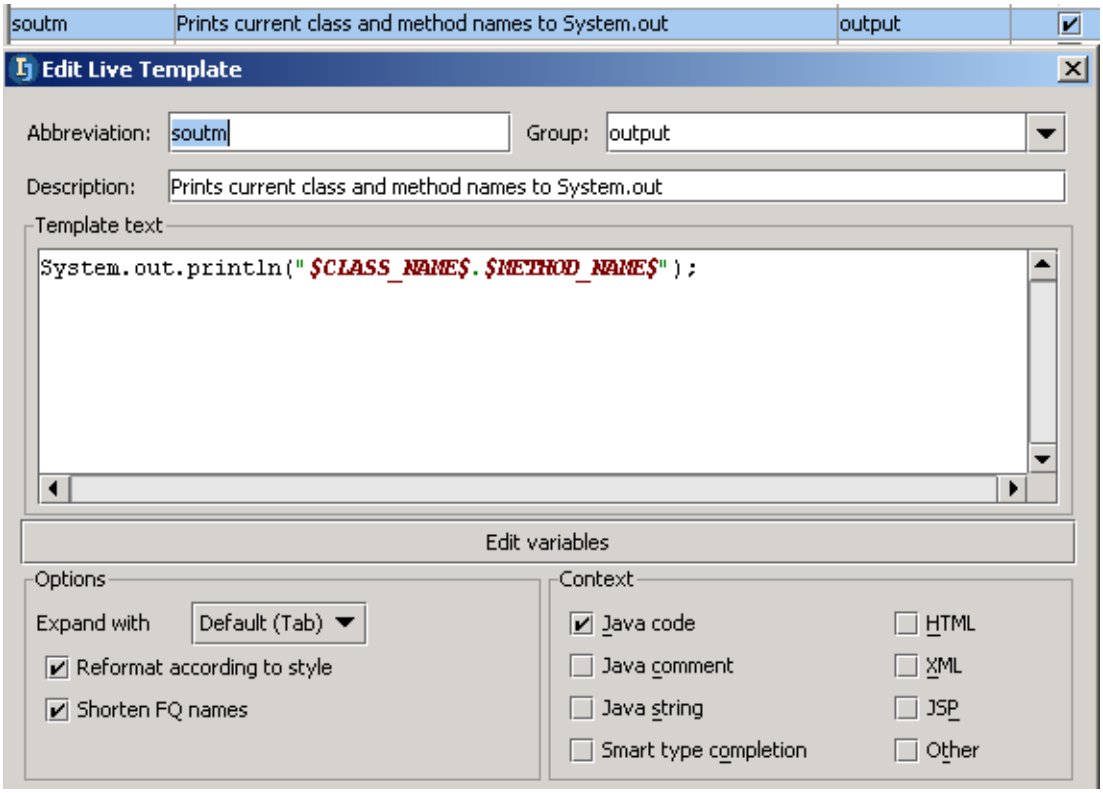


Figure 7.51. Edit live template for soutm (887)

Note the following properties.

Abbreviation

The abbreviation appears in dialogs and is used to insert the live template using {abbreviation}+TAB.

Group

The group is used to organize live templates in the “Live Templates” dialog.

Description

Description of the live template.

Template text

The code that is inserted. The code can contain variables.

Edit variables

Click to open the dialog “Edit template variables”.

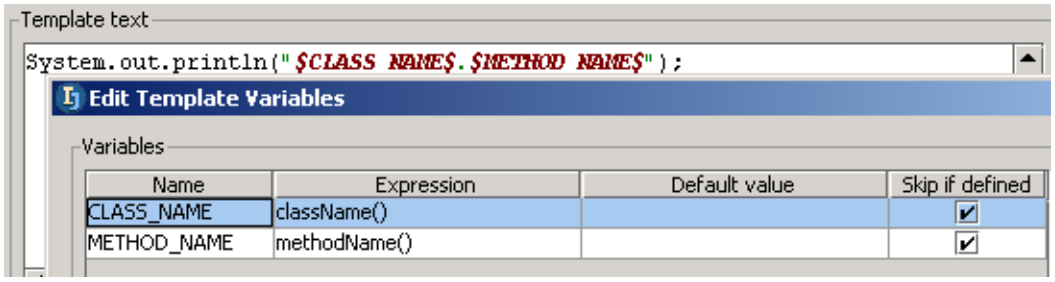


Figure 7.52. Edit template variables (888)

20021017TTT what are these used for ??

Name

Name of the variable.

Expression

Variable expression

Default value

The default value.

Skip if defined

Skip if defined if checked.

Expand with

Specifies the key that is pressed after the live template abbreviation in order to add the template.

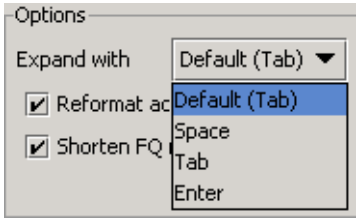


Figure 7.53. Expand with options (889)

Reformat according to style

If checked: Reformat according to style.

Shorten FQ names

If checked: FQ names are shortened.

Context

Check to enable the live templates in contexts (demonstrated earlier).

8.3.1.3.2. Add / Copy

Click **Add** to open an empty “Edit Live Template” dialog.

Click **Copy** to open a copy of the selected live template in the “Edit Live Template” dialog.

8.3.1.3.3. Remove

Click **Remove** to remove the selected template.

8.3.2. Surround with

7.175. Create class **Class1**:

```
public class Class1 {
    public void aMethod() {
        System.out.println("Hello");
    }
}
```

7.176. Place the caret in “System.out....”.

7.177. Select **Code | Surround with...**. A popup dialog appears.

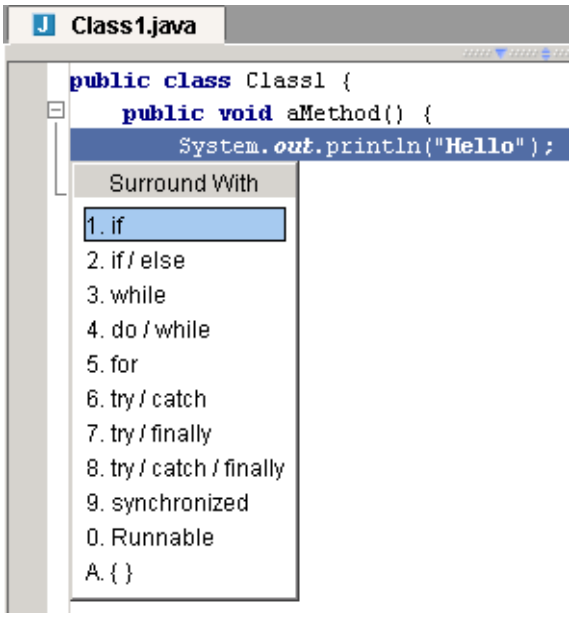


Figure 7.54. Dialog “Surround with” (361)

7.178. Select **If**. The line is surrounded with an “if” clause.

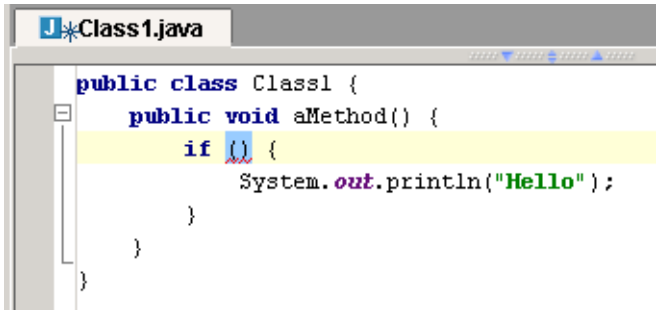


Figure 7.55. Surrounded with an “if” clause (360)

8.4. Code generation

IDEA can automatically generate some types of code (such as getter and setter methods).

7.179. Create class **Class1**:

```
public class Class1 {
    int int1;
    int int2;
}
```

7.180. Select **Code | Generated...**. A popup dialog appears.

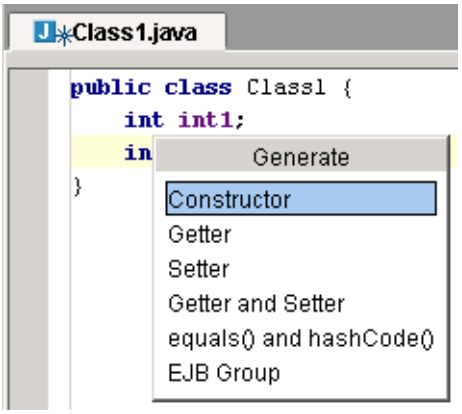


Figure 7.56. Popup “Generarte” (359)

7.181. Select **Constructor**. The dialog “Choose field to initialize by constructor” appears.

7.182. Select both **int1** and **int2** (using CTRL key).

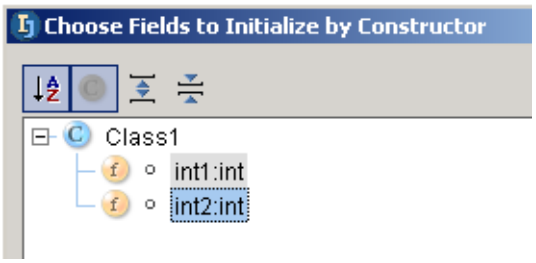


Figure 7.57. Dialog “Choose field to initialize by constructor” (358)

7.183. Click **OK**. The constructor is generated.

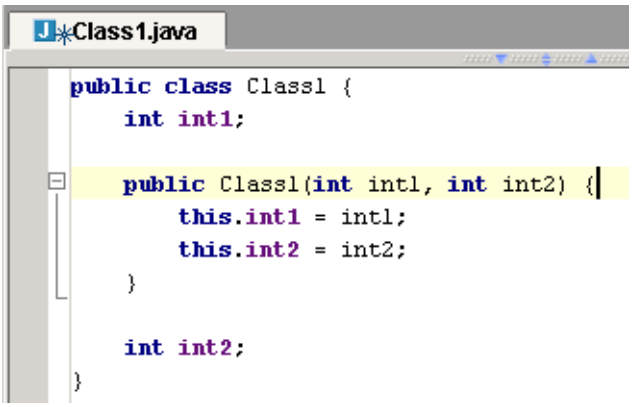


Figure 7.58. Generated constructor (357)

8.5. Import optimization

IDEA can optimize imports for

8.5.1. File

7.184. Create class **MyClass2**:

```
import java.util.*;
import com.sun.*;
package MyPackage
public class MyClass2 {}
```

7.185. Select **Tools | Optimize imports...**. The dialog “Optimize imports” appears.

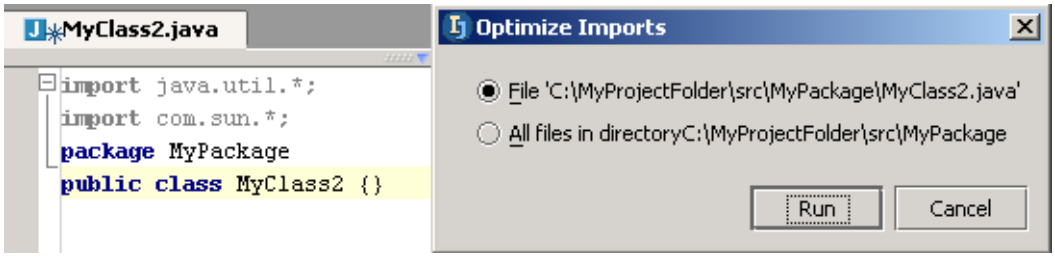


Figure 7.59. Dialog “Optimize imports” (339)

7.186. Select **Run**. Imports are optimized.

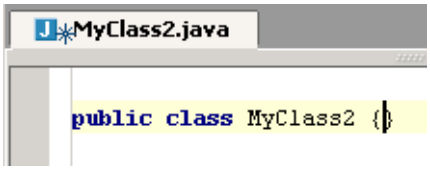


Figure 7.60. Optimized imports (338)

8.5.2. Files in directory

In the dialog “Optimize Imports”: Select **All files in directory...** to optimize the imports for all files in the directory.

8.6. Method override

IDEA makes it easy to override methods.

7.187. Create class **MyClass**:

```
package MyPackage;
public class MyClass {}
```

7.188. Place the cursor on the line “public...”.

7.189. Select **Code | Override methods**. The dialog “Select methods to override” appears.

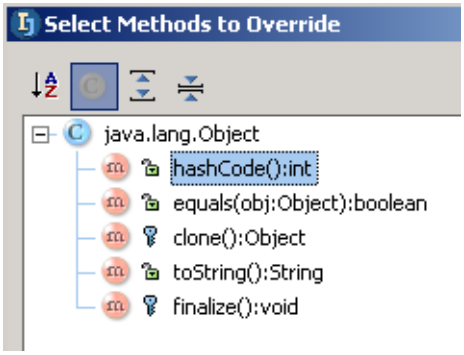


Figure 7.61. Override methods (453)

7.190. Double-click on **toString**. The code to override the method is added:

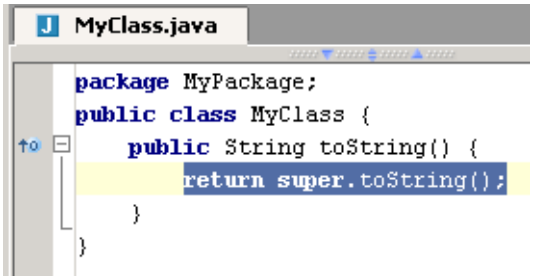


Figure 7.62. Overridden method toString() (452)

7.191. Place the cursor on the overriden method icon ( ). Note the message that appears:

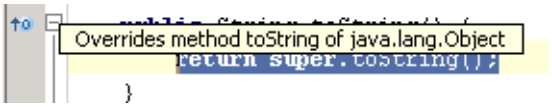


Figure 7.63. Overridden method message (451)

7.192. Click on the icon. The source file for the overriden method is opened.

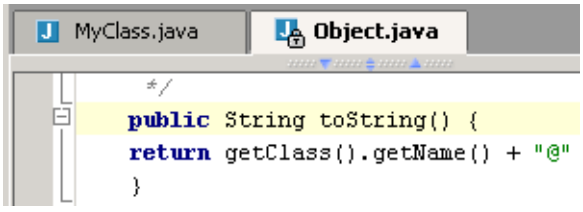


Figure 7.64. Overridden method (450)

7.193. Create class **MyClass2**:

```
package MyPackage;
public class MyClass2 extends MyClass {}
```

7.194. Place the cursor on the line “public...”.

7.195. Select **Code | Override methods**. The dialog “Select methods to override” appears. Note that the methods for all superclasses are shown.

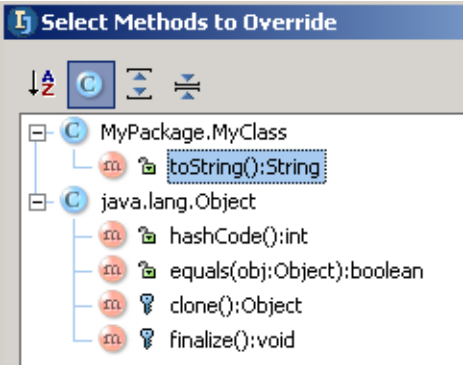


Figure 7.65. Override methods (448)

8.7. Interface implementation

IDEA makes it easy to implement interfaces.

7.196. Create class **Interface1**:

```
public interface Interface1 {
  void doSomething();
}
```

7.197. Create class **ImplementInterface1**:

```
public class ImplementInterface1 implements Interface1 {
}
```

7.198. Place the caret with “Class1” after “new”.

7.199. Select **Code | Implement methods**. The dialog “Select methods to implement” appears.

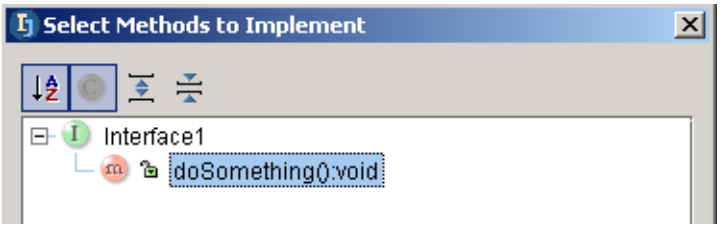


Figure 7.66. Dialog “Select methods to implement” (366)

7.200. Select **doSomething():void**.

7.201. Click **OK**. The method is implemented.

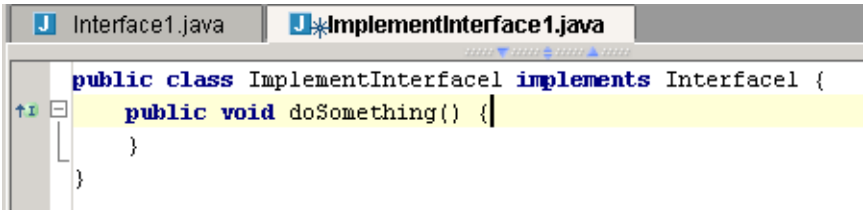


Figure 7.67. Method implemented (365)

8.8. Method delegation

IDEA makes it easy to delegate methods.

7.202. Create class **Class1**:

```
public class Class1 {
    public Class2 c2;
    public Class3 c3;
}
```

7.203. Create class **Class2**:

```
public class Class2 {
    public void method2a() {}
    public void method2b() {}
 }
```

7.204. Create class **Class3**:

```
public class Class3 {
  public void method3() {}
}
```

7.205. Place the caret in Class1.

7.206. Select **Code | Delegate methods**. The dialog “Select target to generate delegates for” appears.

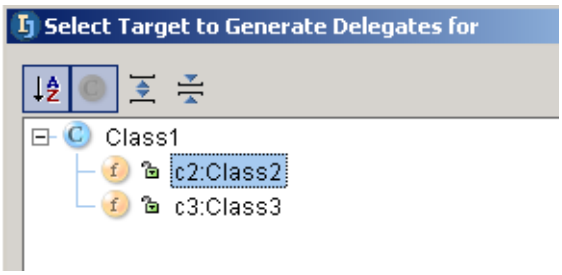


Figure 7.68. Dialog “Select target to generate delegates for” (364)

7.207. Select **c2:Class2**. The dialog “Select methods to generate delegates for” appears.

7.208. Select both **c2** and **c3** (using CTRL key).

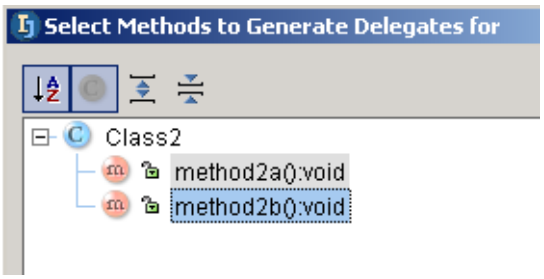


Figure 7.69. Dialog “Select methods to generate delegates for” (363)

7.209. Click **OK**. The delegates are generated.

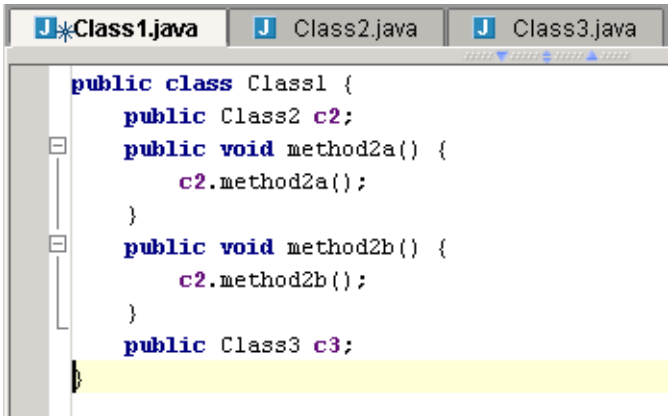


Figure 7.70. Delegates generated (362)

8.9. Comment

IDEA makes it easy to comment out code.

7.210. Create class **Class1**:

```
public class Class1 {
  String s1 = "line 1";
  String s2 = "line 2";
  String s3 = "line 3";
}
```

7.211. Place the cursor on a line.

7.212. Select **Code | Comment with line comment.**. The line is commented.

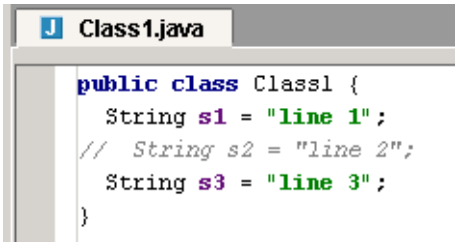


Figure 7.71. Line comment (356)

7.213. Select a portion of the code.

7.214. Select **Code | Comment with block comment.**. The block is commented.

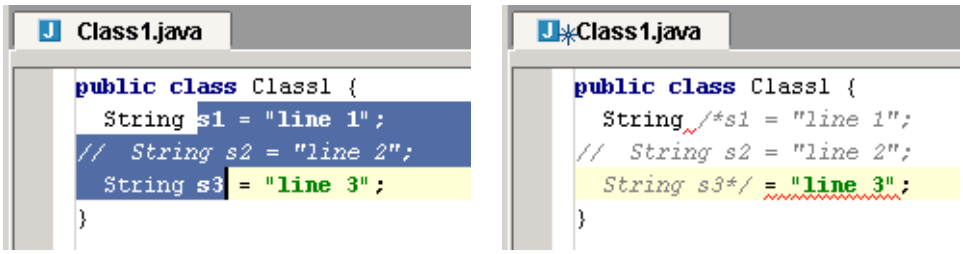


Figure 7.72. Block comment (355,354)

9. Code Refactoring

20021022TTT last update.

Consult dima, valya.

The following refactoring operations are supported:

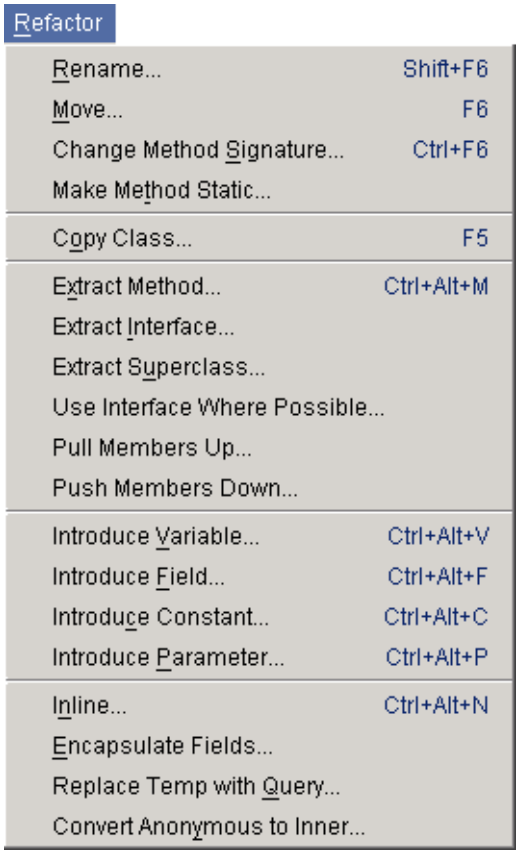


Figure 8.1. Refactoring menu items (414)

9.1. Migration XXX

9.1.1. Migrate

9.1.2. Create map

9.2. Rename

IDEA refactoring allows you rename a

9.2.1. Package

8.1. Create class MyClass:

```
package MyPackage;
import MyPackage2.MyClass2;
public class MyClass {
  static int field1 = 1;
  static int field2;
  public static void main(String[] args) {
    MyClass2 mc2 = new MyClass2();
    field2 = mc2.method2(field1);
    System.out.println(field2);
  }
}
```

8.2. Create class MyClass2:

```
package MyPackage2;
public class MyClass2 {
  public int method2(int param2) {
    int var2 = 2;
    return var2 + param2;
  }
}
```

8.3. Right-click on **MyPackage**.
8.4. Select **Refactor | Rename**. The dialog “Rename” appears.
8.5. For the new name enter **MyPackageNEW**.

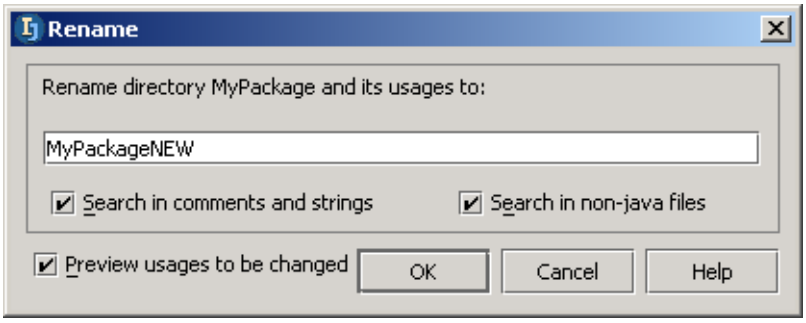


Figure 8.2. Dialog “Rename” (for package) (515)

8.6. Click **OK**. The panel “Find - Refactoring preview” appears.

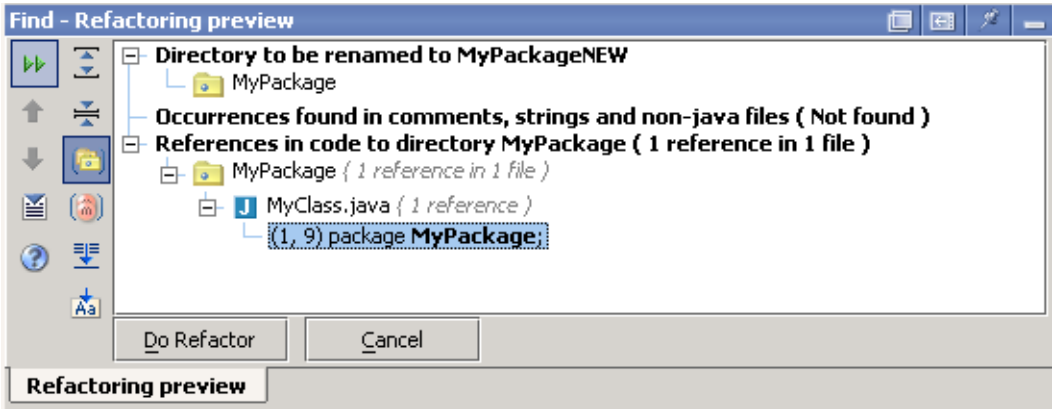


Figure 8.3. Panel “Find - Refactoring preview” (for package) (514)

8.7. Click on **Do Refactor**. The package is renamed.

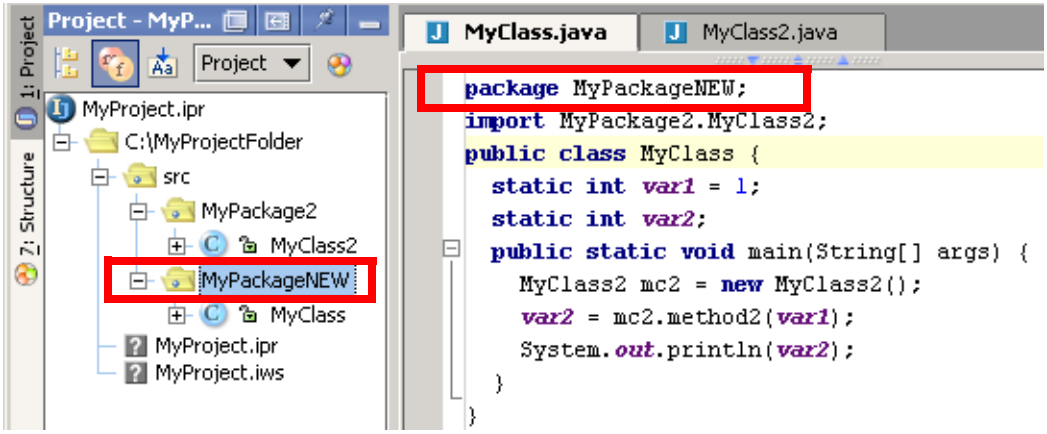


Figure 8.4. Renamed package (513)

9.2.2. Class

8.8. In the “Project” window: Right-click on **MyClass2**.
8.9. Select **Refactor | Rename**. The dialog “Rename” appears.
8.10. For the new name enter **MyClass2NEW**.

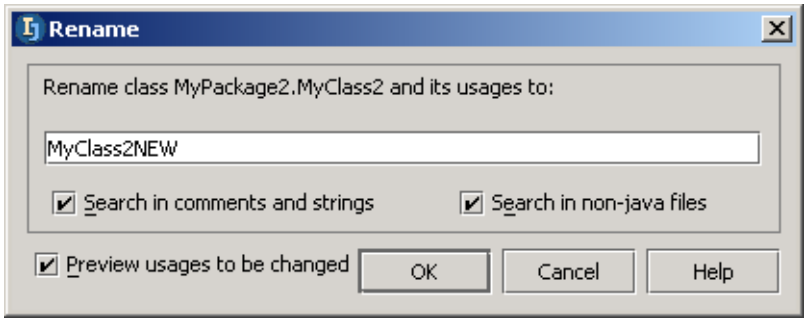


Figure 8.5. Dialog “Rename” (for class) (511)

8.11. Click **OK**. The panel “Find - Refactoring preview” appears.

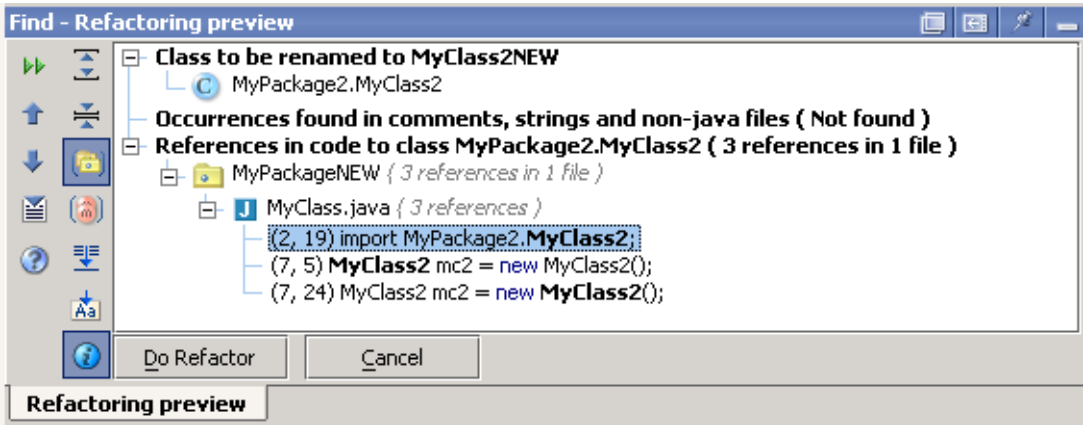


Figure 8.6. Panel “Find - Refactoring preview” (for class) (510)

8.12. Click on **Do Refactor**. The class is renamed.

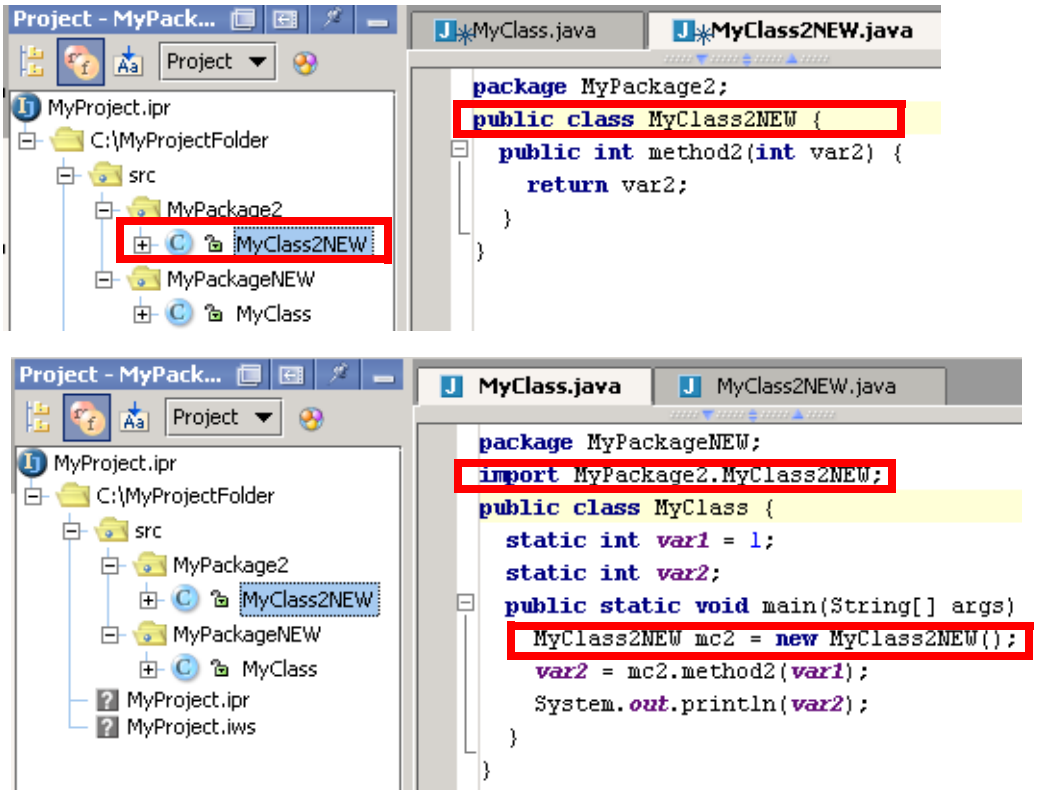


Figure 8.7. Renamed class (509,508)

9.2.3. Method

8.13. In MyClass2NEW: Place the cursor on the declaration of **method2**.
8.14. Right-click.
8.15. Select **Refactor | Rename**. The dialog “Rename” appears.
8.16. For the new name enter **method2NEW**.

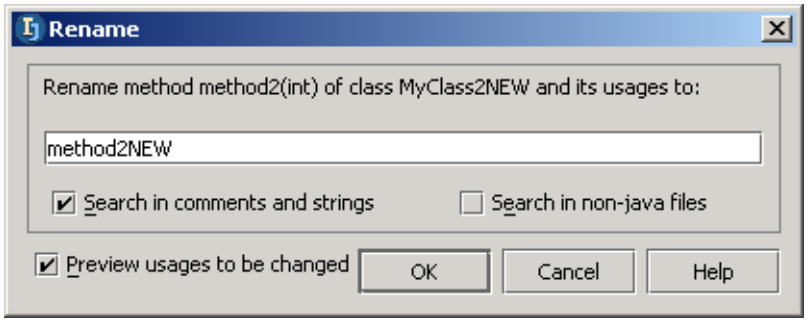


Figure 8.8. Dialog “Rename” (for method) (507)

8.17. Click **OK**. The panel “Find - Refactoring preview” appears.

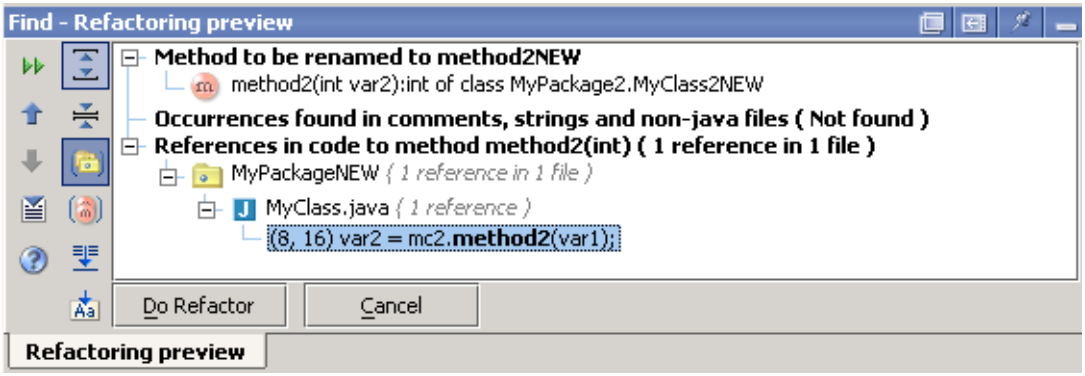


Figure 8.9. Panel “Find - Refactoring preview” (for method) (506)

8.18. Click on **Do Refactor**. The method is renamed.

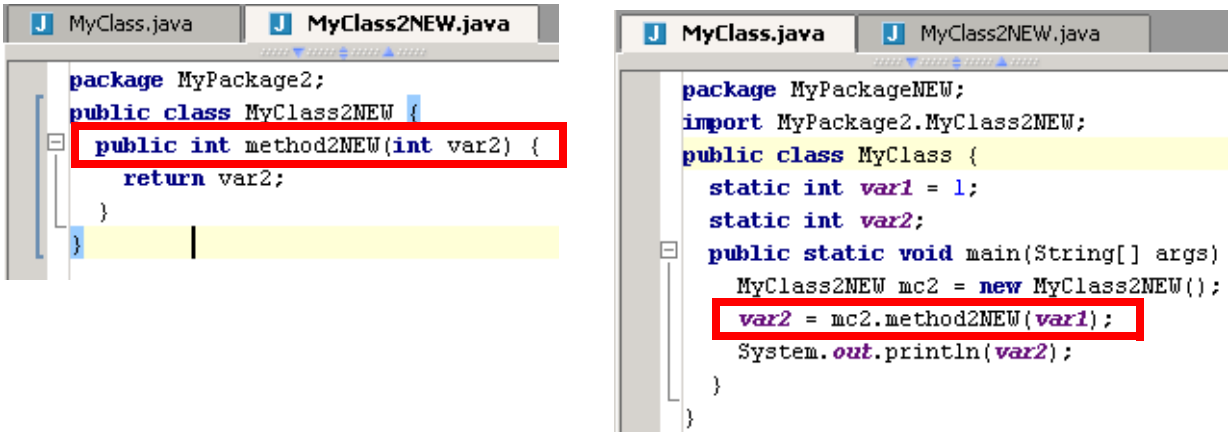


Figure 8.10. Renamed method (505,504)

9.2.4. Field

8.19. In the code for MyClass: Place the cursor on the declaration of **field1**.
8.20. Right-click.
8.21. Select **Refactor | Rename**. The dialog “Rename” appears.
8.22. For the new name enter **field1NEW**.

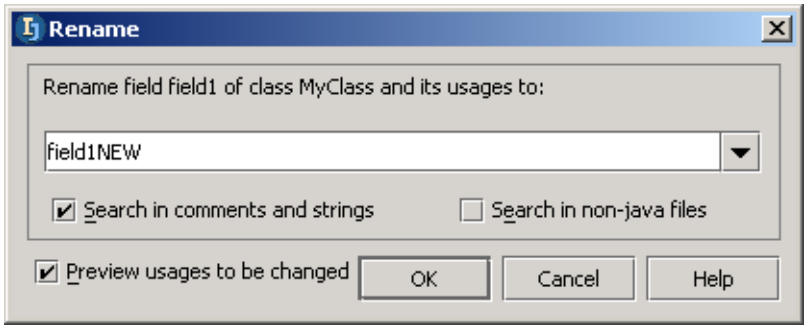


Figure 8.11. Dialog “Rename” (for field) (503)

8.23. Click **OK**. The panel “Find - Refactoring preview” appears.

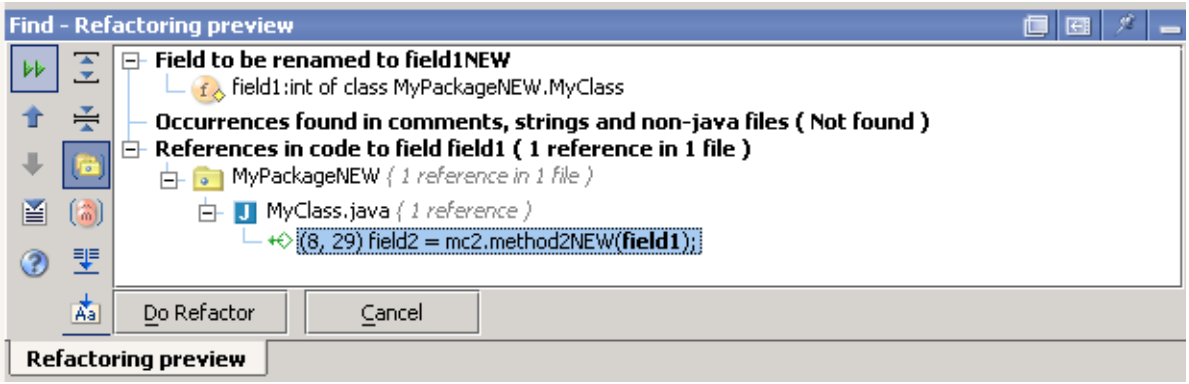


Figure 8.12. Panel “Find - Refactoring preview” (for field) (502)

8.24. Click on **Do Refactor**. The field is renamed.

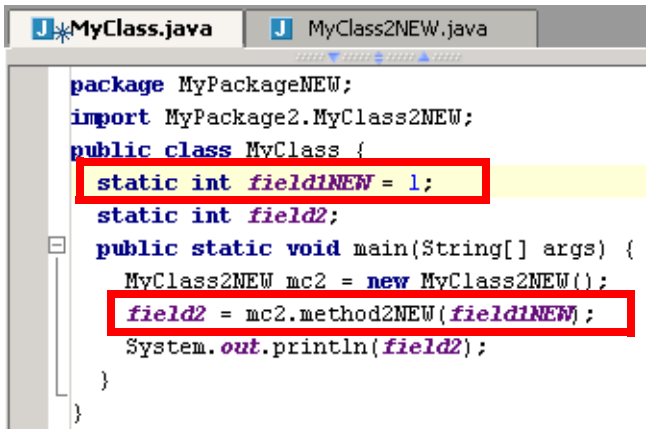


Figure 8.13. Renamed field (501)

9.2.5. Variable

8.25. In the code for MyClass2NEW: Place the cursor on the declaration of **var2**.
8.26. Right-click.
8.27. Select **Refactor | Rename**. The dialog “Rename” appears.
8.28. For the new name enter **var2NEW**.

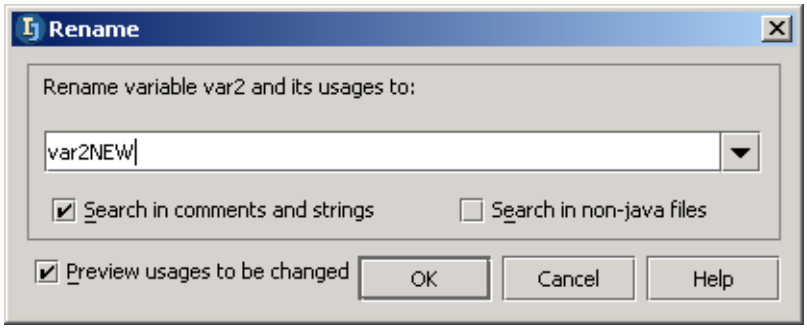


Figure 8.14. Dialog “Rename” (for variable) (918)

8.29. Click **OK**. The panel “Find - Refactoring preview” appears.

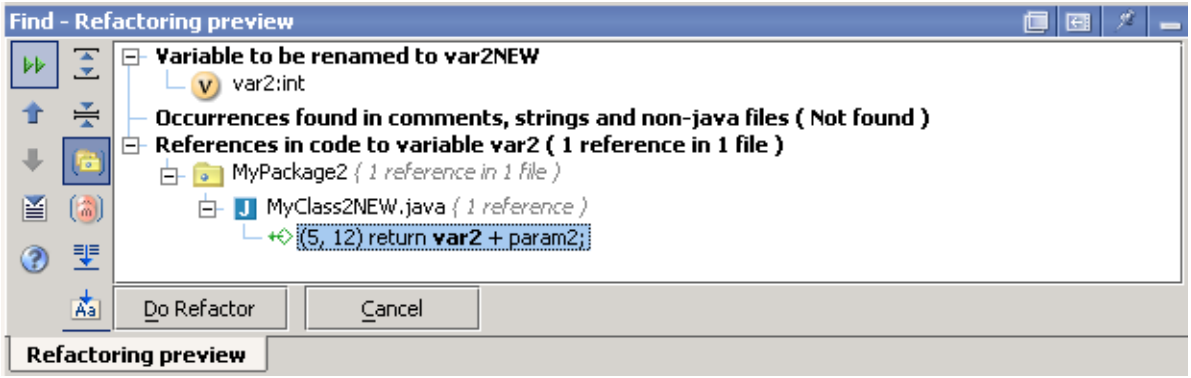


Figure 8.15. Panel “Find - Refactoring preview” (for field) (919)

8.30. Click on **Do Refactor**. The variable is renamed.

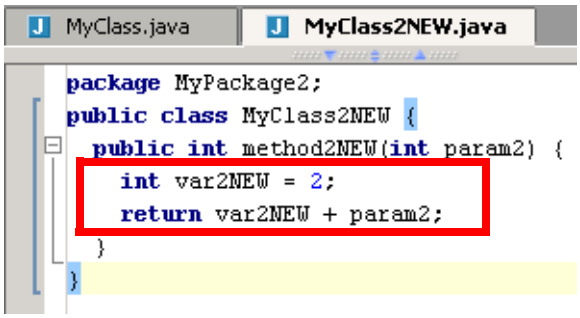


Figure 8.16. Renamed variable (920)

9.2.6. Parameter

8.31. In the code for MyClass2NEW: Place the cursor on **param2**.
8.32. Right-click.
8.33. Select **Refactor | Rename**. The dialog “Rename” appears.
8.34. For the new name enter **param2NEW**.

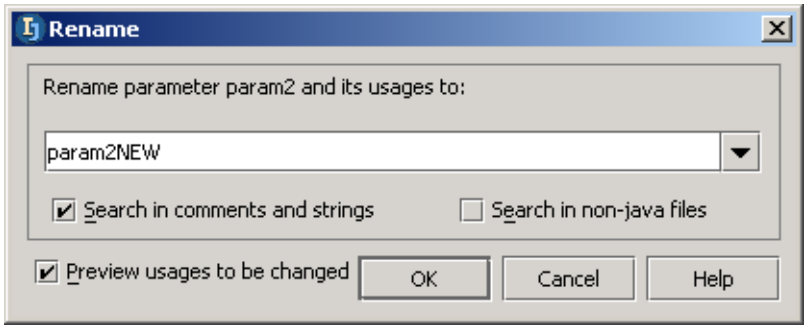


Figure 8.17. Dialog “Rename” (for parameter) (500)

8.35. Click **OK**. The panel “Find - Refactoring preview” appears.

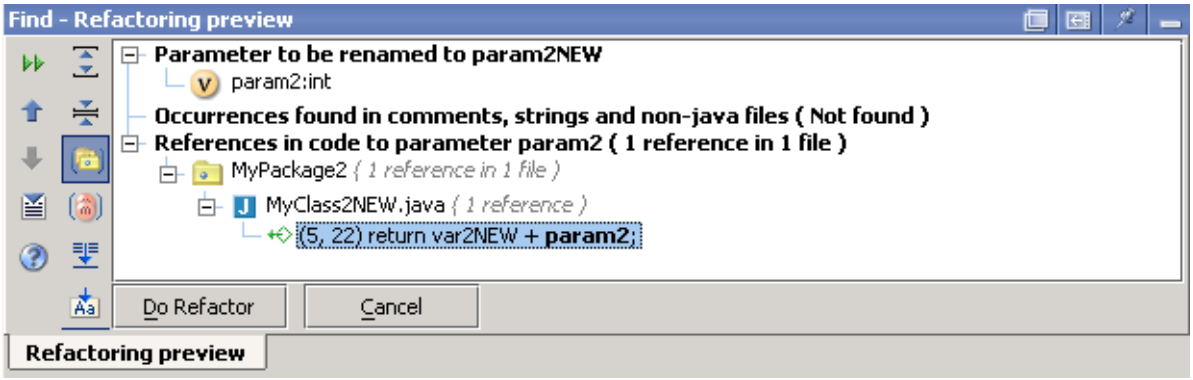


Figure 8.18. Panel “Find - Refactoring preview” (for parameter) (499)

8.36. Click on **Do Refactor**. The parameter is renamed.

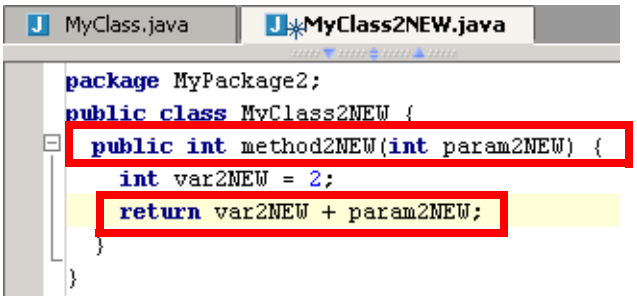


Figure 8.19. Renamed paramter (498)

9.3. Move

IDEA refactoring allows you move a

9.3.1. Package

8.37. Create class **MyClass**:

```
package MyPackage;
public class MyClass {}
```

8.38. Create class **MyClass2**:

```
package MyPackage2;
public class MyClass2 {
  public static void myMethod2A() {}
  public void myMethod2B() {
    myMethod2A();
  }
  public class MyInnerClass2 {
    public void myInnerClass2Method() {
      myMethod2A();
    }
  }
}
```

8.39. Right-click on **MyPackage2**.
8.40. Select **Refactor | Move**. The dialog “Move” appears.
8.41. For “To package:” enter **MyPackage**.

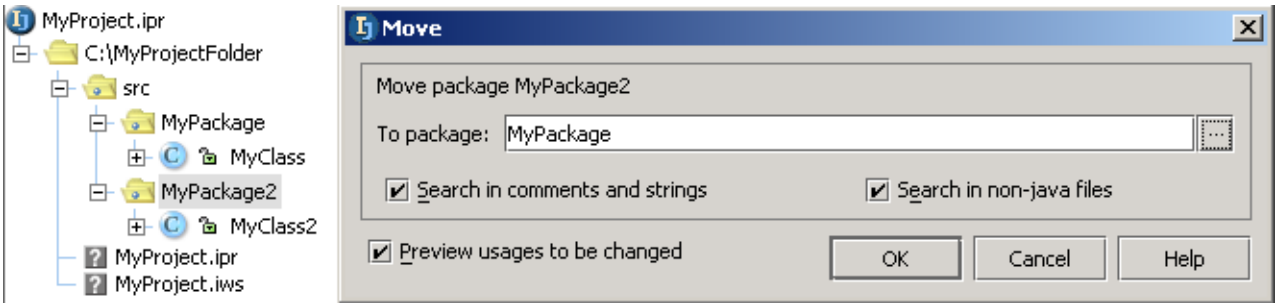


Figure 8.20. Move package dialog (380)

8.42. Click **OK**. The “Find - Refactoring preview” dialog appears.

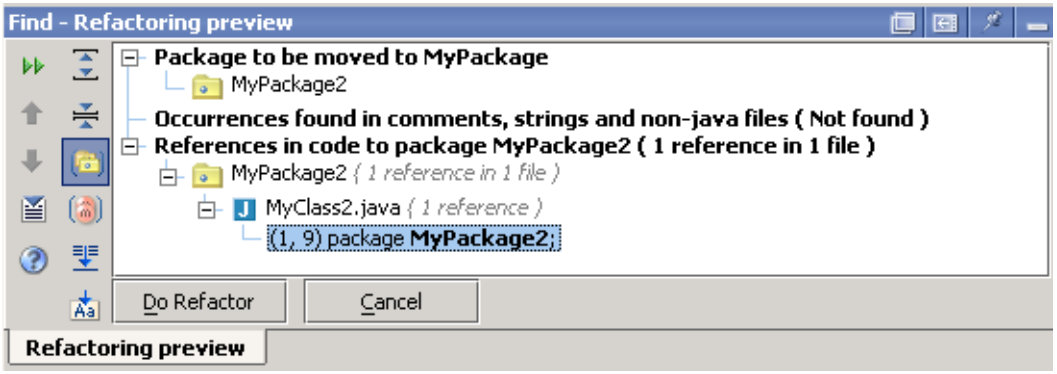


Figure 8.21. Find Refactoring preview (379)

8.43. Click **Do Refactor**. The package is moved.

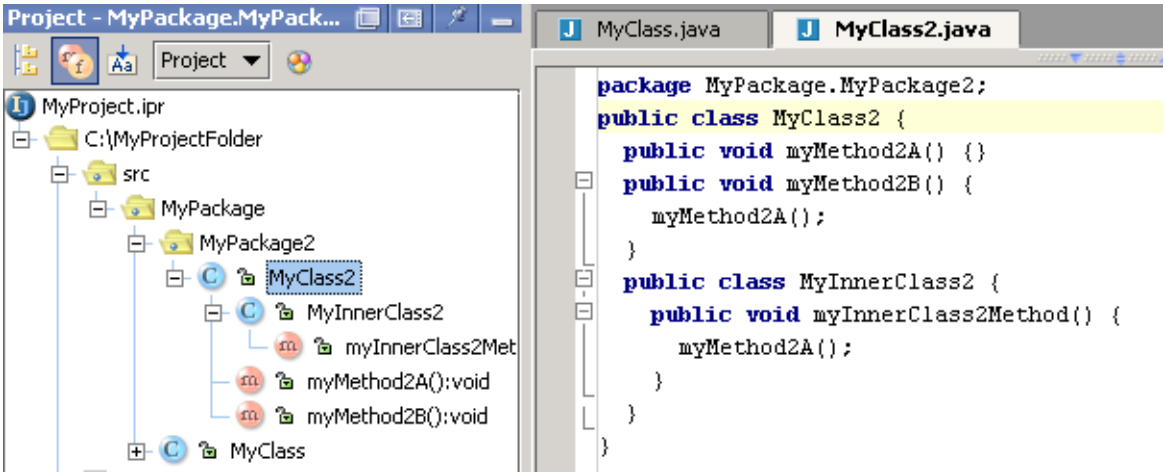


Figure 8.22. Package moved (378)

9.3.2. Class

8.44. Right-click on **MyClass2**.
8.45. Select **Refactor | Move**. The dialog “Move” appears.
8.46. For “To package” select **MyPackage**.

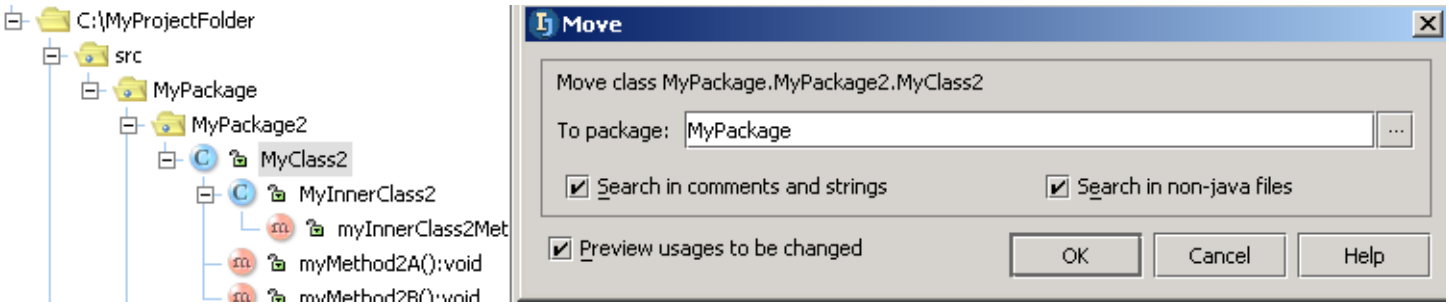


Figure 8.23. Move class dialog (377)

8.47. Click **OK**. The “Find - Refactoring preview” dialog appears.

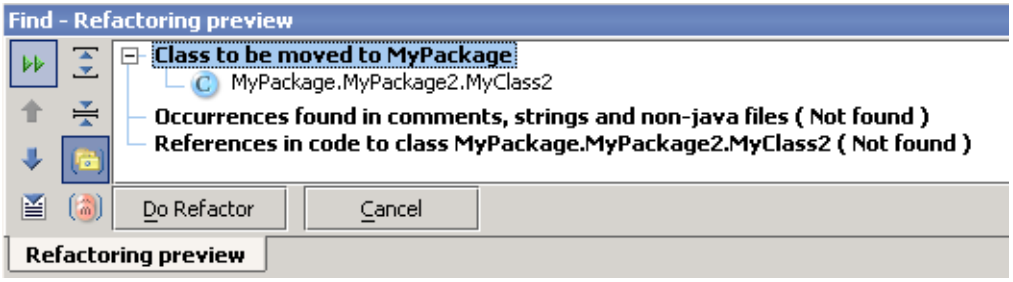


Figure 8.24. Find Refactoring preview (376)

8.48. Click **Do Refactor**. The class is moved.

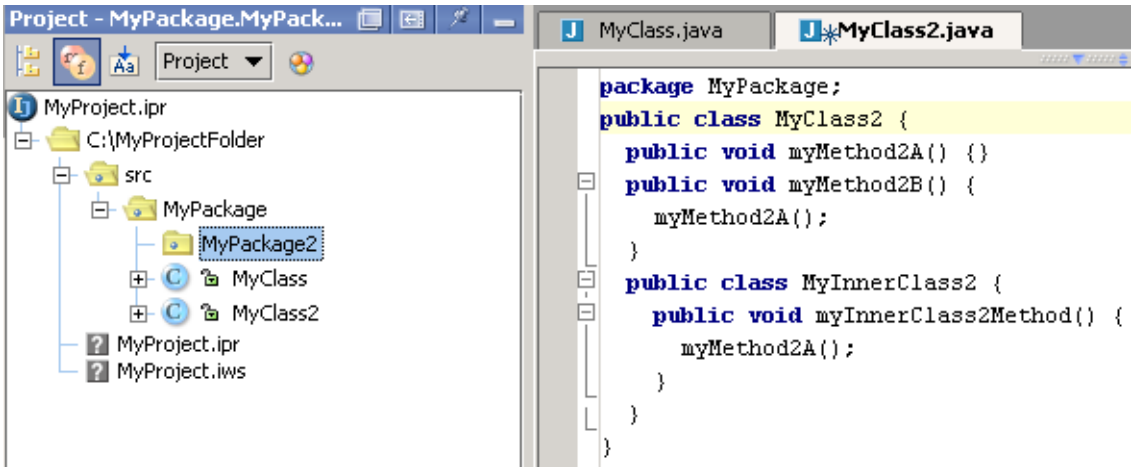


Figure 8.25. Class moved (375)

9.3.3. Members

8.49. Right-click on **myMethod2A**.
8.50. Selected **Refactor | Move**. The dialog “Move members” appears.
8.51. For “To” select **MyPackage.MyClass**.

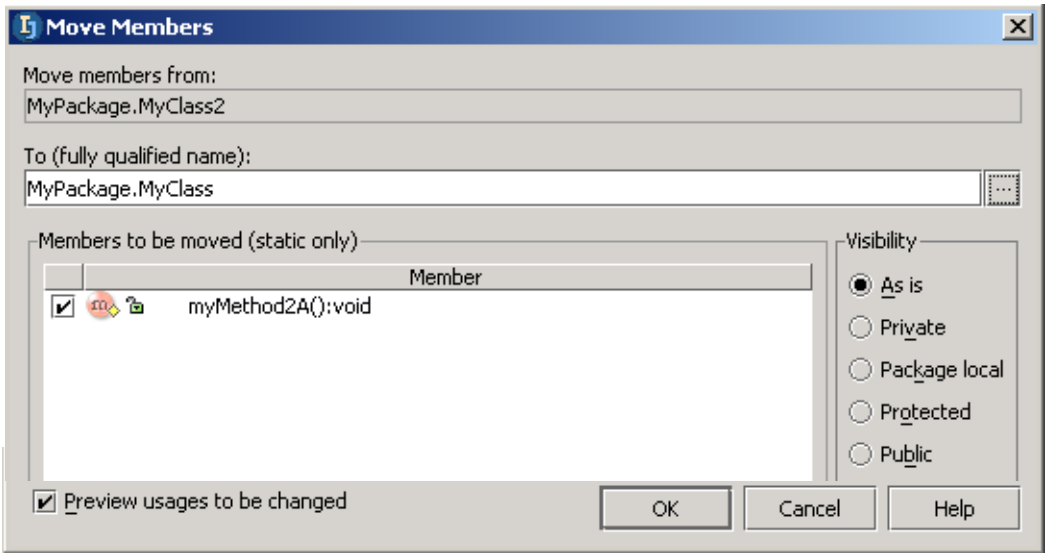


Figure 8.26. Dialog Move Members (374,921)

8.52. Click **OK**. The tool “Refactoring preview” appears.

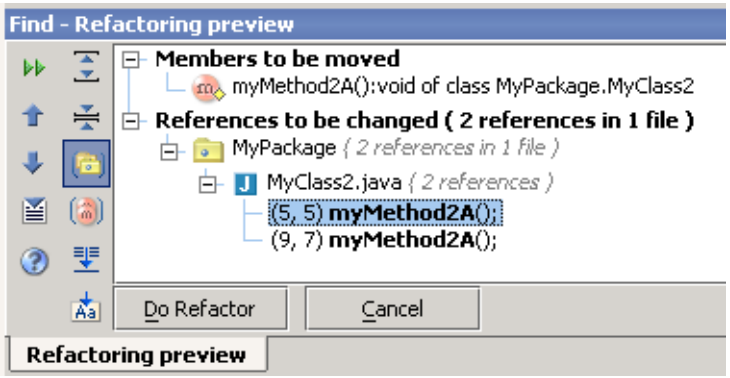


Figure 8.27. Find - Refactoring preview (373)

8.53. Click **Do Refactor**. The class is moved.

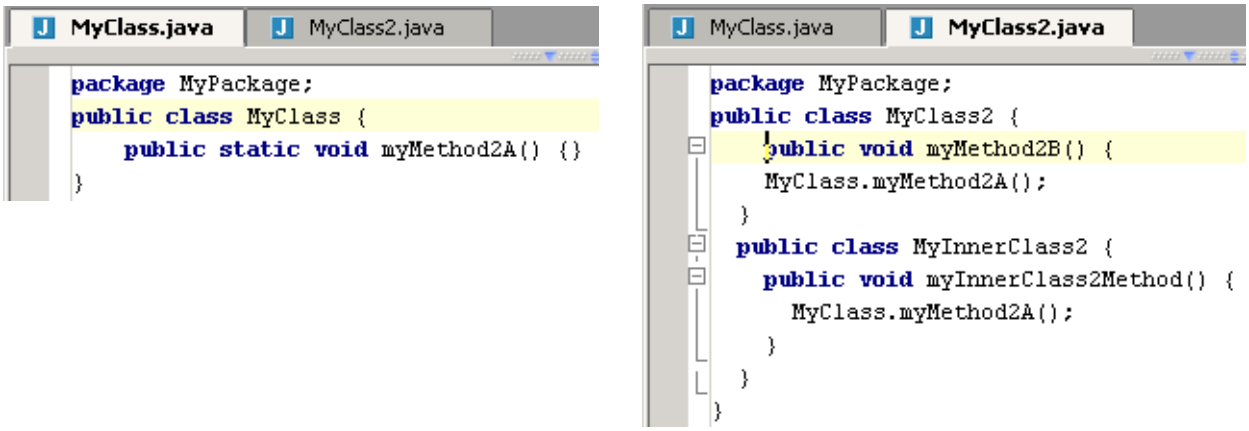


Figure 8.28. Moved class (372,371)

9.3.4. Inner to upper level

8.54. Place the cursor on **MyInnerClass2**.
8.55. Selected **Refactor | Move**. The dialog “Move inner to upper” appears.

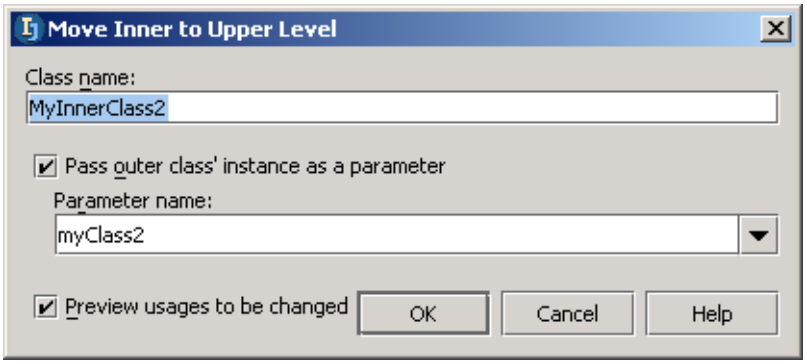


Figure 8.29. Move inner to upper dialog (370)

8.56. Click **OK**. The tool “Refactoring preview” appears.

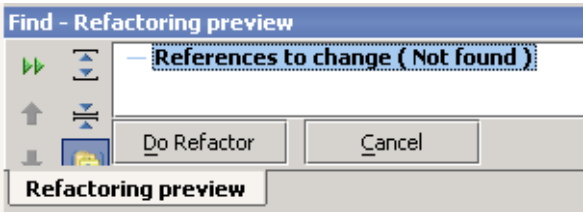


Figure 8.30. Find - Refactoring preview (369)

8.57. Click **Do Refactor**. The class is moved.

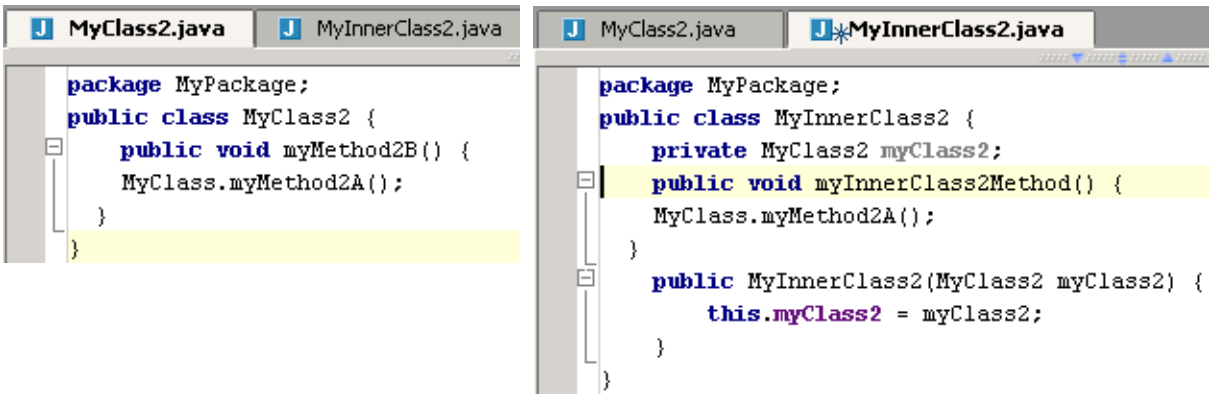


Figure 8.31. Moved inner class (368,367)

9.4. Change method signature

IDEA make it easy to change the signature of a method globally.

In this section you will

9.4.1. Add parameter

8.58. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public static void main(String[] args) {
      Class1 c1a = new Class1(1, "1");
      Class1 c1b = new Class1(2, "2");
  }
  public class Class1 {
    private int aInt;
    private String aString;
    public Class1(int aIntPar, String aStringPar) {
      this.aInt = aIntPar;
      this.aString = aStringPar;
    }
  }
}
```

8.59. Place the caret on the Class1 constructor in the line

```
      Class1 c1a = new Class1(1, "1");
```

8.60. Select **Refactor | Change method signature**. The dialog “Change method signature” appears.

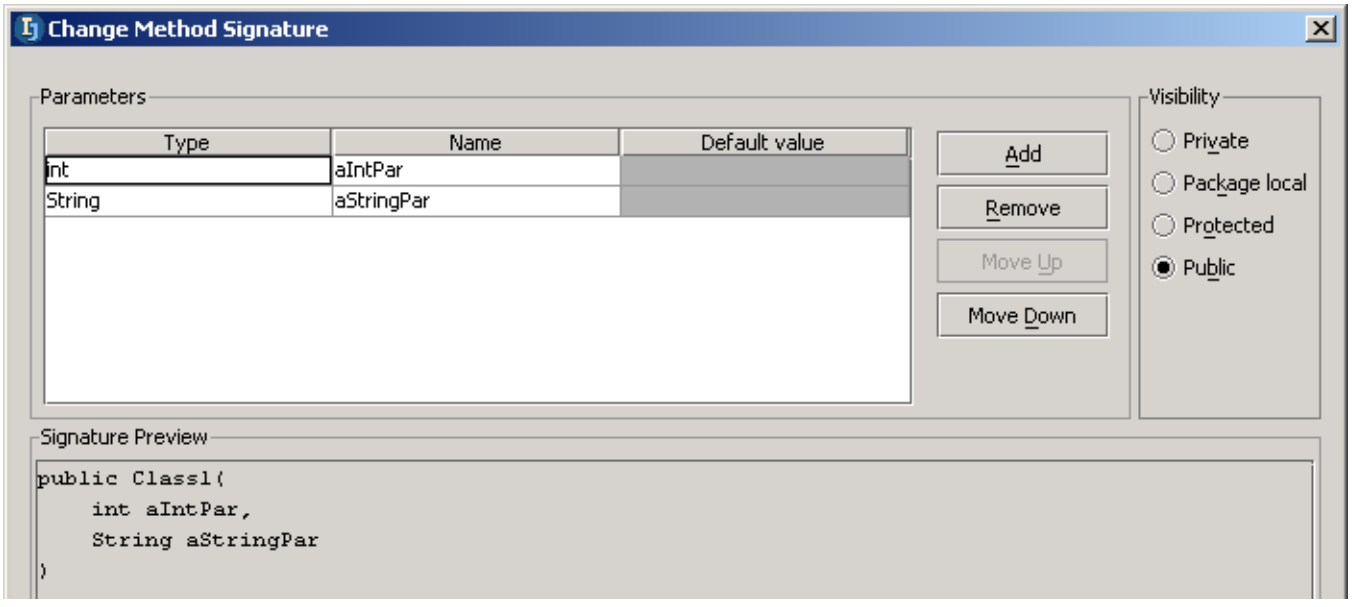


Figure 8.32. Dialog “Change method signature” (413)

8.61. Click **Add**. A new row appears at the end of the parameter list. The text box in row “Type” is selected.

8.62. For “Type” enter **boolean**.

8.63. For “Name” enter **aBoolean**.
8.64. For “Default value” enter **true**.

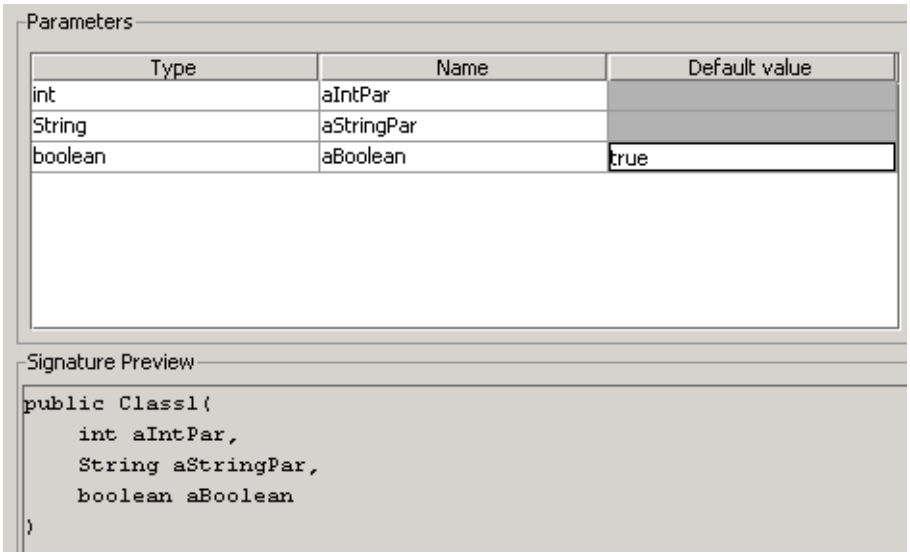


Figure 8.33. Add parameter (412)

8.65. Check checkbox **Preview usages to be changed**.
8.66. Click **OK**. The tool “Refactoring preview” appears.

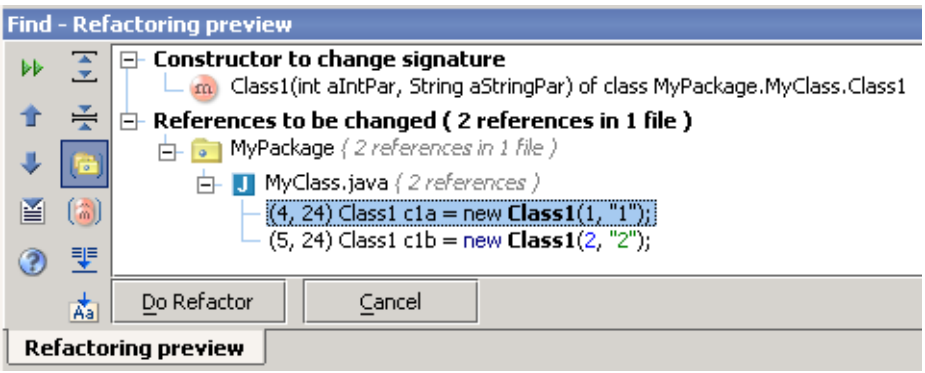


Figure 8.34. Find - Refactoring preview (411)

8.67. Click **Do Refactor**. The class is refactored.

```
package MyPackage;
public class MyClass {
  public static void main(String[] args) {
      Class1 c1a = new Class1(1, "1", true);
      Class1 c1b = new Class1(2, "2", true);
  }
  public class Class1 {
    private int aInt;
    private String aString;
    public Class1(int aIntPar, String aStringPar, boolean aBoolean) {
      this.aInt = aIntPar;
      this.aString = aStringPar;
    }
  }
}
```

Figure 8.35. Parameter added (410)

9.4.2. Move parameter

8.68. Reopen “Change method signature” for Class1.
8.69. Select **aBoolean**.
8.70. Click **MoveUp** until the parameter is first.

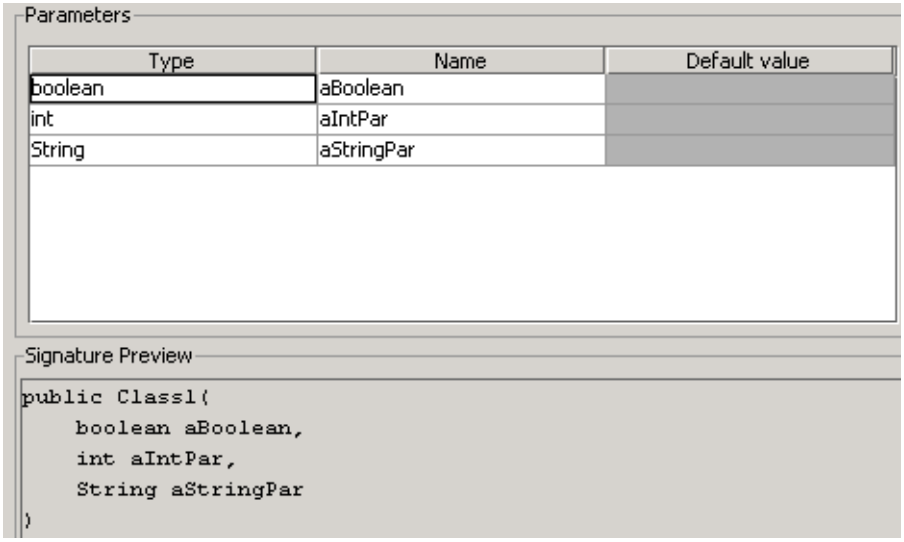


Figure 8.36. Parameter moved (409)

8.71. Click **OK**.
8.72. Click **Do Refactor**. The class is refactored.

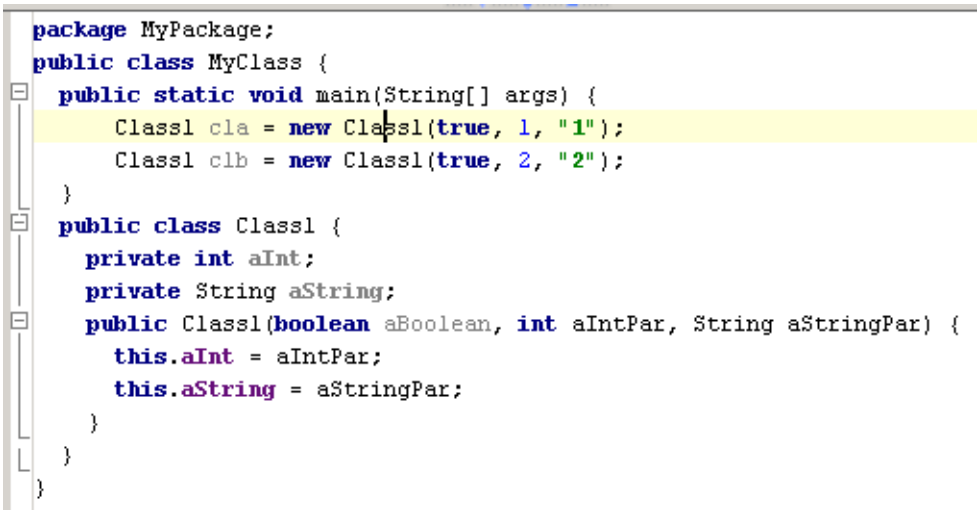


Figure 8.37. Parameter moved (922)

9.4.3. Change name

8.73. Select **aBoolean**.
8.74. Change to **aBooleanPar**.
8.75. Click **OK**.
8.76. Click **Do Refactor**. The class is refactored.

9.4.4. Change type

8.77. Reopen “Change method signature” for Class1.
8.78. Change type “boolean” to **char**.

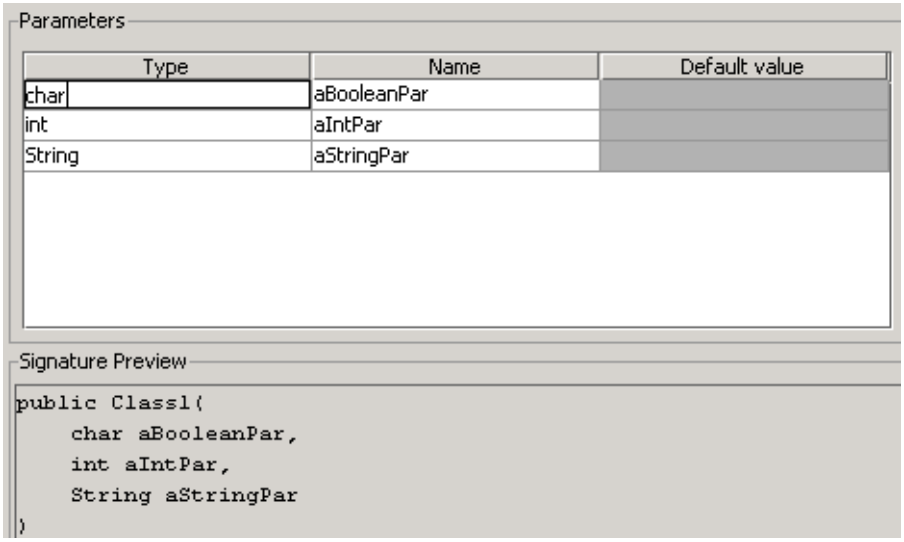


Figure 8.38. Parameter type change (408)

8.79. Click **OK**.
8.80. Click **Do Refactor**. The class is refactored.
8.81. Change

```
Class1 c1a = new Class1(true, 1, "1");
Class1 c1b = new Class1(true, 2, "2");
```

to

```
Class1 c1a = new Class1('1', 1, "1");
Class1 c1b = new Class1('2', 2, "2");
```

```
public class MyClass {
  public static void main(String[] args) {
      Class1 c1a = new Class1('1', 1, "1");
      Class1 c1b = new Class1('2', 2, "2");
  }
  public class Class1 {
    private int aInt;
    private String aString;
    public Class1(char aBoolean, int aIntPar, String aStringPar) {
      this.aInt = aIntPar;
      this.aString = aStringPar;
    }
```

Figure 8.39. Parameter type changed (407)

9.5. Copy class

IDEA make it easy to copy a class.

8.82. Select **MyClass**.

8.83. Select **Refactor | Copy**. The dialog “Copy Class” appears.

8.84. For “Name” enter **MyClassCopy**.

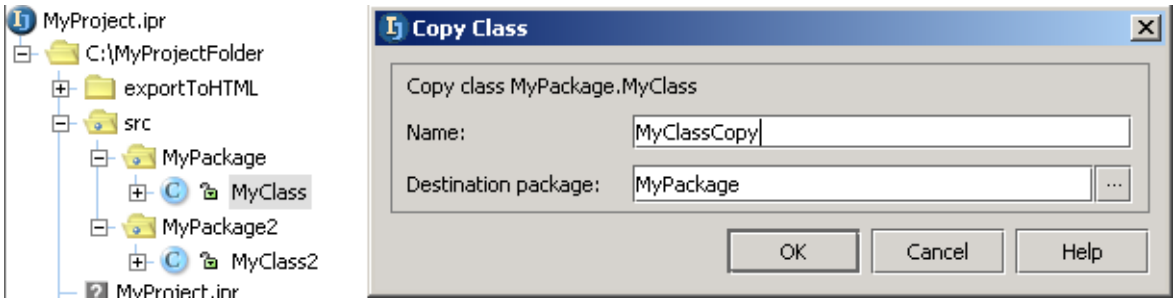


Figure 8.40. Dialog “Copy Class” (890)

8.85. Click **OK**. The class is copied.

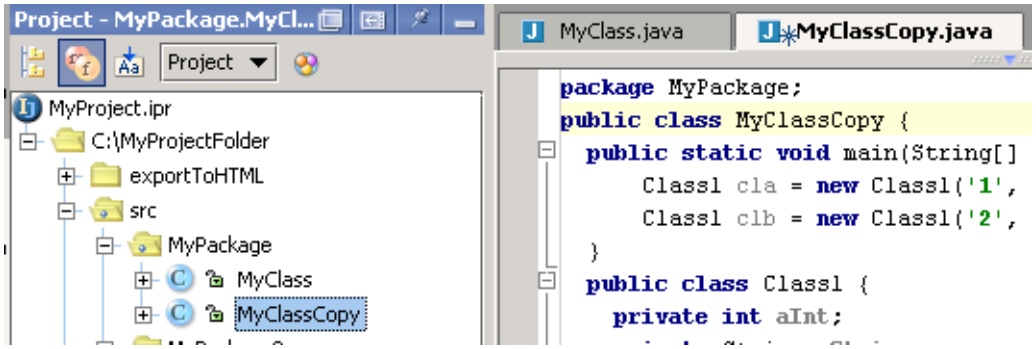


Figure 8.41. Copied class (891)

9.6. Extract

IDEA allows you to extract the following:

9.6.1. Method

8.86. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
    public void aMethod() {
        System.out.println("Hello");
    }
}
```

8.87. Place the cursor on line

```
        System.out.println("Hello");
```

8.88. Selected **Refactor | Extract method**. The dialog “Extract method” appears.

8.89. For “Name” enter **extractedMethod**.

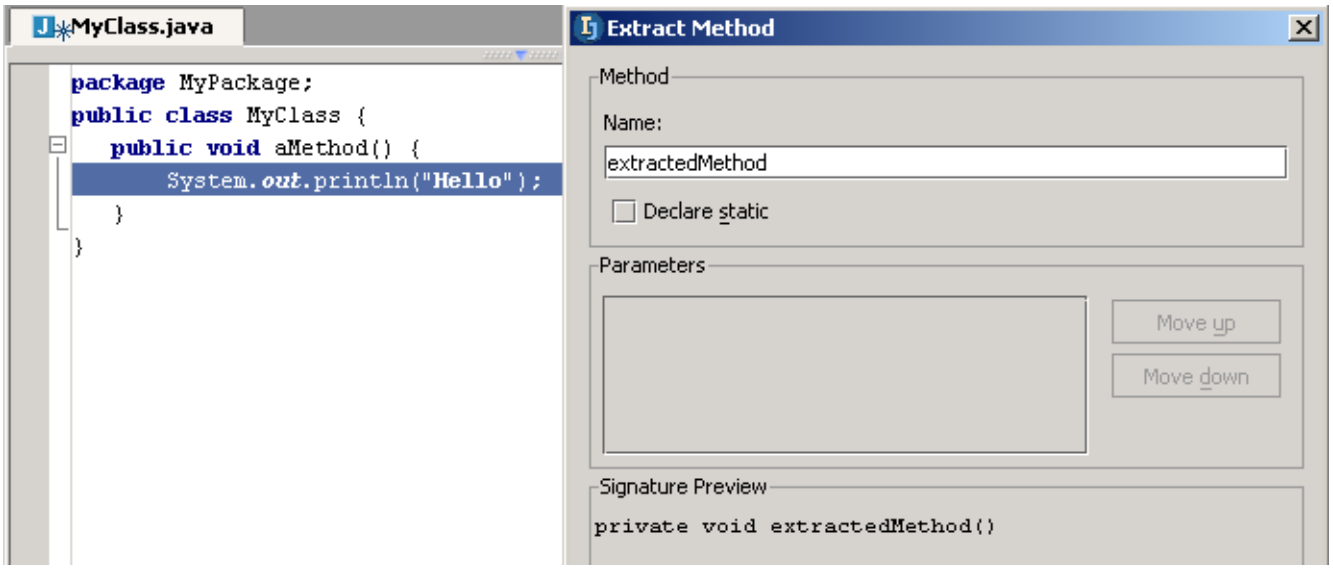


Figure 8.42. Method to extract (406)

8.90. Click **OK**. The method is extracted.

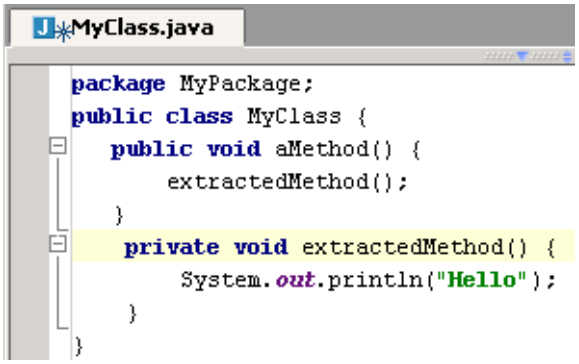


Figure 8.43. Extracted method (405)

9.6.2. Interface

8.91. Click on line

```
private void extractedMethod() {
```

8.92. Select **Refactor | Extract interface**. The “Extract Interface” dialog appears.
8.93. For “Interface name” enter **ExtractedInterface**.
8.94. Check the checkbox for **aMethod():void**.

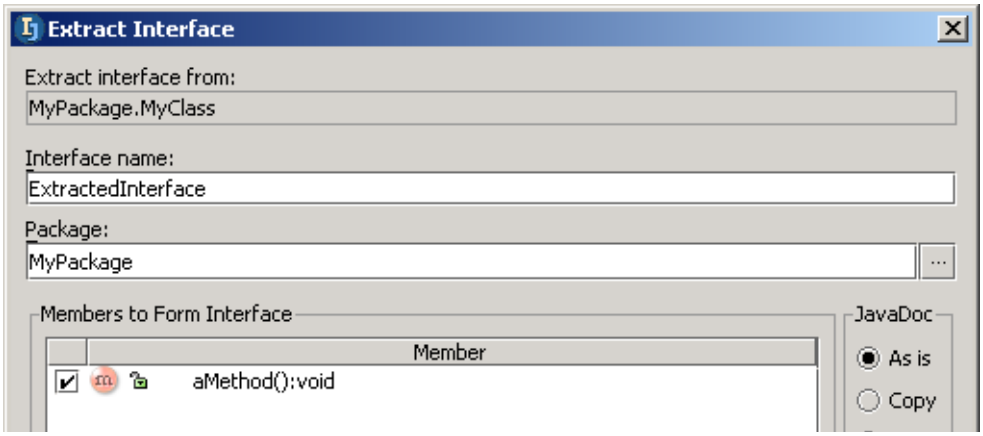


Figure 8.44. Extract interface (404)

8.95. Click **OK**. The dialog “Search usages” appears.

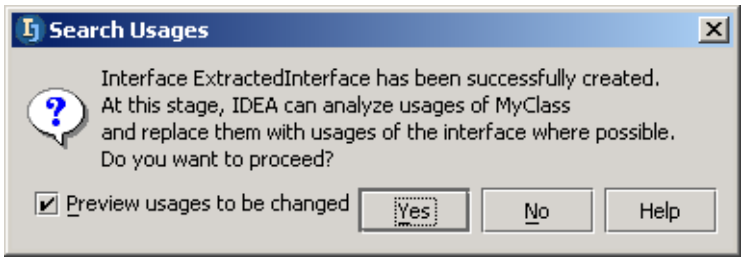


Figure 8.45. Search usages (924)

8.96. Click **Yes**.

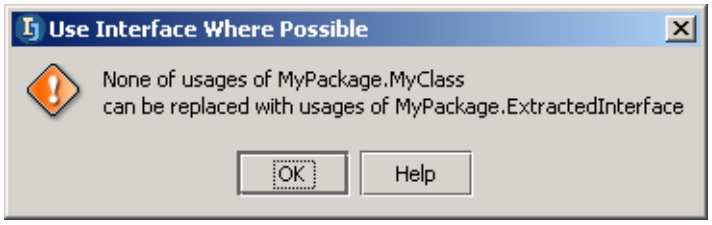


Figure 8.46. No usages can be replaced (925)

8.97. Click **OK**. The interface is extracted.

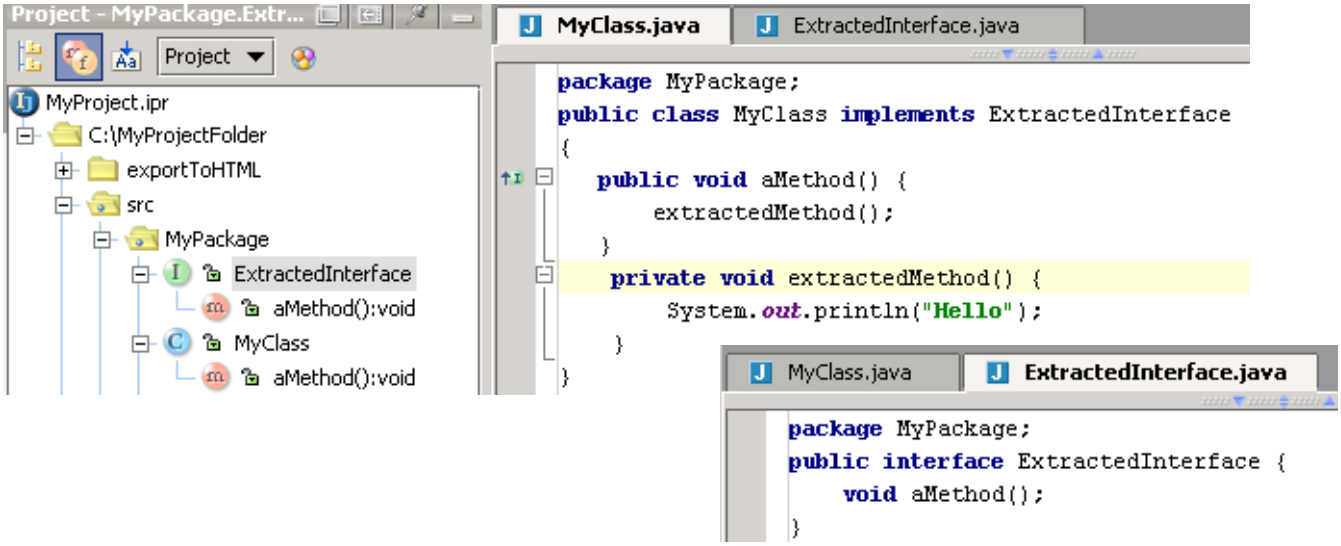


Figure 8.47. Extracted interface (401,400)

9.6.3. Superclass

8.98. Select **MyClass**.
8.99. Select **Refactor | Extract superclass**. The “Extract Superclass” dialog appears.
8.100. For “Superclass name” enter **ExtractedSuperClass**.
8.101. Check the checkbox in “Members to Form Superclass”.

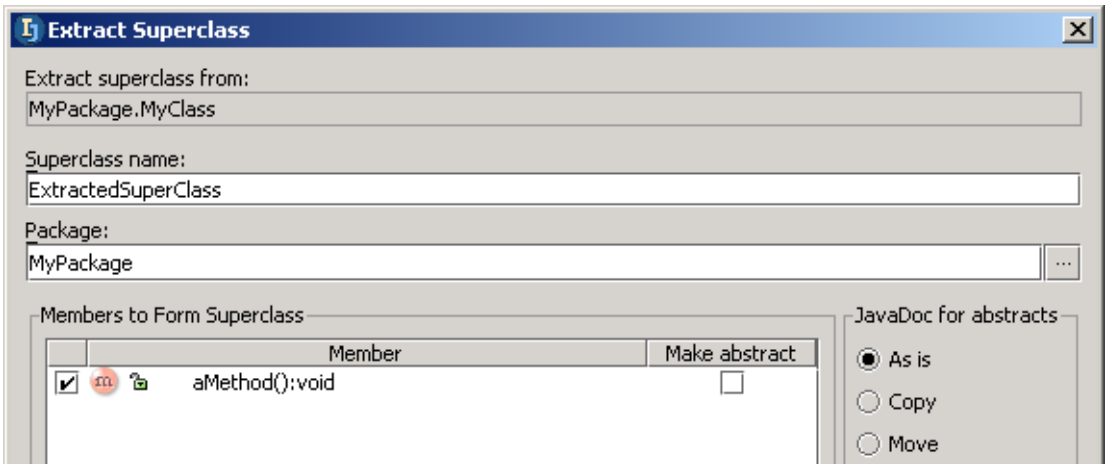


Figure 8.48. Extract superclass (399)

8.102. Click **OK**. A question dialog appears.

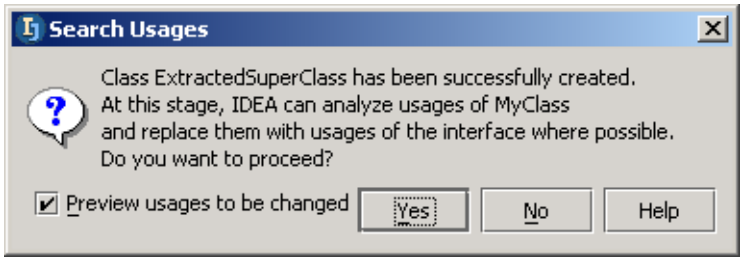


Figure 8.49. Proceed question (398)

8.103. Click **Yes**.

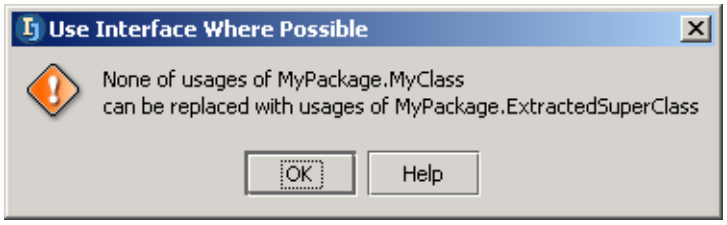


Figure 8.50. User interface where possible (926)

8.104. Click **OK**. The superclass is extracted.

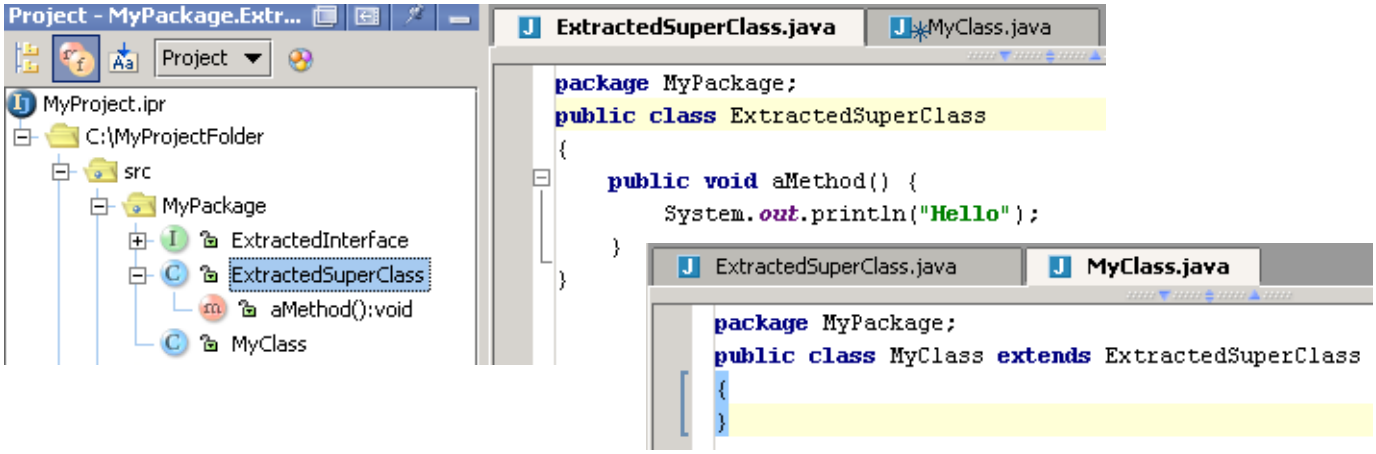


Figure 8.51. Extracted superclass (397,396)

9.7. Use interface where possible

IDEA can replace with an interface if possible.

8.105. Create interface **MyInterface**:

```
package MyPackage;
public interface MyInterface {
  public void iMethod();
}
```

8.106. Create class **MyClass**:

```
package MyPackage;
public class MyClass implements MyInterface {
     public void iMethod() {}
}
```

8.107. Create class **MyClass2**:

```
package MyPackage;
public class MyClass2 extends MyClass {
    public void test (MyClass myClass) {
        myClass.iMethod();
    }
}
```

8.108. In the editor for MyClass: Select **Refactor | Use interfaces where possible...**. The dialog “Use Interface Where Possible” appears.

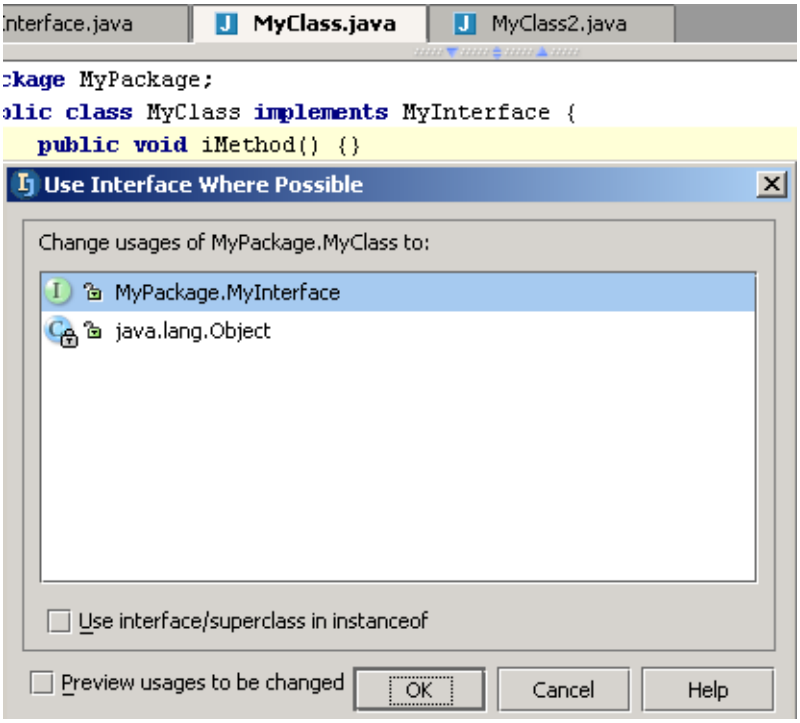


Figure 8.52. User interfaces where possible (892)

8.109. Select **MyPackage.MyInterface**.

8.110. Check **Preview usages to be changed**.

8.111. Click **OK**. The refactoring preview appears.

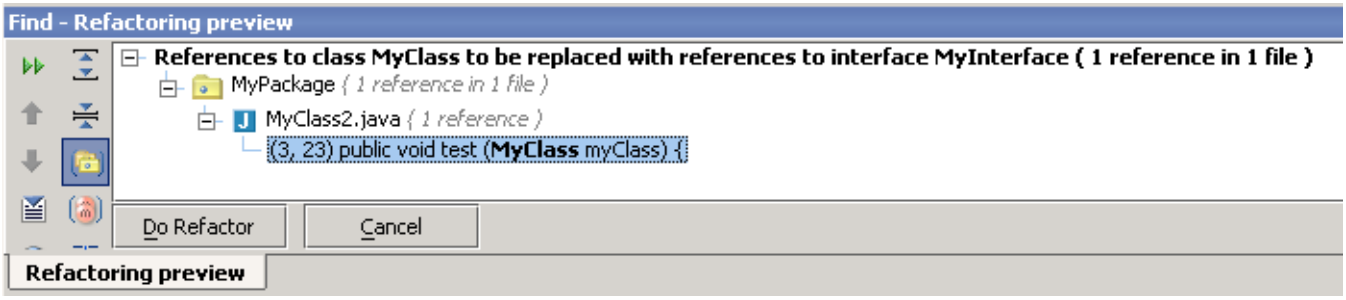


Figure 8.53. Refactoring preview (893)

8.112. Click **Do Refactor**. MyClass2 is refactored.

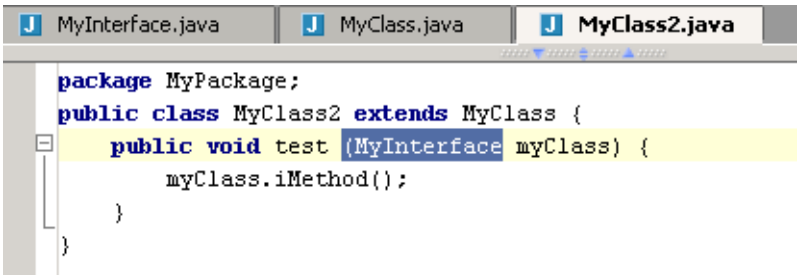


Figure 8.54. Refactored class (894)

9.8. Pull/push members

IDEA can

- **9.8.1. Pull Up (page 228)**
- **9.8.2. Push Down (page 229)**

class members.

9.8.1. Pull Up

8.113. Create class **MyClass**:

```
package MyPackage;
public class MyClass implements MyInterface {
    public void iMethod() {};
    public void iMethod2() {};
}
```

8.114. Create interface **MyInterface**:

```
package MyPackage;
public interface MyInterface {
}
```

8.115. In the MyClass editor: Select **Refactor | Pull members up...**.

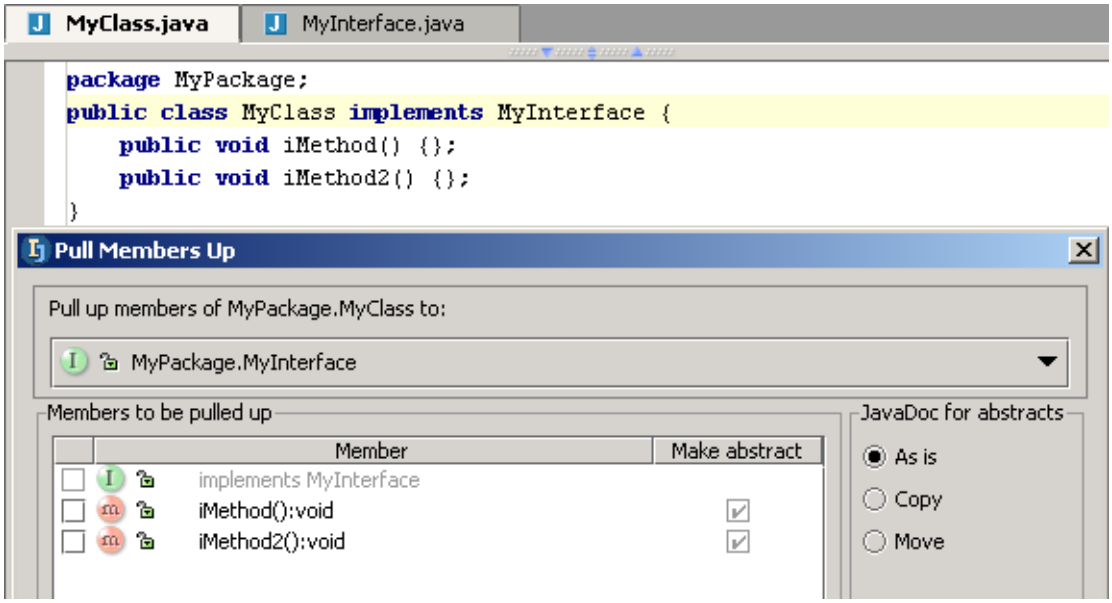


Figure 8.55. Dialog “Pull members up” (895)

8.116. Check **iMethod():void**.

8.117. Check **iMethod2():void**.

8.118. Click **OK**. The methods are “pulled up” to MyInterface.

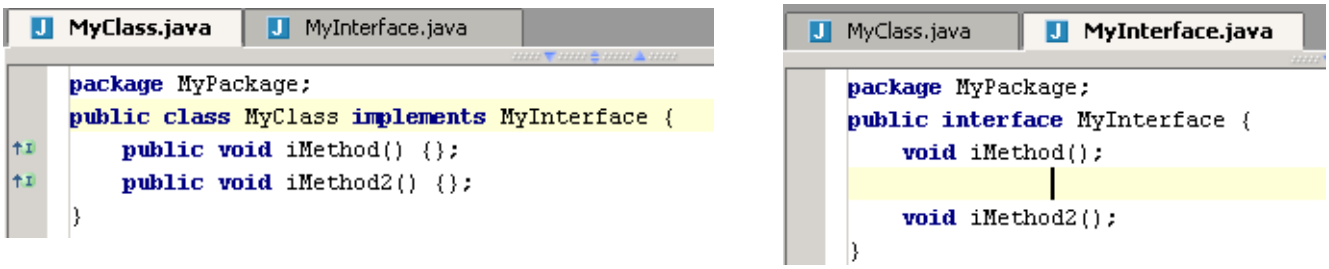


Figure 8.56. Members pulled up (896,897)

9.8.2. Push Down

8.119. Delete the methods in MyClass:

```
package MyPackage;
public class MyClass implements MyInterface {}
```

8.120. In the MyInterface editor: Select **Refactor | Push members down...**.

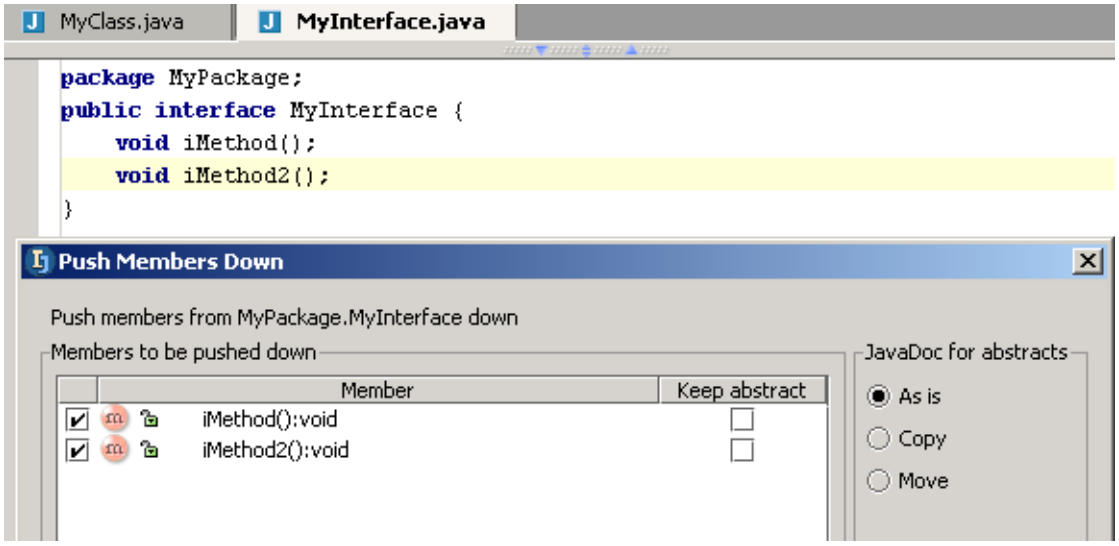


Figure 8.57. Dialog “Push members down” (898)

8.121. Check **iMethod():void**.

8.122. Check **iMethod2():void**.

8.123. Check **Preview usages to be changed**.

8.124. Click **OK**. A Refactoring preview appears.

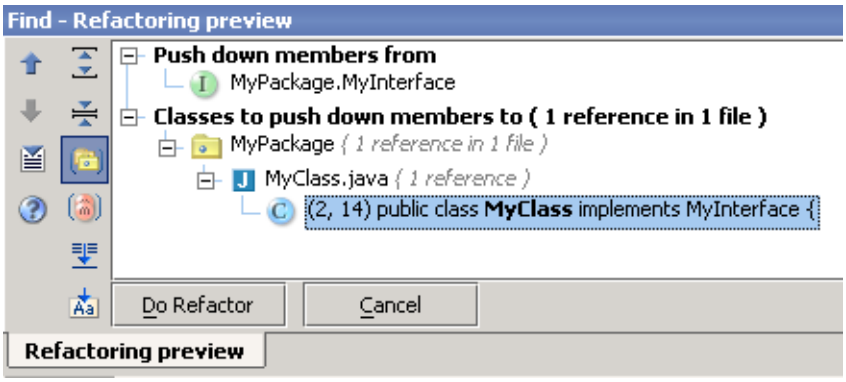


Figure 8.58. Push members down refactoring preview (899)

8.125. Click **OK**. The members are pushed down to MyClass.

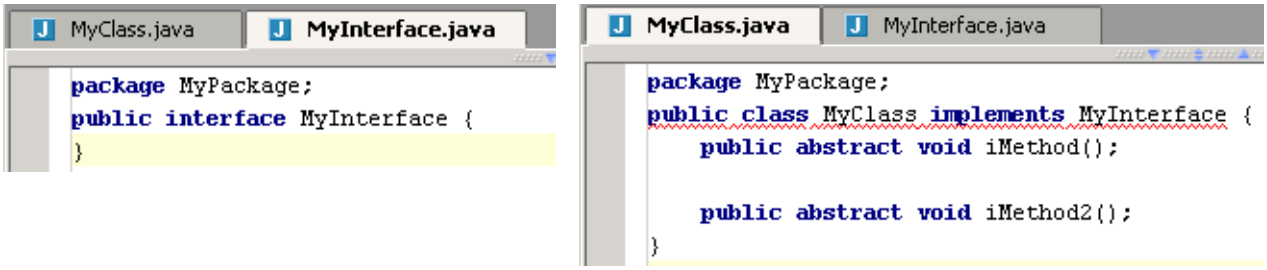


Figure 8.59. Members pushed down (900,901)

9.9. Introduce

IDEA can introduce the following:

9.9.1. Variable

8.126. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
    public static void main(String[] args) {
        System.out.println("Hello");
    }
}
```

8.127. Select “**System.out**”.

8.128. Select **Refactor | introduce variable**. The dialog “Introduce variable” appears.

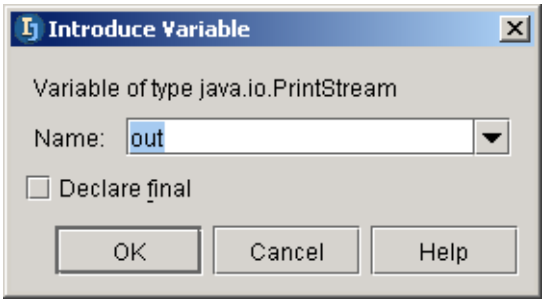


Figure 8.60. Introduce variable (382)

8.129. Click **OK**. The variable is introduced.

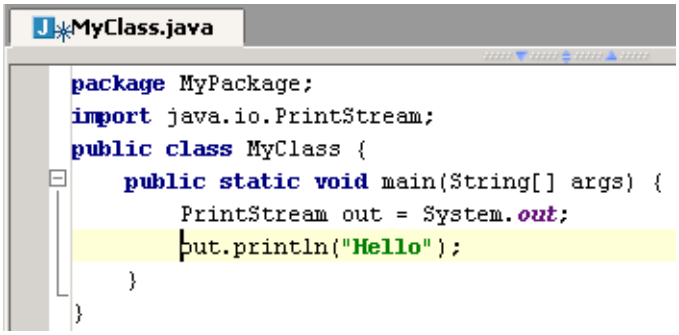


Figure 8.61. Variable introduced (381)

9.9.2. Field

The following example shows how to convert a local variable to a field.

8.130. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public void aMethod() {
    String aString = new String("Hello");
  }
}
```

8.131. Place the cursor on **aString**.

8.132. Select **Refactor | introduce field**.

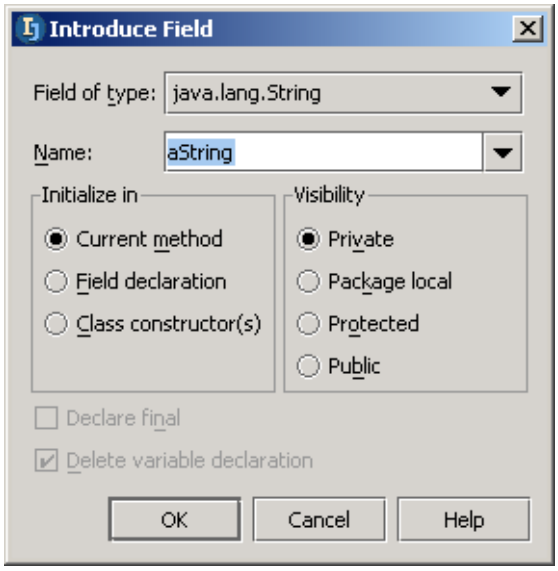


Figure 8.62. Introduce field (384)

8.133. Click **OK**. The field is introduced.

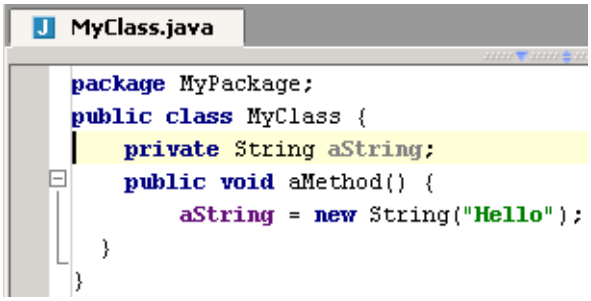


Figure 8.63. Field introduced (383)

9.9.3. Constant

The following example shows how to convert to a constant.

8.134. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public int aMethod() {
    int aInt = 1;
    return aInt;
  }
```

8.135. Place the cursor on **aInt**.

8.136. Select **Refactor | Introduce constant**.

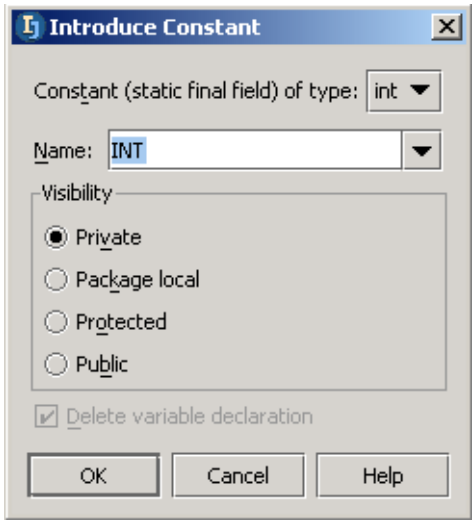


Figure 8.64. Introduce constant (927???)

8.137. Click **OK**. The constant is introduced.

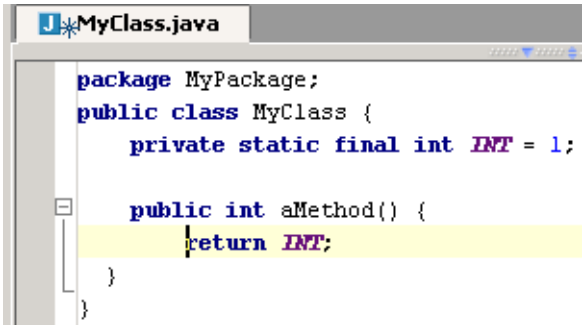


Figure 8.65. Constant introduced (928)

9.9.4. Parameter

The following example shows how to convert to a parameter.

8.138. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public void aMethod() {
  int aInt = 1;
  }
}
```

8.139. Place the cursor on **aInt**.

8.140. Select **Refactor | Introduce parameter**.

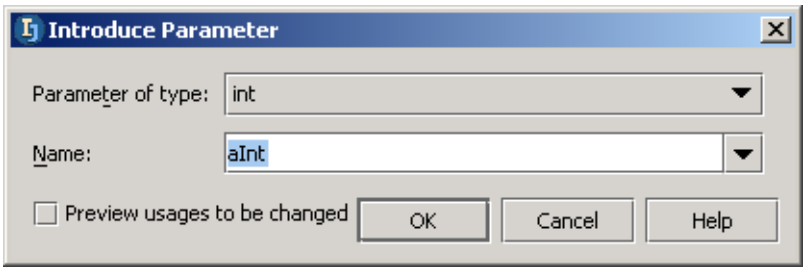


Figure 8.66. Introduce parameter (929)

8.141. Click **OK**. The parameter is introduced.

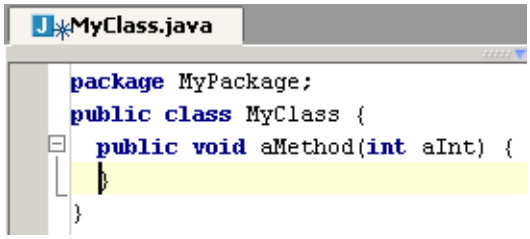


Figure 8.67. Parameter introduced (930)

9.10. Inline

IDEA can inline a

9.10.1. Variable

8.142. Create class **MyPackage**:

```
package MyPackage;
public class MyClass {
  public int aMethod() {
    int aVar = 1;
    return aVar;
  }
}
```

8.143. Place the cursor on “aVar”.
8.144. Selected **Refactor | Inline**. A message appears “Inline local variable aVar?”.
8.145. Click **OK**. The variable is inlined.

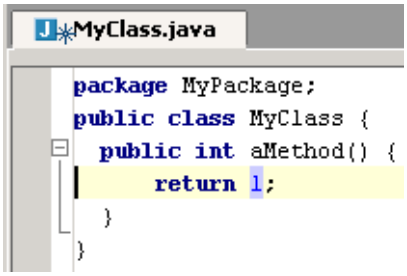


Figure 8.68. Inlined variable (395)

9.10.2. Method

8.146. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public int methodToInline(int param) {
    return aMethod() + param;
  }
  public int aMethod() {
    return 1;
  }
}
```

8.147. Create class **MyClass2**:

```
package MyPackage;
public class MyClass2 {
  void aMethod (MyClass mc){
    int res = mc.methodToInline(1);
  }
}
```

8.148. Place the cursor on “methodToInline”.
8.149. Selected **Refactor | Inline**. A message appears.
8.150. Select **All invocations and remove the method**.

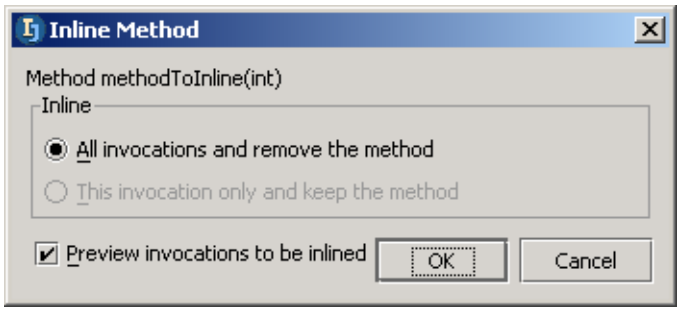


Figure 8.69. Inline method (394)

8.151. Click **OK**. A refactoring preview appears.

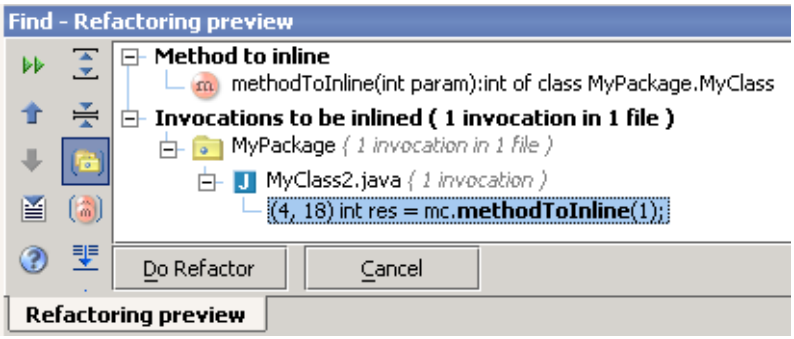


Figure 8.70. Inline method preview (931)

8.152. Click **Do Refactor**. The method is inlined.

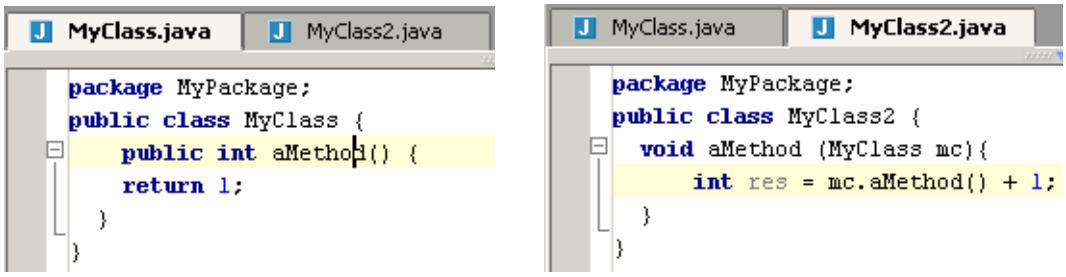


Figure 8.71. Inlined method (393,392)

9.11. Encapsulate field

8.153. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public int field;
  public void method1(){
    field = 1;
  }
  public int method2(int param){
    return field + param;
  }
}
```

8.154. Create class **MyClass2**:

```
package MyPackage;
public class MyClass2 {
  private MyClass mc;
  public int method3(int param){
    return mc.field + param;
  }
}
```

8.155. Place the cursor in the class **MyClass**.
8.156. Selected **Refactor | Encapsulate fields...**. The dialog “Encapsulate fields” appears.
8.157. Check the checkbox for **field:int**.

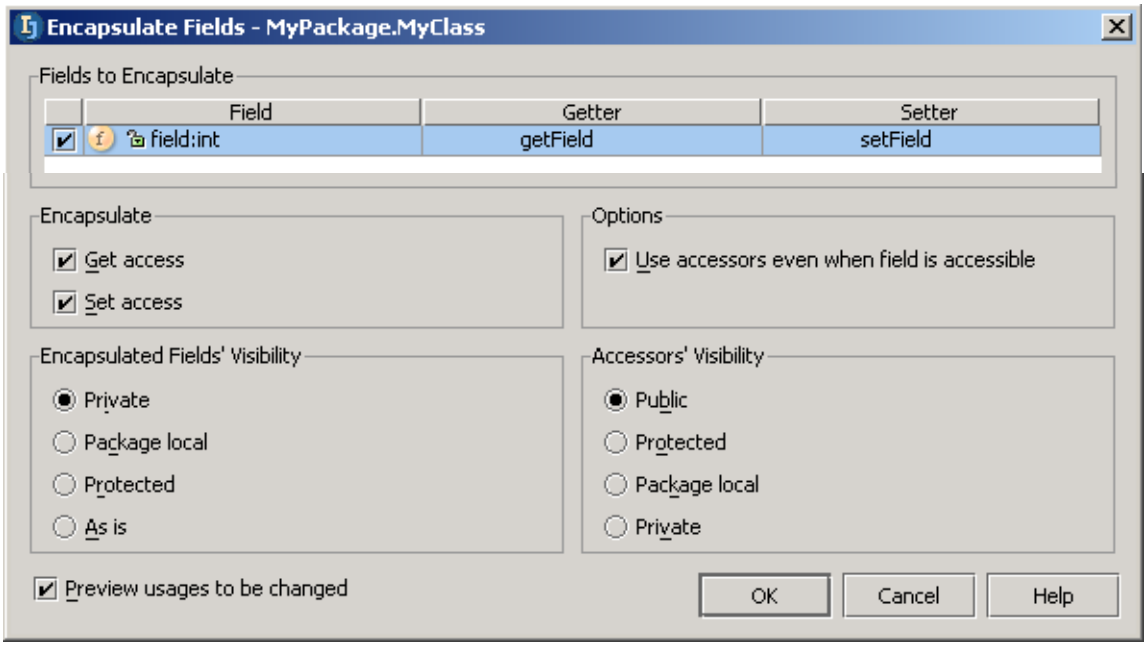


Figure 8.72. Dialog “Encapsulate fields” (391,390)

8.158. Click **OK**. A refactoring preview appears.

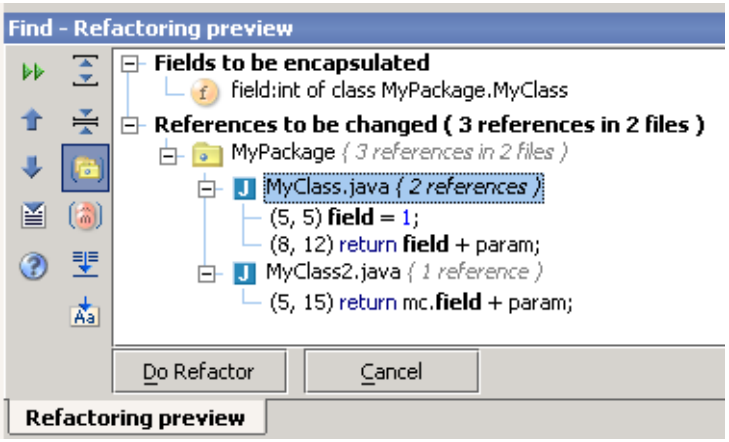


Figure 8.73. Encapsulate field refactoring preview (389)

8.159. Click **Do Refactor**. The field is encapsulated.

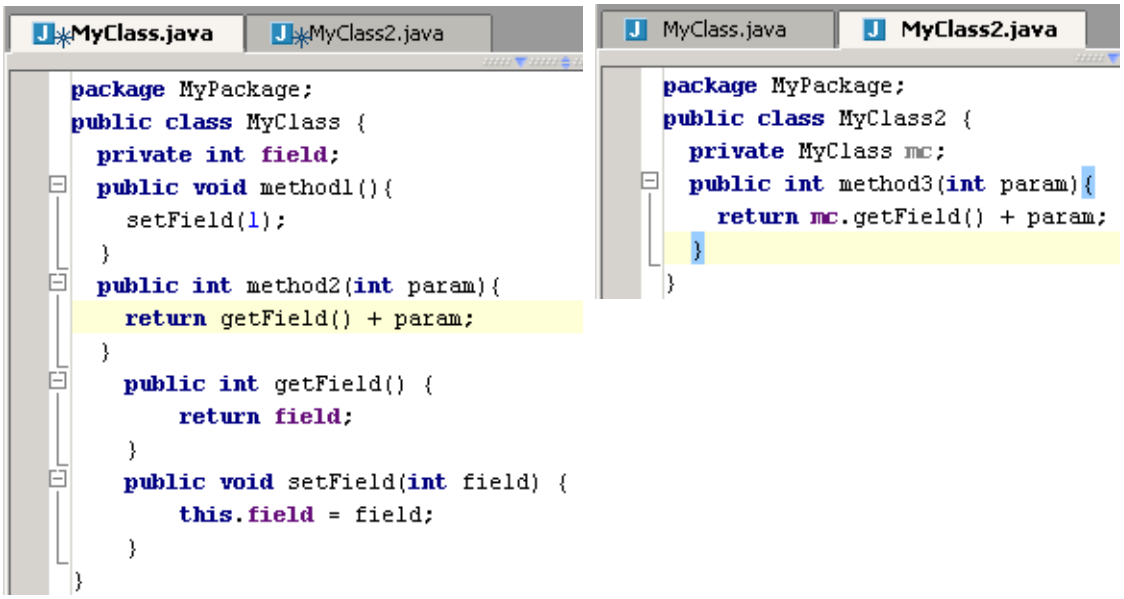


Figure 8.74. Encapsulated fields (388,387)

9.12. Replace temp with query

8.160. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  void aMethod() {
    int temp1 = query();
    int temp2 = query();
    temp2 = temp1;
  }
  int query()
  {
    return 1;
  }
}
```

8.161. Place the caret on **temp1**.

8.162. Click **Refactor | Replace temp with query...**. The dialog “Replace temp with query” appears.

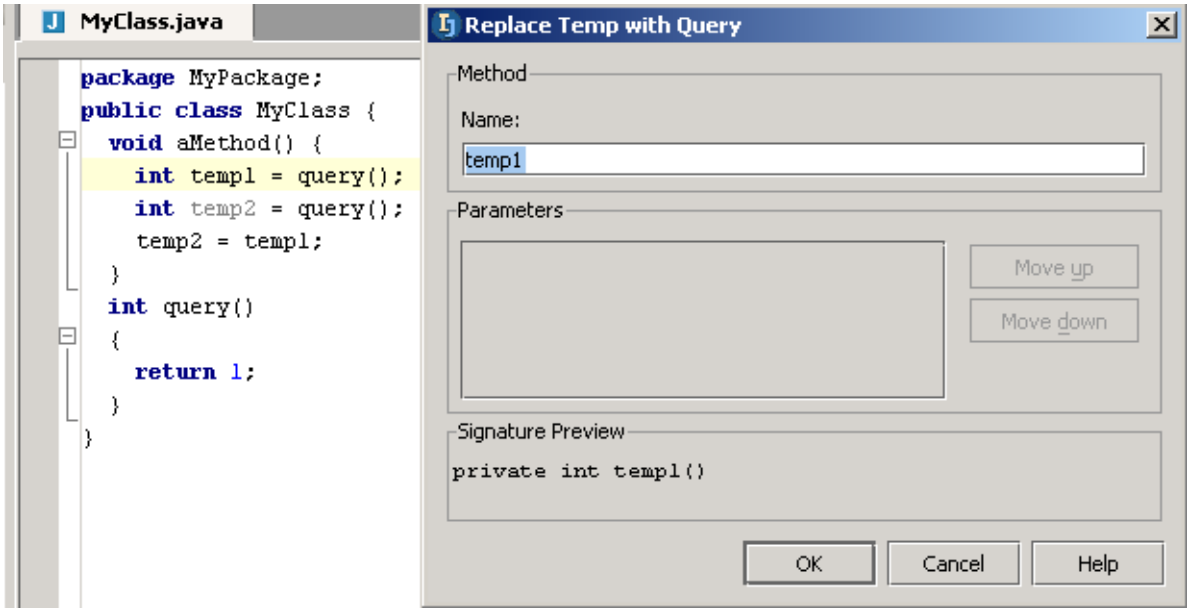


Figure 8.75. Replace temp with query (902)

8.163. Click **OK**. The temporary variable is replaced with a query.

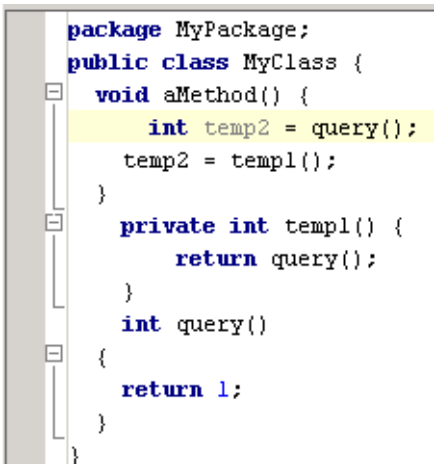


Figure 8.76. Temp replaced with query (903)

9.13. Convert Anonymous to Inner

8.164. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public MyInterface aMethod() {
    final int aInt = 1;
    return new MyInterface() {
      public int aFunction() {
        return aInt;
      }
    };
  }
}
```

8.165. Create class **MyInterface**:

```
package MyPackage;
public interface MyInterface {
   int aFunction();
}
```

8.166. Place the cursor inside

```
    return new MyInterface() {
      public int aFunction() {
        return aInt;
      }
    };
```

8.167. Selected **Refactor | Convert anonymous to inner...**. The dialog “Convert Anonymous to Inner” appears.

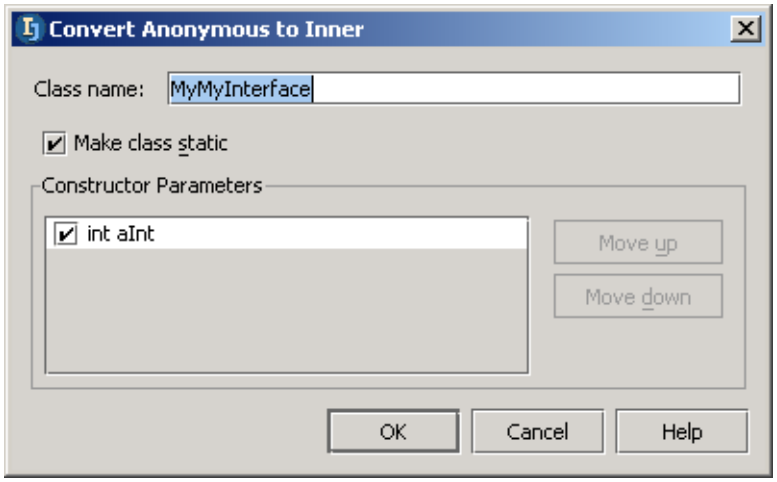


Figure 8.77. Dialog “Convert anonymous to inner” (932)

8.168. Click **OK**. The anonymous class is converted to an inner class.

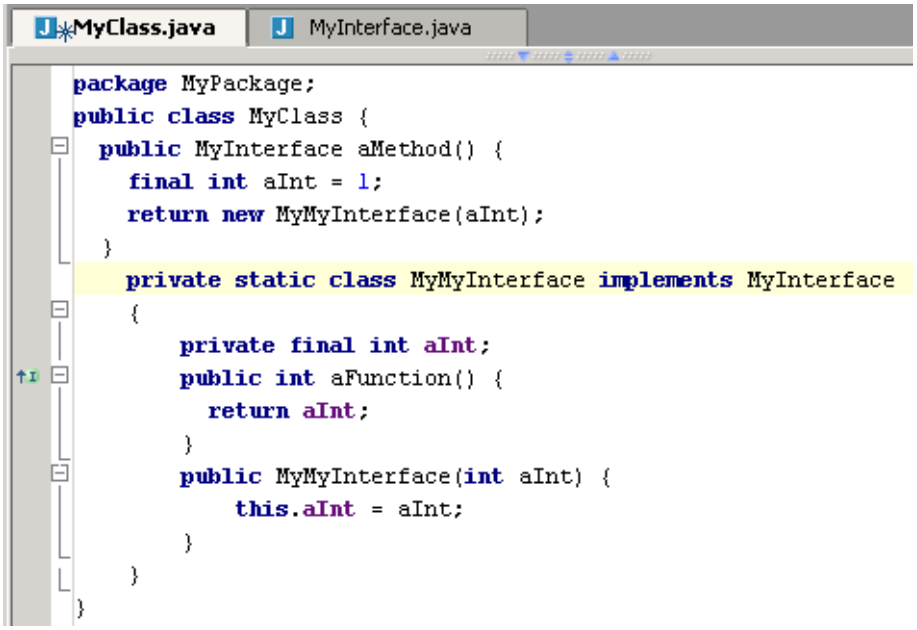


Figure 8.78. Anonymous class converted to inner (385)

10. Code Inspection X

contacts: max

10.1. Run inspection X

10.1.1. File X

9.1. Create file:

```
package MyPackage;
public class MyClass {
    void aMethod() {
        int temp2 = query();
     temp2 = temp1();
    }
     private int temp1() {
         return query();
     }
     int query() {
         return 1;
     }
}
```

9.2. Select **Tools | Inspect code...**. The dialog “Choose Inspection Scope” appears.

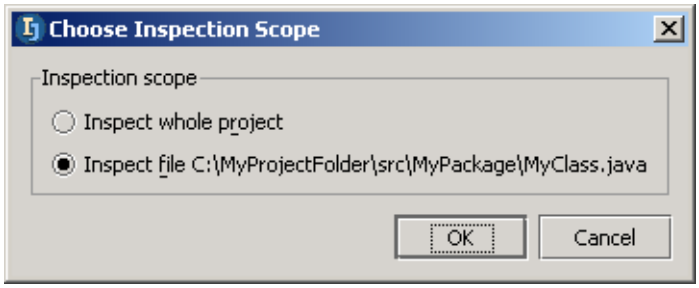


Figure 9.1. Choose inspection scope (904)

9.3. Select **Inspect file**.
9.4. Click **OK**. The dialog “Inspect code in file” appears.

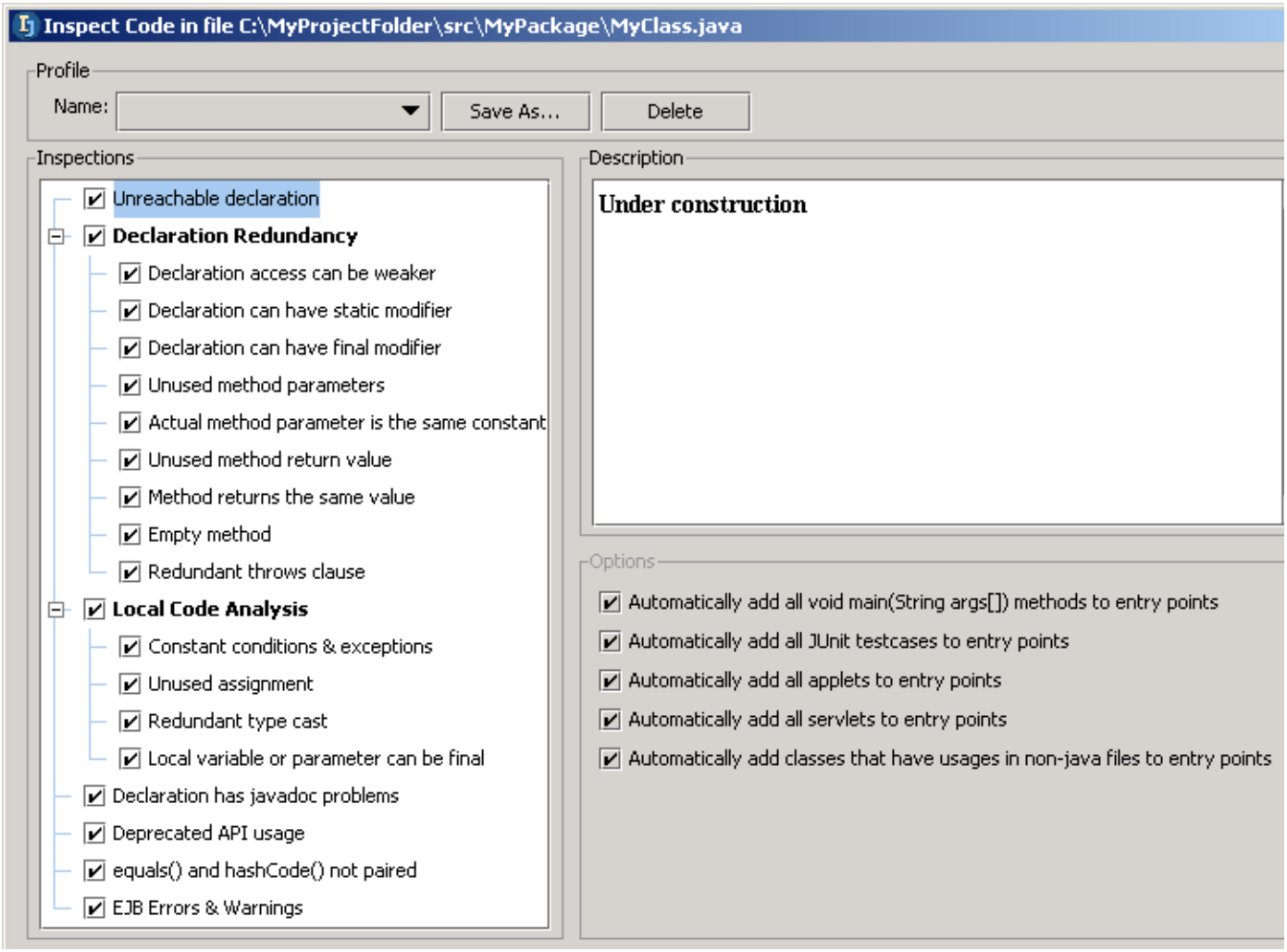


Figure 9.2. Dialog “Inspect code in file” (905)

9.5. Click **Run**. The inspection tool appears.

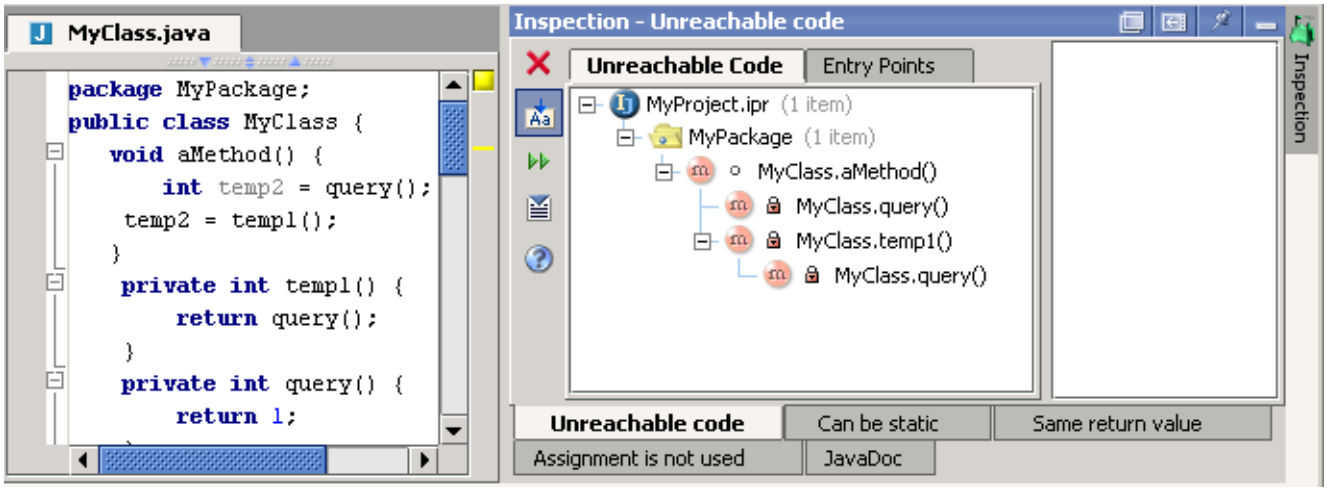


Figure 9.3. Inspection tool (906)

Inspection results

- Unreachable code
- Can be static

- Same return value
- Assignment is not used
- Javadoc

10.1.2. Project X

9.6. Close the inspection tool.
9.7. Select **Tools | Inspect code...**. The dialog “Choose Inspection Scope” appears.
9.8. Select **Inspect whole project**.
9.9. Click **OK**. The dialog “Inspect code in project” appears.
9.10. Click **Run**. The inspection tool appears.

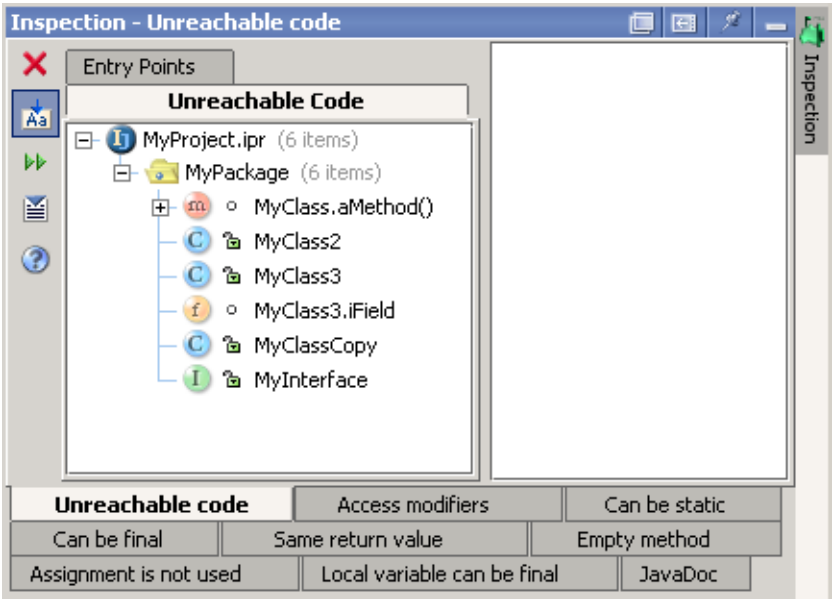


Figure 9.4. Inspection tool (project) (907)

Inspection results

- Unreachable code
- Access modifiers
- Can be static
- Can be final
- Same return value
- Empty method
- Assignment is not used
- Local variable can be final
- Javadoc

10.1.3. Rerun X

9.11. Click on the rerun icon (▶▶) to rerun the inspection.

10.2. Resolve problems X

10.2.1. Implement suggested resolution X

typical suggested solutions

10.2.1.1. Modify X

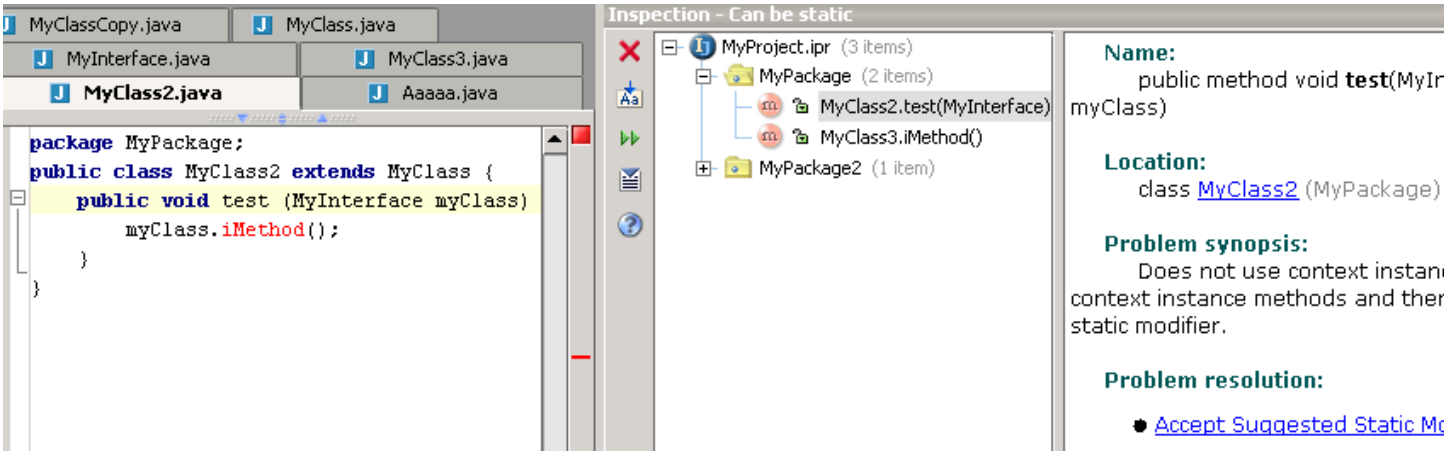


Figure 9.5. Modification suggested (915)

9.12. Click on **Accept suggested static modifier**.

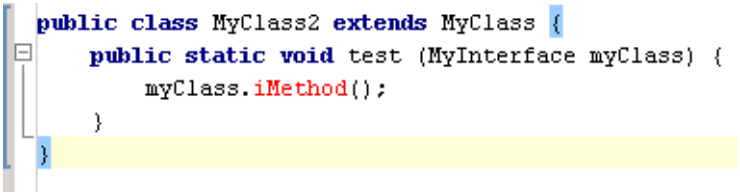


Figure 9.6. Modified (916)

10.2.1.2. Comment out X

9.13.

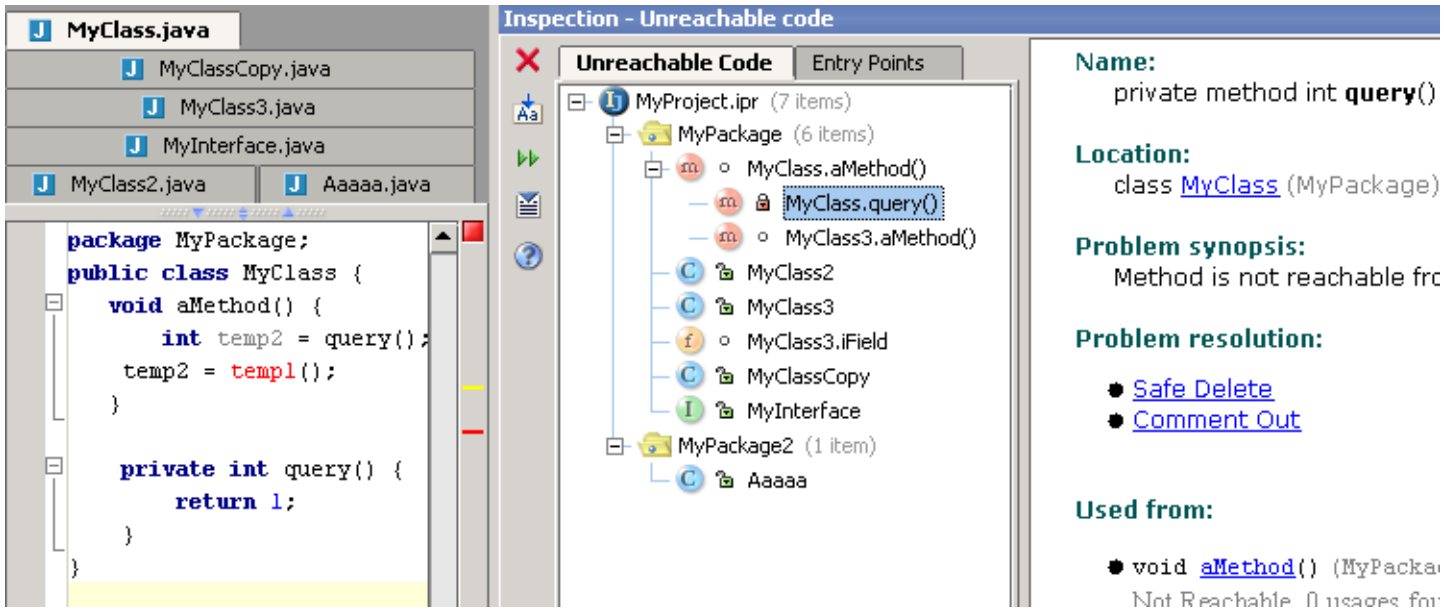


Figure 9.7. Safe delete (913)

9.14. Click on **Comment out**.

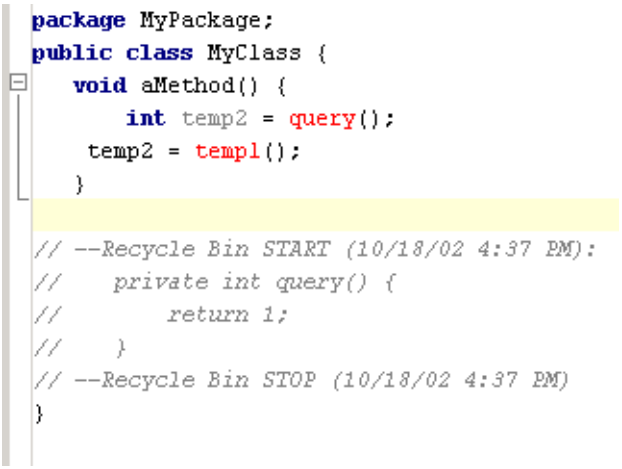


Figure 9.8. Comment out (914)

10.2.1.3. Safe delete X

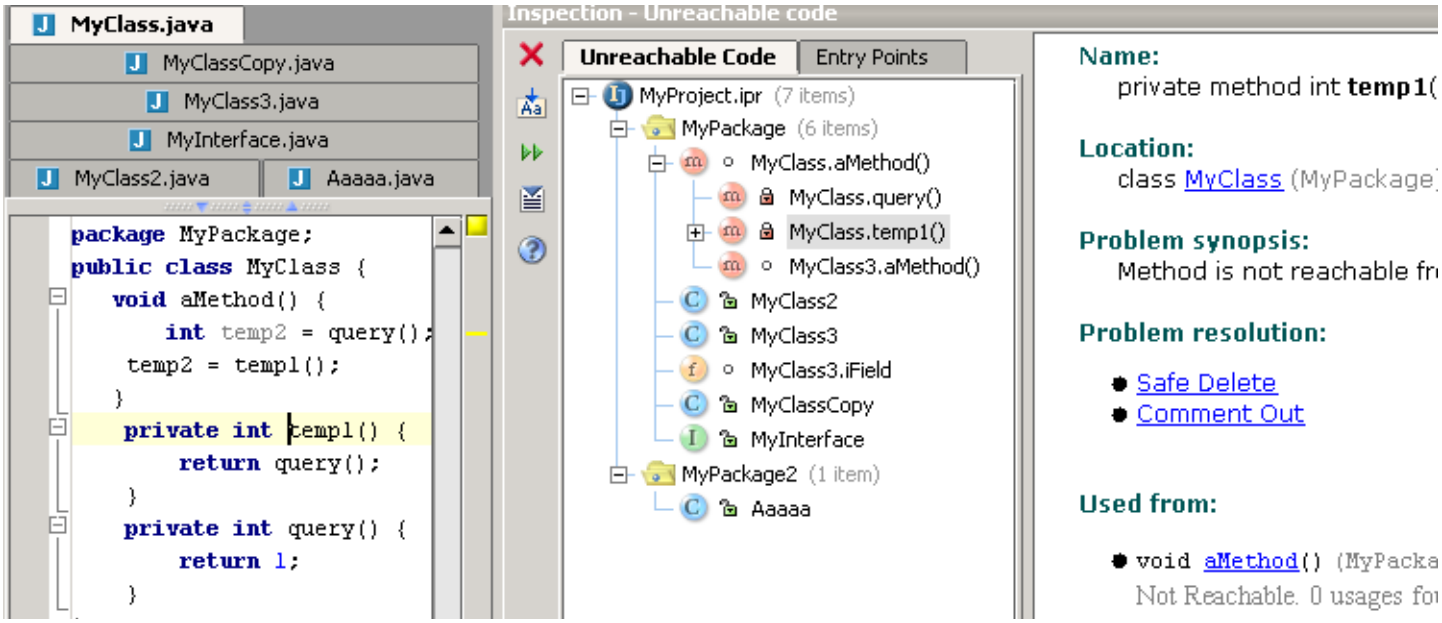


Figure 9.9. Safe delete (909)

9.15. Click on **Safe delete**.

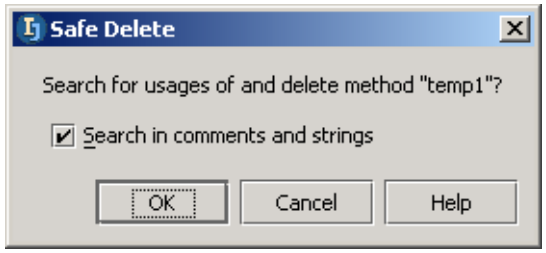


Figure 9.10. Safe delete (910)

9.16. Click **OK**.

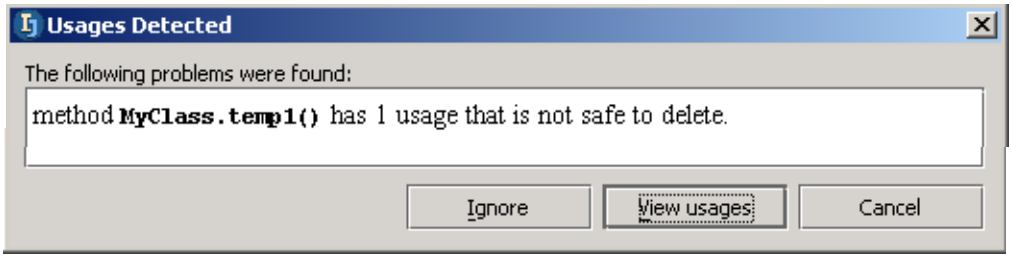


Figure 9.11. Usages detected (911,912)

9.17. Ignore and delete.

10.2.2. Manual X

Autoscroll to source.

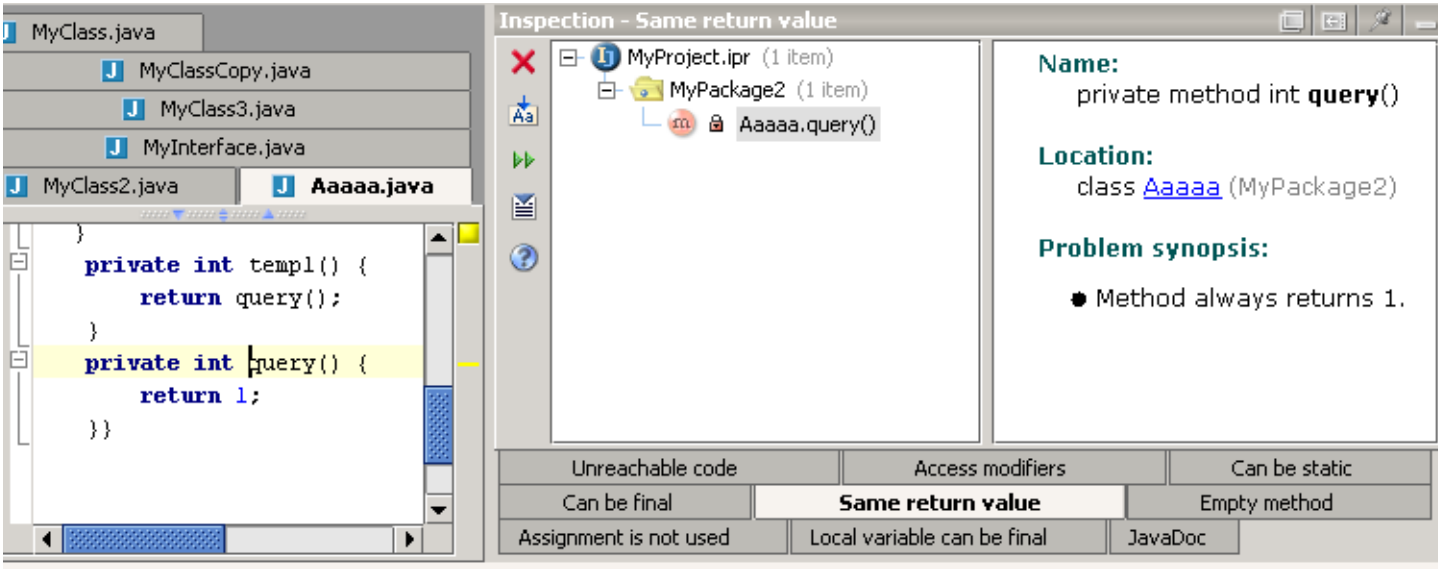


Figure 9.12. xxx (917)

10.3. Supported inspections XXX

10.3.1. Unreachable declaration XXX

10.3.1.1. Options XXX

10.3.1.1.1. Automatically add to entry points XXX

void main(String args[]) methods XXX

JUnit testcases XXX

Applets XXX

Servlets XXX

Classes that have usages in non-java files XXX

10.3.2. Declaration redundancy XXX

10.3.2.1. Declaration access can be weaker XXX

10.3.2.1.1. Options XXX

10.3.2.1.1.1. Suggest XXX

Package local visiblity level for class members XXX

Package local visibility level top-level classes XXX

Private for inner class member when referenced from outer class only XXX

10.3.2.2. Declaration can have static modifier XXX

10.3.2.3. Declaration can have final modifier XXX

10.3.2.3.1. Options XXX

10.3.2.3.1.1. Report XXX

Classes XXX

Methods XXX

Fields XXX

10.3.2.4. Unused method parameters XXX

10.3.2.5. Actual method parameter is the same constant XXX

10.3.2.6. Unused method return value XXX

10.3.2.7. Method returns the same value XXX

10.3.2.8. Empty method XXX

10.3.2.9. Redundant throws clause XXX

10.3.3. Local code analysis XXX

10.3.3.1. Constant conditions & exceptions XXX

10.3.3.2. Unused assignment XXX

10.3.3.3. Redundant type cast XXX

10.3.3.4. Local variable or parameter can be final XXX

10.3.3.4.1. Options XXX

10.3.3.4.1.1. Report XXX

Local variables XXX

Method parameters XXX

10.3.3.5. Declaration has javadoc problems XXX

10.3.3.5.1. Options XXX

10.3.3.5.1.1. Class XXX

10.3.3.5.1.1.1. Scope XXX

10.3.3.5.1.1.2. Required tags XXX

- @author
- @version
- @since

10.3.3.5.1.2. Method XXX

10.3.3.5.1.2.1. Scope XXX

10.3.3.5.1.2.2. Required tags XXX

- @return
- @param
- @throws or @exception

10.3.3.5.1.3. Field XXX

10.3.3.5.1.3.1. Scope XXX

10.3.3.5.1.4. Inner class XXX

10.3.3.5.1.4.1. Scope XXX

10.3.4. Deprecated API usage XXX

10.3.5. equals() and hashCode() not paired XXX

10.3.6. EJB Errors & Warnings XXX

10.3.6.1. Options XXX

10.3.6.1.1. Report XXX

Errors XXX

Warnings XXX

10.4. Entry points XXX

10.4.1. Add XXX

10.4.2. View in inspection (unreachable code) XXX

10.5. Export to html XXX

10.6. Offline inspection results XXX

10.6.1. Create XXX

10.6.2. View XXX

11. Version control

20021022TTT last update.

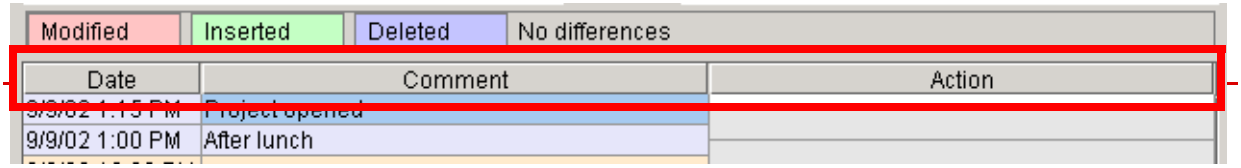
IDEA supports the following versioning tools:

- Local (built-in)
- StarTeam
- CVS
- SourceSafe

This chapter demonstrates:

11.1. Local

20021012TTT: Add colors and fonts for local
CONTACT: valya or mike.
20020908TTT: ?? recommended changes to the history dialog:
current...



?? Current history dialog (516)
recommended...

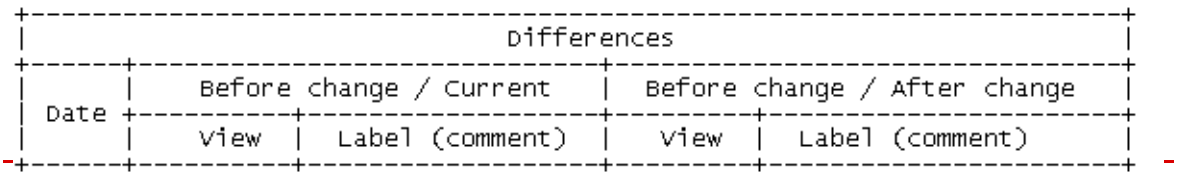


Figure 9.13. ?? Recommended changes to History dialog (517)

- In the "view" column: A button you click to view the selected change.
- In the "label" column: The text comment.

Also... the rows would be side-by-side (not zigzag as current).

IDEA's local versioning tool provides all-around versioning functionality. This section demonstrates the following local VCS functionality:

11.1.1. Open History dialog

10.1. Create class **MyVCSLocal** (by selecting **New | Class** and not making any changes).
10.2. Right-click on **MyVCSLocal**.
10.3. Select **Local VCS | Show history**. The History dialog appears.

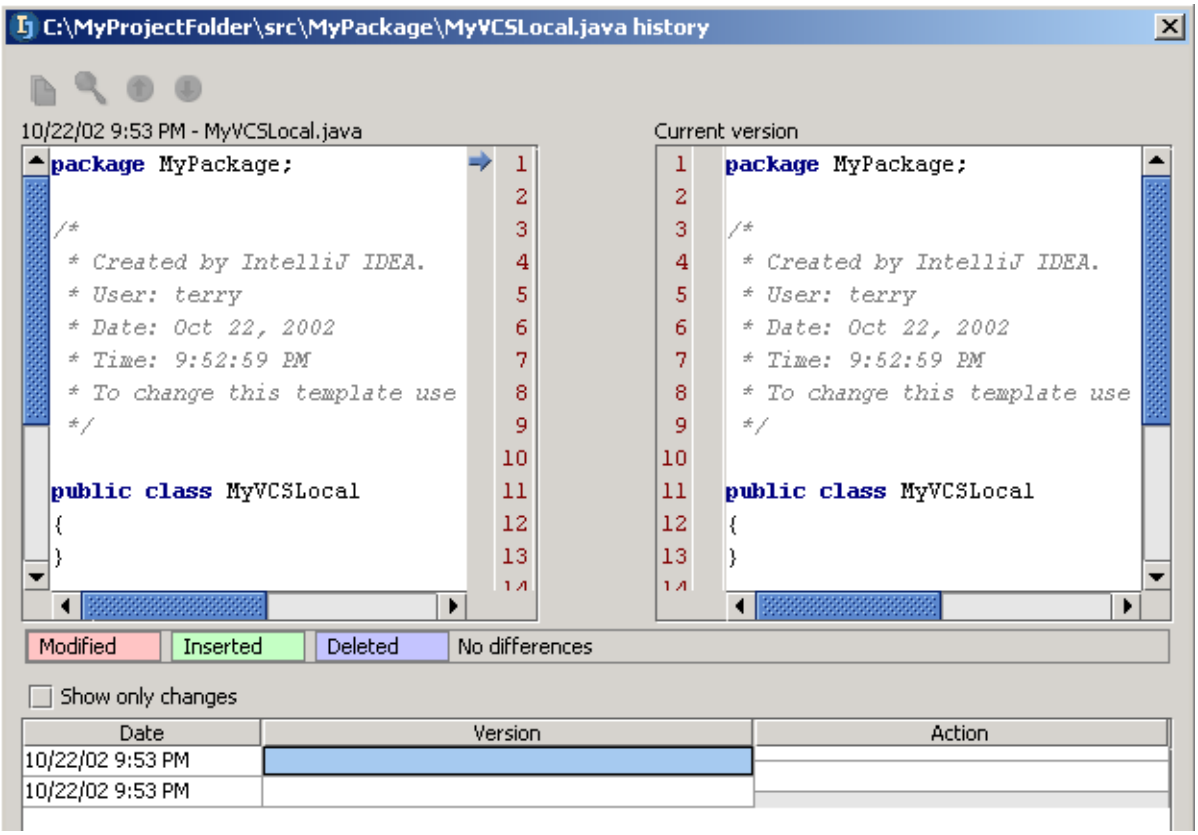


Figure 10.1. History dialog (527)

Note that only the current version is shown (no changes have been made).

11.1.2. Insert

20020909TTT: XXX need to add more detail about where to put the cursor so that you get an “insert” and not a “modify”.

This section shows how inserted text is displayed in local VCS.

10.4. Close the history dialog.

10.5. Add the following lines (type in, do not paste) to MyVCSLocal:

```
public static void main(String[] args) {
    System.out.println("Hello");
}
```

10.6. Reopen the history dialog.

10.7. Click on the lowest cell in the “Comment” column. The dialog shows the inserted text.

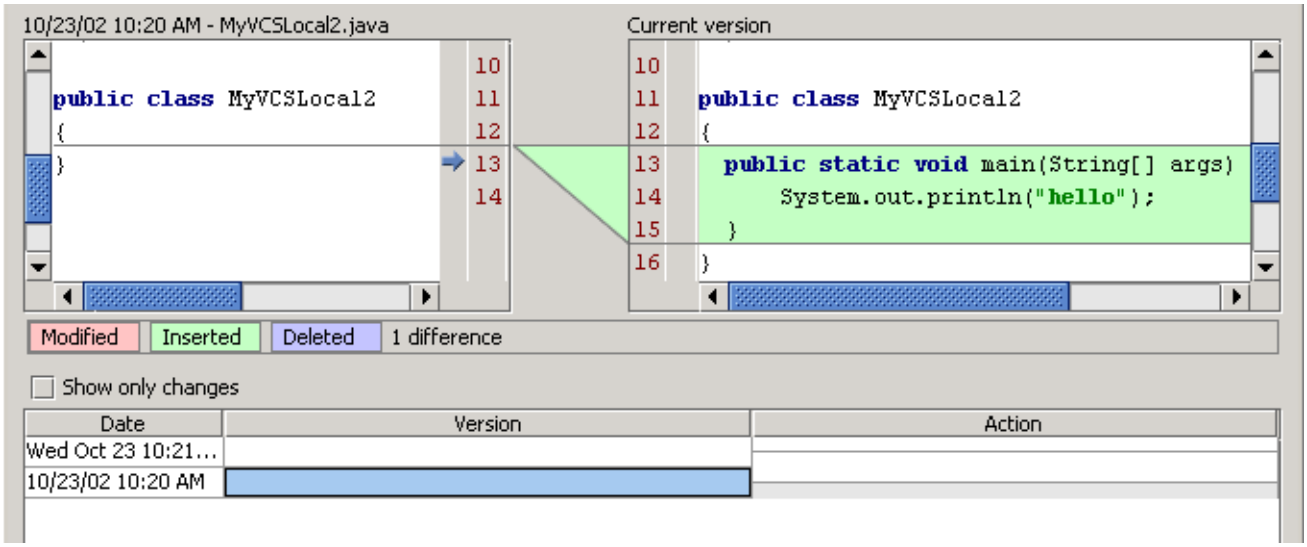


Figure 10.2. Inserted changes in history dialog (526)

11.1.3. Modify

10.8. Close the history dialog.
10.9. Change “Hello” to “**Hello World**”.
10.10. Open the history dialog.
10.11. Click on the second cell from the bottom in the “Comment” column. The dialog shows the modified line.

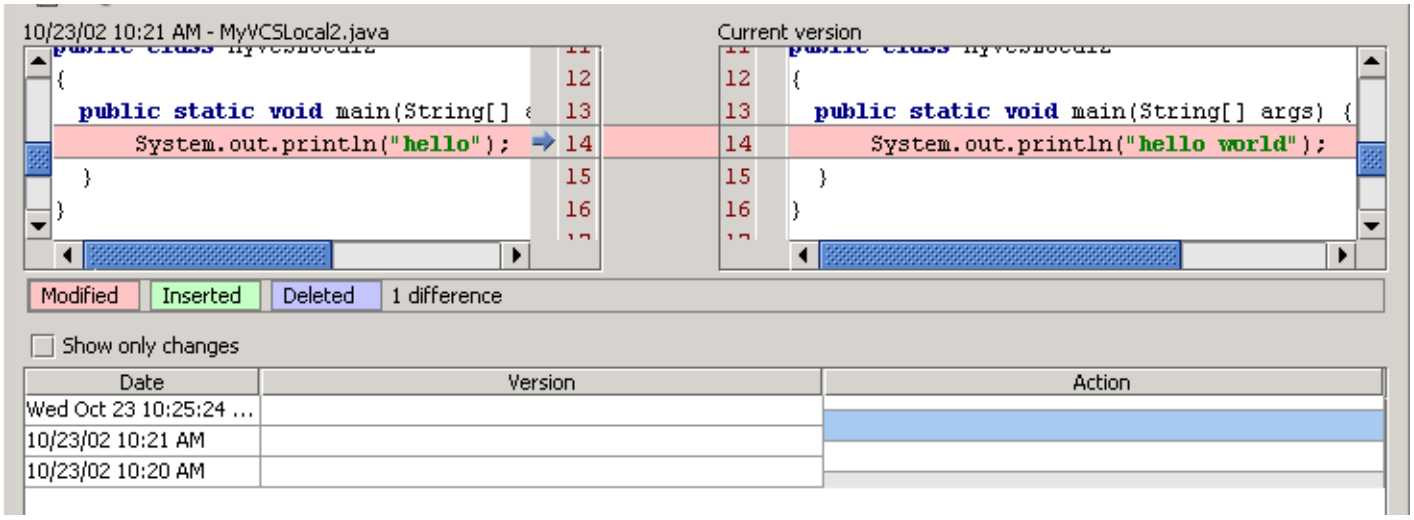


Figure 10.3. Modification in history dialog (523)

11.1.4. Delete

10.12. Close the history dialog.
10.13. Delete the line

```
System.out.println("Hello World");
```

10.14. Open the history dialog.
10.15. Click on the 3rd cell from the bottom in the “Comment” column. The deleted line is shown.

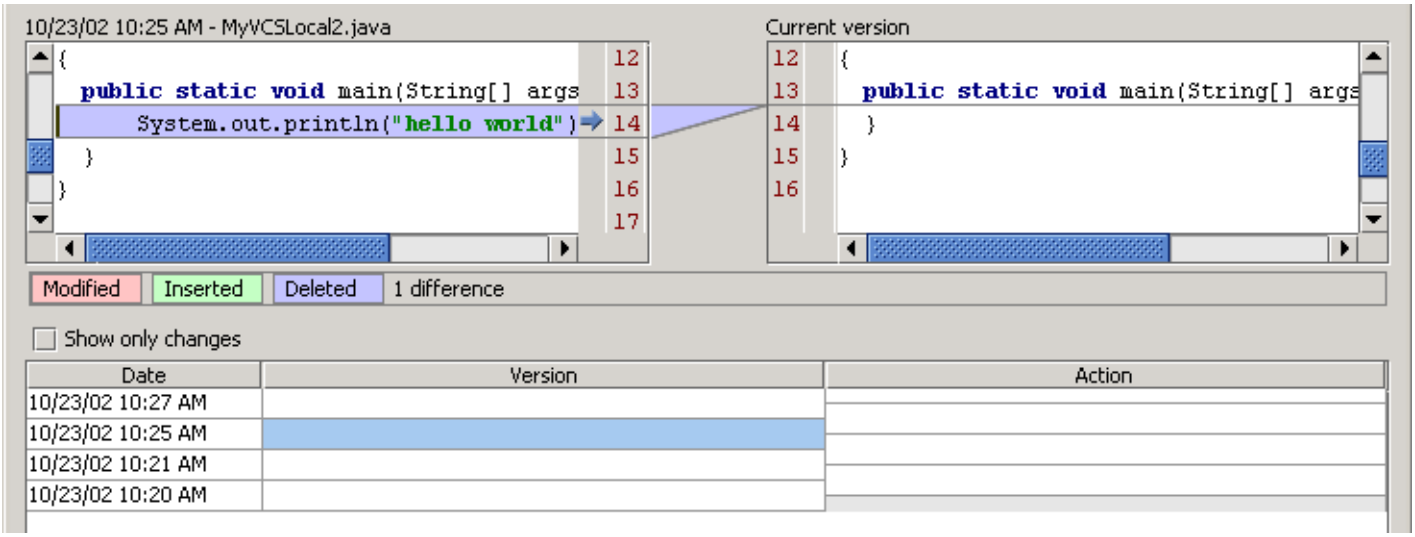


Figure 10.4. Deleted line in history dialog (522)

11.1.5. Rollback

10.16. Right-click on the 3rd cell from the bottom in the “Comment” column. A context menu appears.

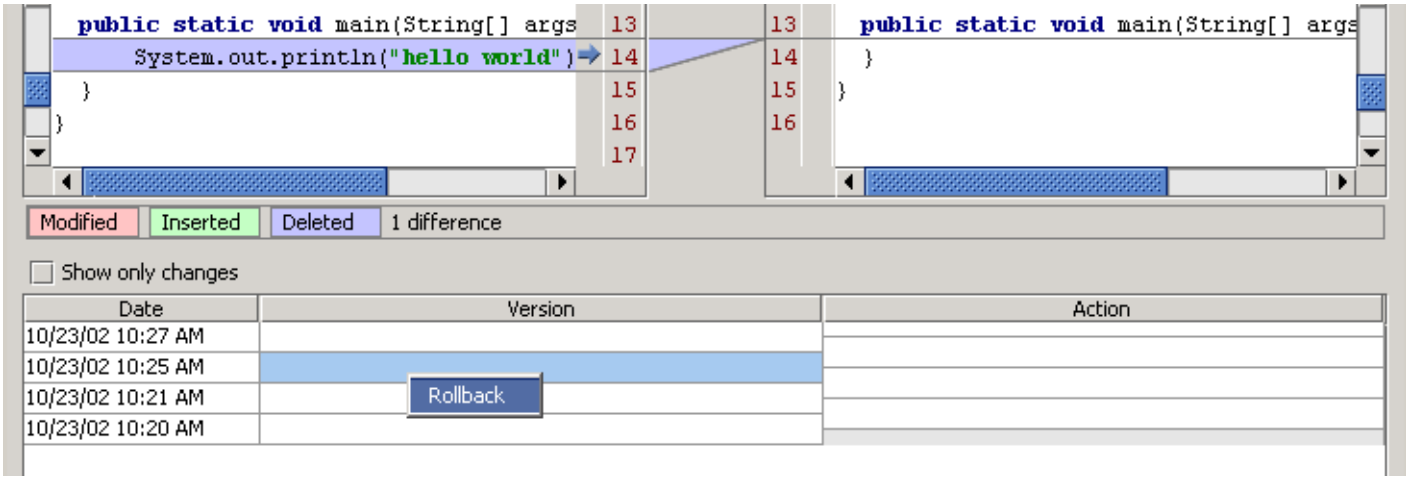


Figure 10.5. Rollback context menu (521)

10.17. Click **Rollback**. A message dialog appears “Rollback to the selected state?”.

10.18. Click **OK**. The code line is added and the history dialog is closed.

10.19. Reopen the history dialog.

10.20. Click on the 4th cell from the bottom in the “Comment” column. The dialog shows the rolled back change.

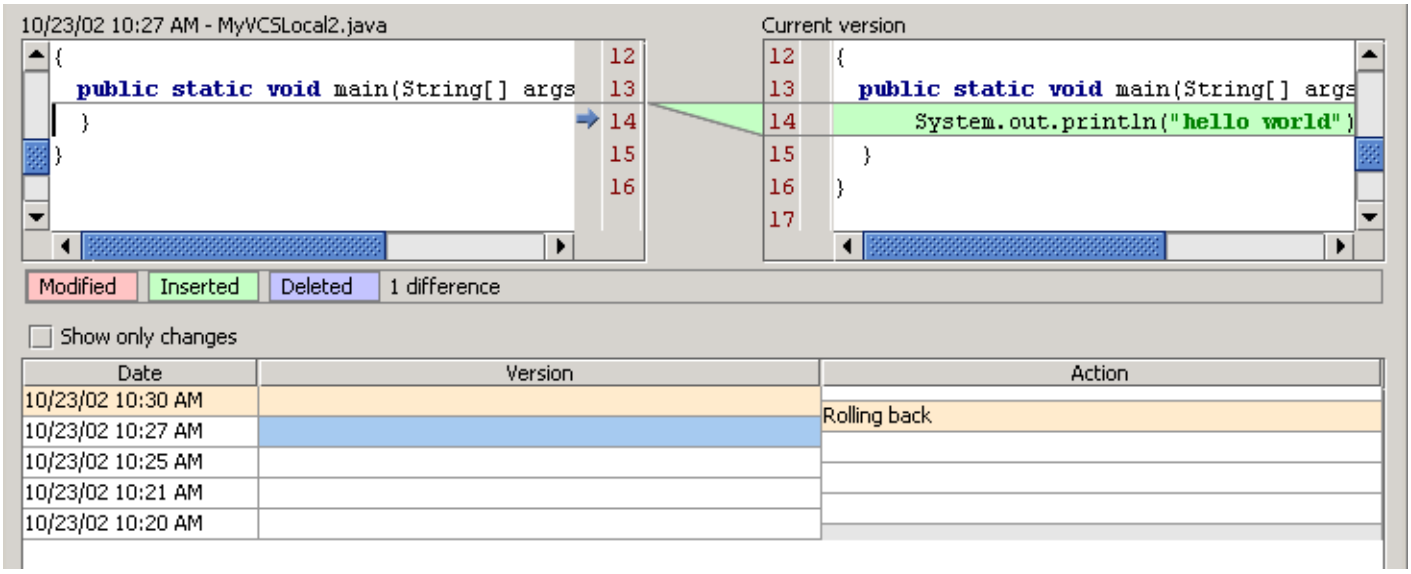


Figure 10.6. Rollback in history dialog (520)

11.1.6. Viewing changes

The history dialog shows the differences

11.1.6.1. Between version before change and current version

10.21. Click on the lowest cell in the “Comment” column. The dialog shows the changes between

- The file before the action was made
- The current (final) version of the file

20020909TTT: ?? why is the “modify”ed text not shown in pink?

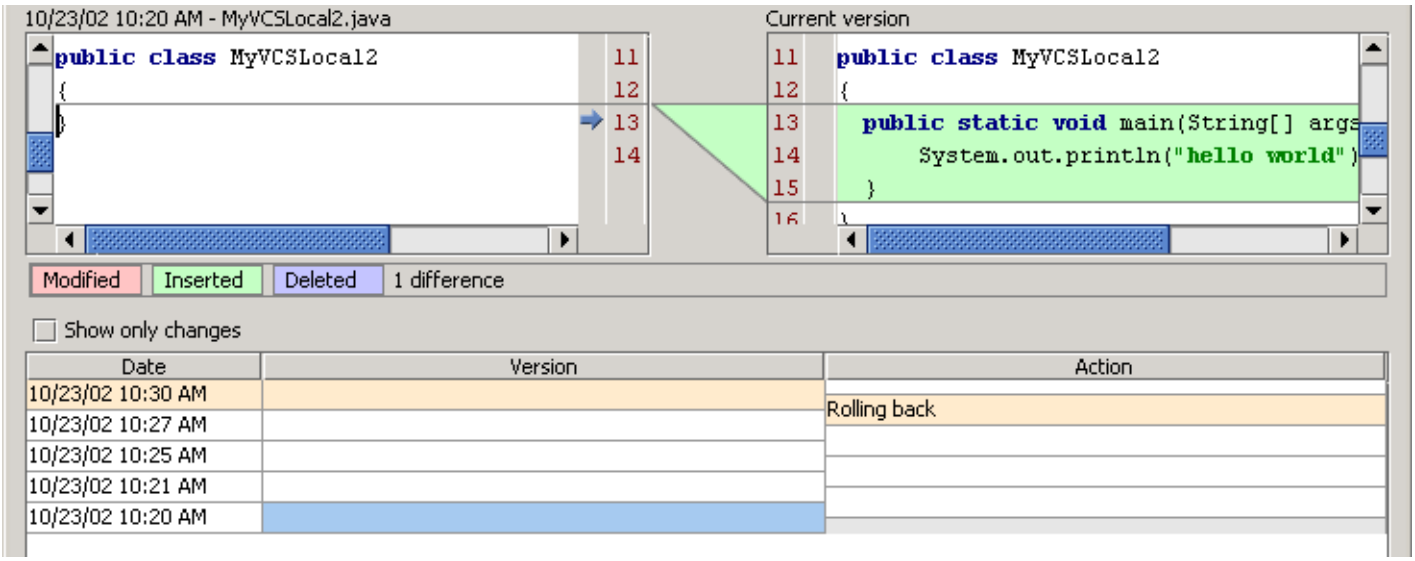


Figure 10.7. Differences between the original and the current version (525)

11.1.6.2. Between versions before/after change

10.22. Click on the lowest cell in the “Action” column. The dialog shows the changes between

- The file before the action was made
- The file after the action was made

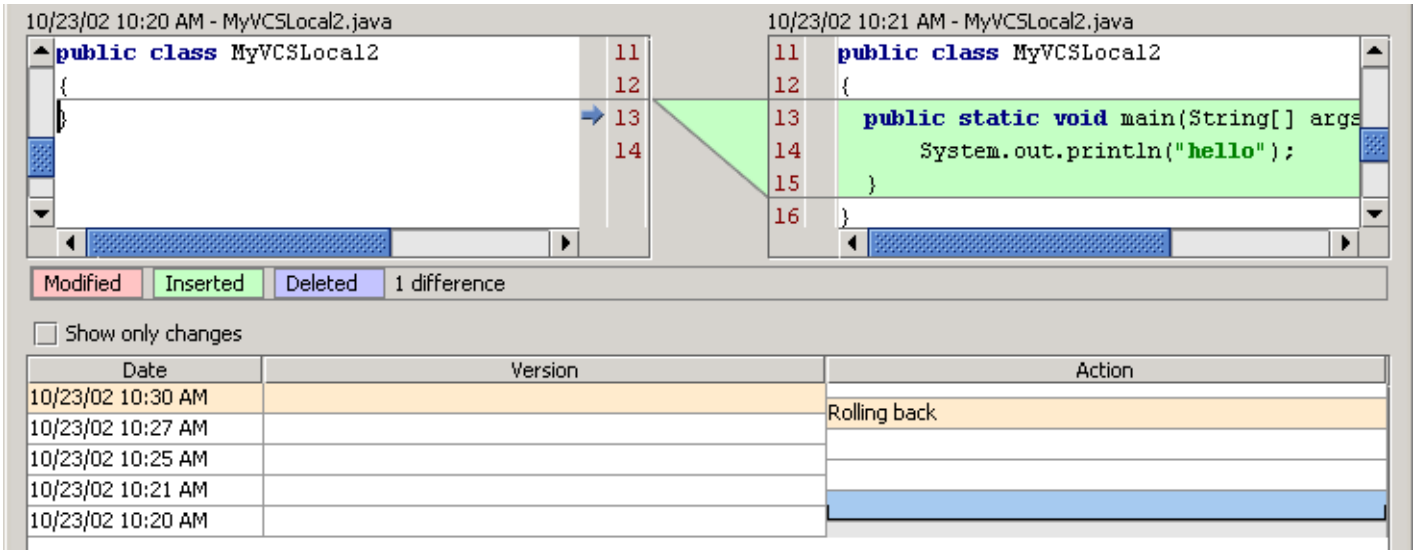


Figure 10.8. First action taken on file (524)

11.1.7. Labels

10.23. Close the History dialog.
10.24. Right-click on **MyVCSLocal**.
10.25. Select **Local VCS | Add label**. The dialog “Add label” appears.
10.26. For “Label name” enter **Label1**.

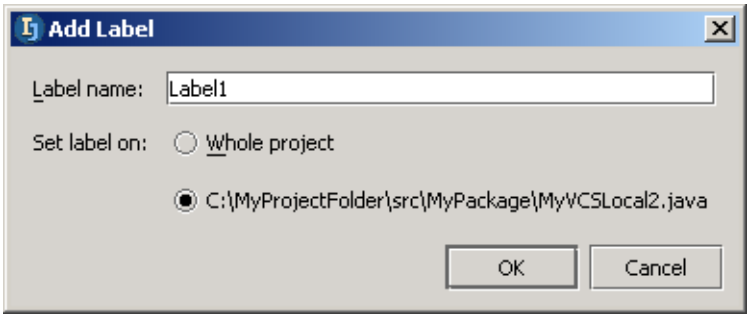


Figure 10.9. Add label dialog (519)

10.27. Click **OK**.
10.28. Open the History dialog. Note the label.

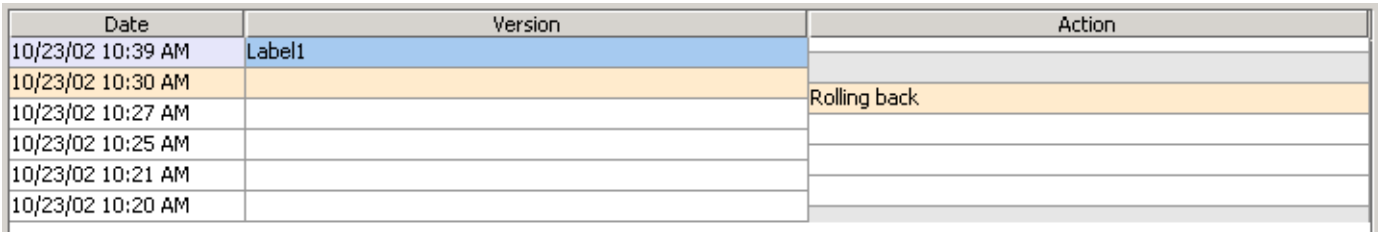


Figure 10.10. Label in history dialog (518)

~~11.2. CVS XXX~~

~~CONTACT: zheka~~

~~11.3. SourceSafe XXX~~

~~CONTACT: vova~~

11.4. StarTeam

20021023TT text added.
CONTACT: vova
idea.bat: SET CLASS_PATH=%CLASS_PATH%;%IDEA_HOME%\lib\starteam-sdk.jar

11.4.1. Install

10.29. Copy **C:\idea650\starteam_plugin\starteam.jar** to **C:\idea650\plugins**.
10.30. Add **C:\Program Files\Starbase\StarGate SDK\Lib\starteam-sdk.jar** to idea **classpath**.

Figure 10.11. StarTeam classpath (266)

11.4.2. Configure connection

10.31. For VCS Support select **StarTeam**.

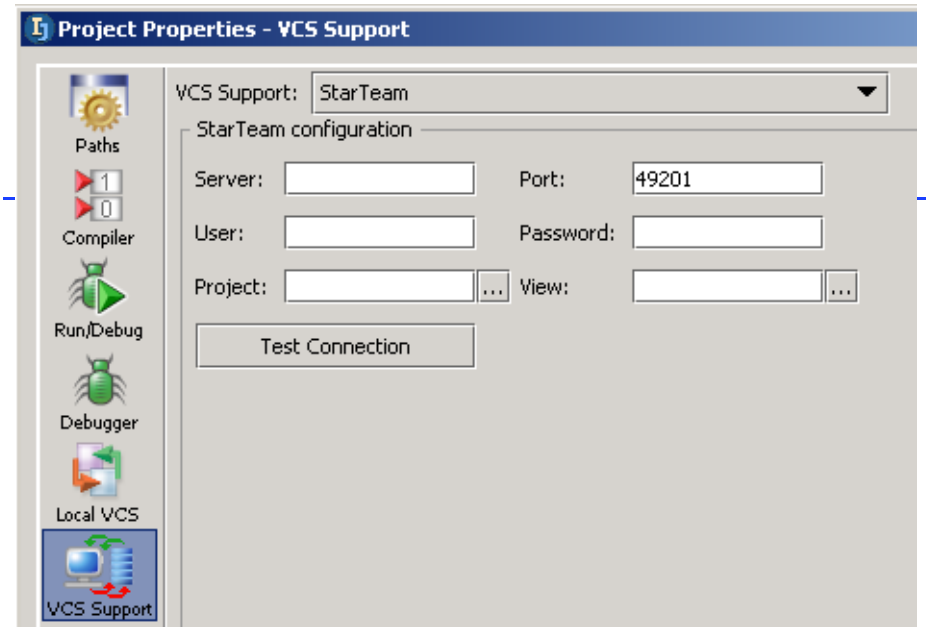


Figure 10.12. VCS Support StarTeam (265)
10.32. Enter following:

- Server
- Port
- User
- Password
- Project
- View

10.33. Click **Test Connection**. The dialog "Connection successful" appears.

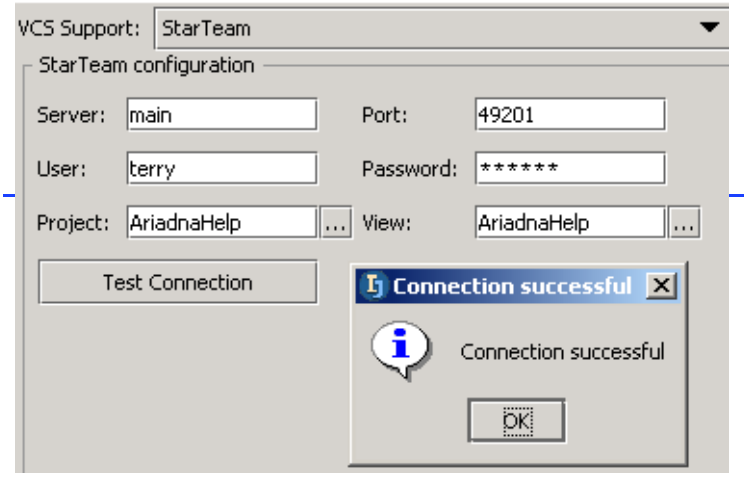


Figure 10.13. StarTeam configuration (264)

10.34. Click **OK**.

11.4.3. Add StarTeam dir to project

10.35. Add the folder:

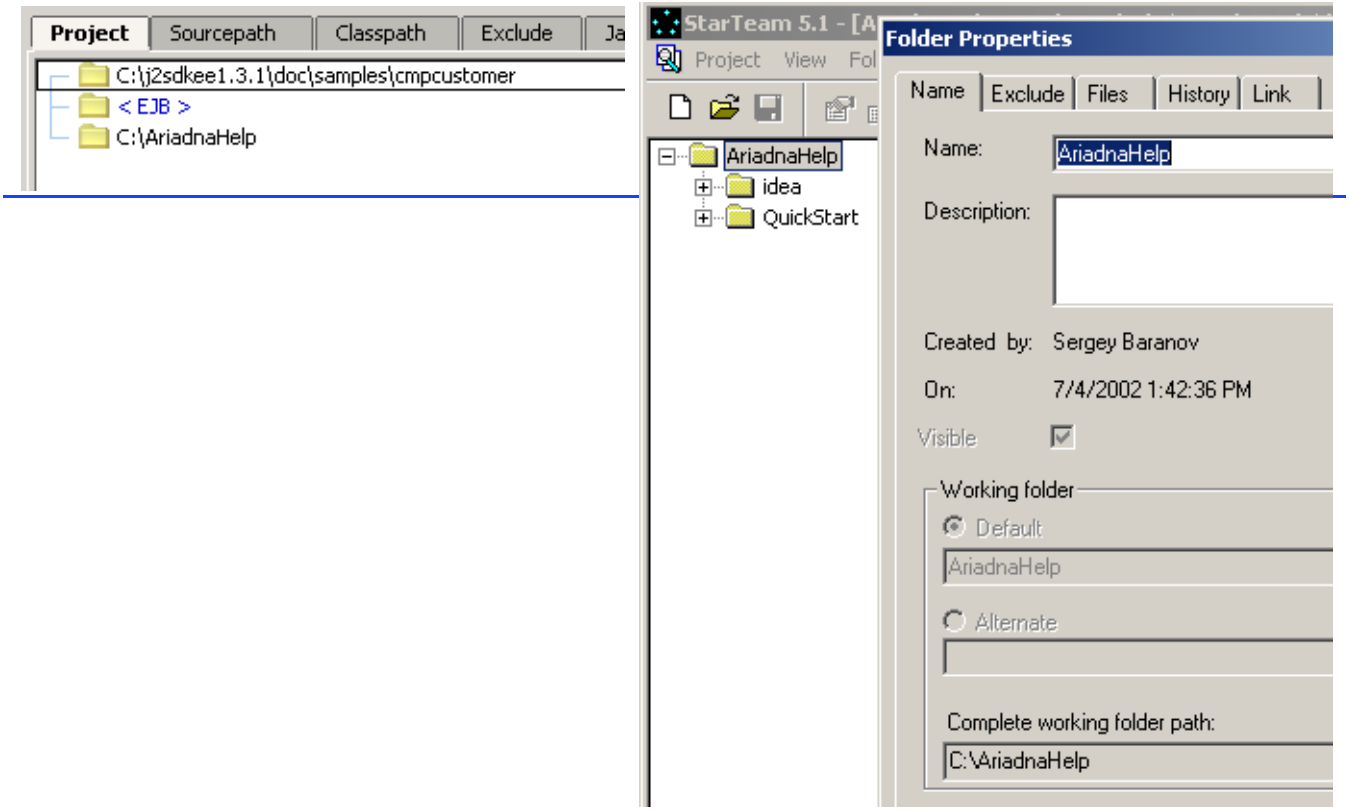


Figure 10.14. StarTeam folder added to project (263,262)

11.4.4. Create dir / file

10.36.

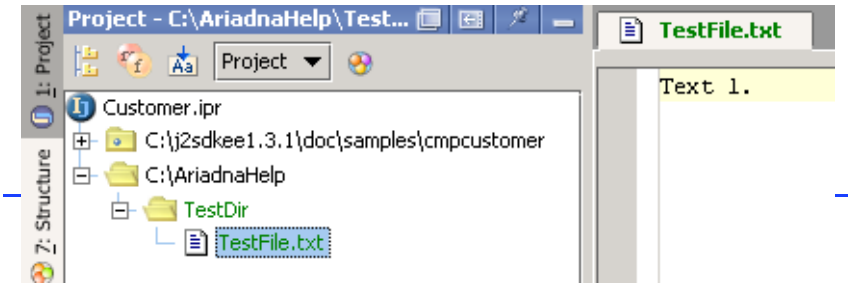


Figure 10.15. Dir, folder added (261)

11.4.5. Check in

10.37. Right click on TestFile.txt.
10.38. Select Check in Project.

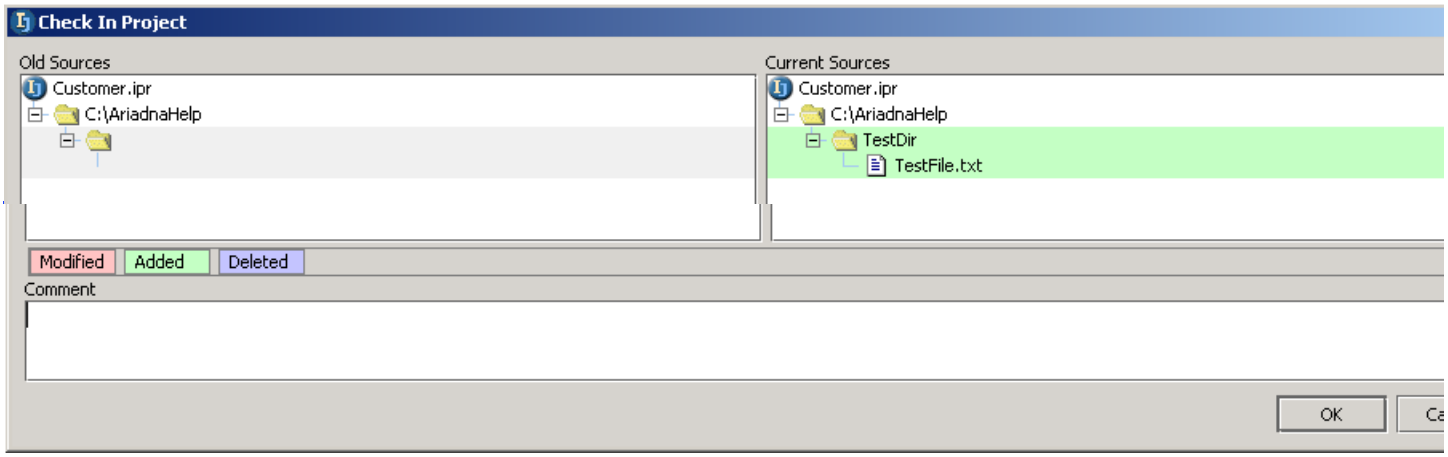


Figure 10.16. xxx (260,259)
10.39. Click **OK**.

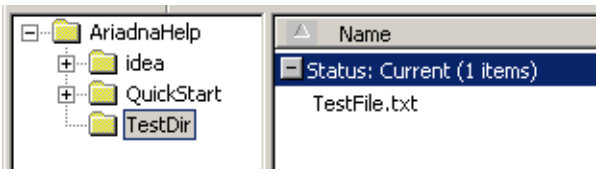


Figure 10.17. xxx (258)

11.4.6. Show differences

10.40. Add second line “Text 2.” to TestFile.txt.
10.41. Select StarTeam / Show difference.

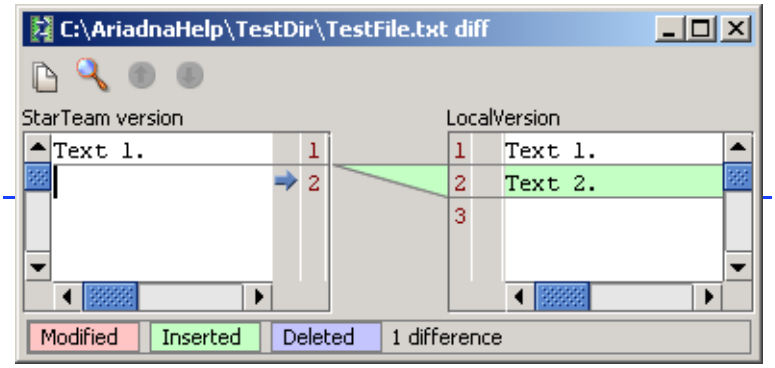


Figure 10.18. xxxx (257)

11.4.7. Check in

10.42. Right click on TestFile.txt.
10.43. Select Check in Project.

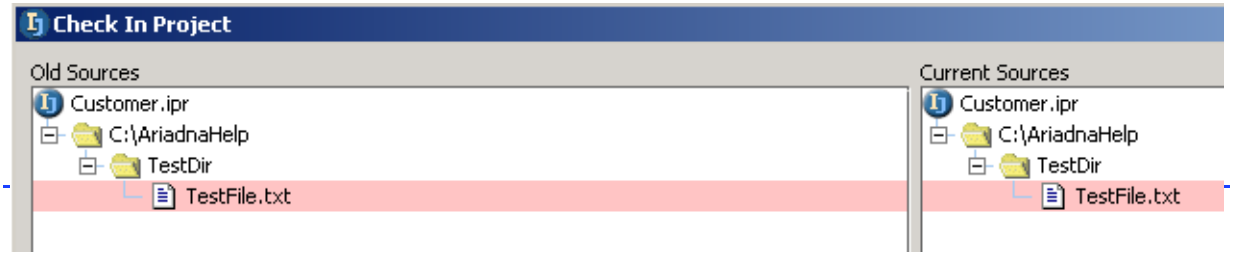


Figure 10.19. xxx (256)

12. Java Doc

20021023TT last edit.
contacts: anton

This chapter demonstrates the following:

12.1. JDK JavaDoc

This section shows how to

the JDK JavaDoc.

12.1.1. Install

11.1. Download the Java 2 SDK documentation (**j2sdk-1_4_1-doc.zip**) from java.sun.com.
11.2. Extract to **c:\IntelliJ-IDEA-3.0** (use folder names).

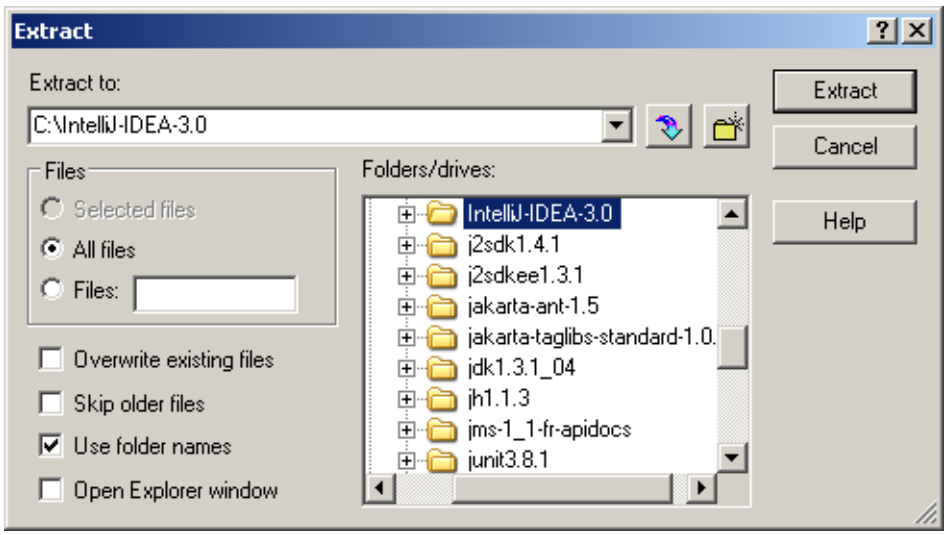


Figure 11.1. J2SDK docs extraction (933)

The javadoc api for the JDK classes are now located in c:\IntelliJ-IDEA-3.0\docs\api.

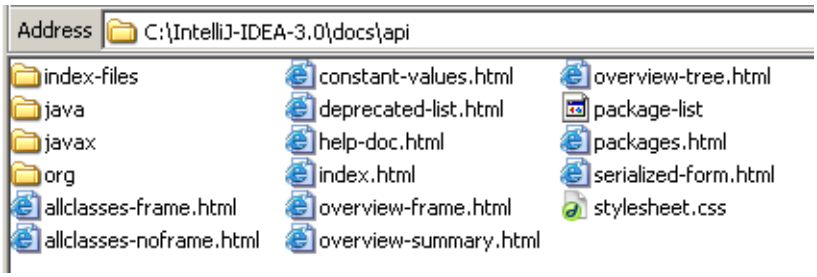


Figure 11.2. JavaDoc API dir (313)

11.3. In dialog “Project Properties” tab “Paths” tab “JavaDoc Paths”: Add the directory **c:\IntelliJ-IDEA-3.0\docs\api**.

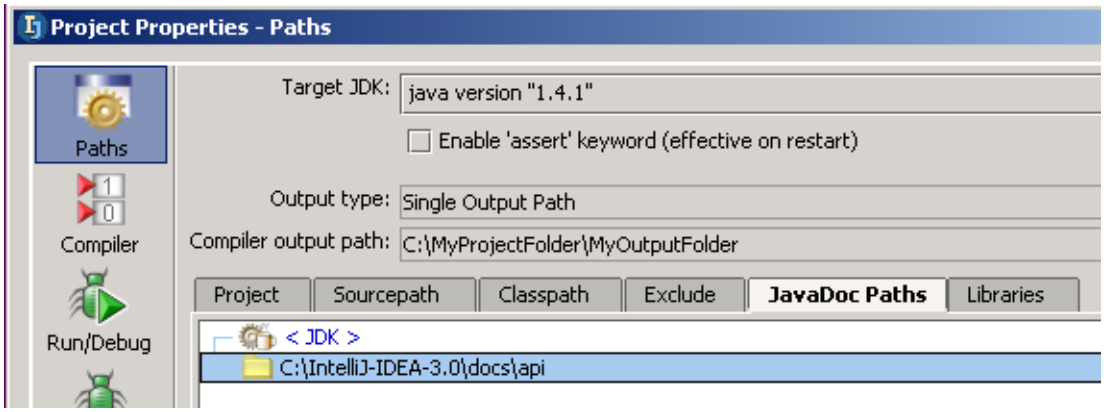


Figure 11.3. JavaDoc path (934)

12.1.2. View

This section shows how to open JavaDoc for

- 12.1.2.1. All (page 271)
- 12.1.2.2. For element (page 271)

12.1.2.1. All

11.4. Open **C:\IntelliJ-IDEA-3.0\docs\api\index.html**. The JavaDoc API docs start page appears.

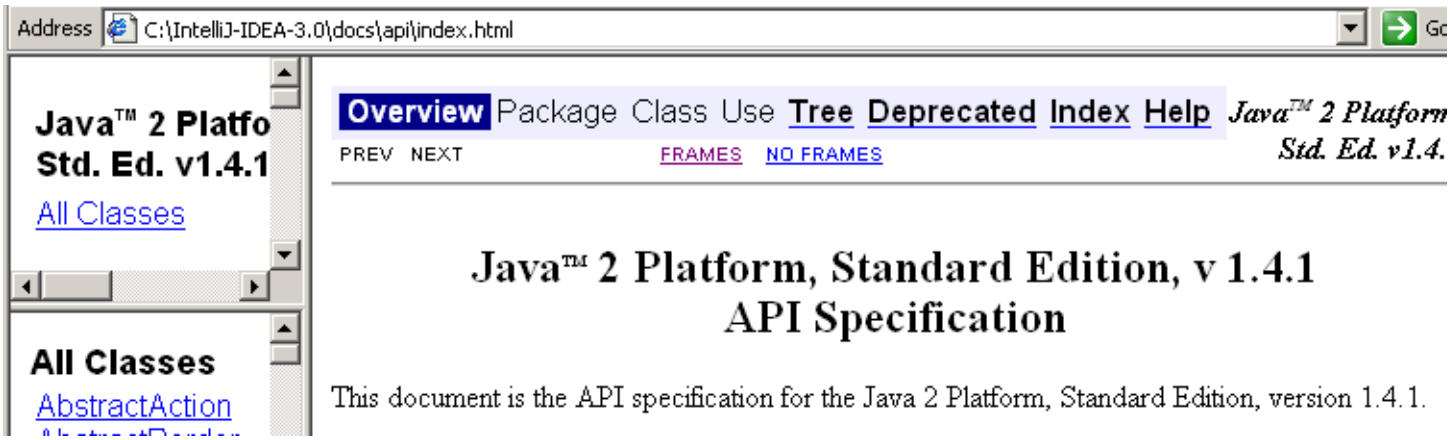


Figure 11.4. JavaDoc start page (312)

12.1.2.2. For element

You can open the JavaDoc description for an API class direct from within IDEA.

11.5. Select class Applet as shown below.

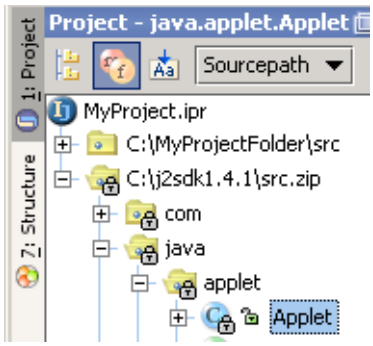


Figure 11.5. Select Applet (311)

11.6. Select **View | External Java doc**. The java documentation for class Applet is opened in an editor.

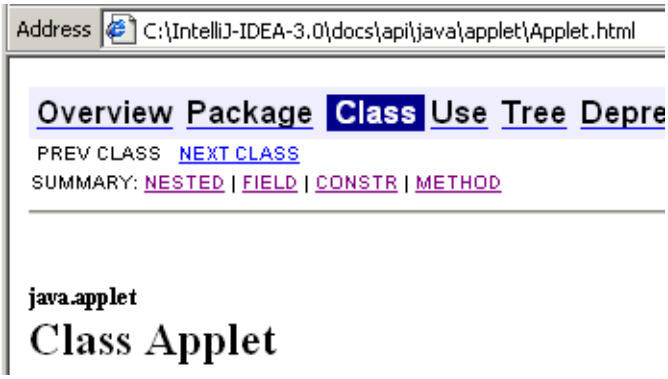


Figure 11.6. JavaDoc for Applet (310)

11.7. Open the source code for Applet.java as shown below.

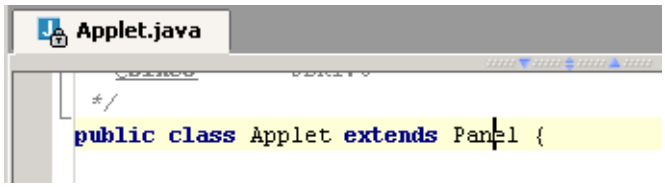


Figure 11.7. Applet source (309)

11.8. Place the cursor on **Panel**.

11.9. Click **Shift-F1**. JavaDoc for Panel is opened.

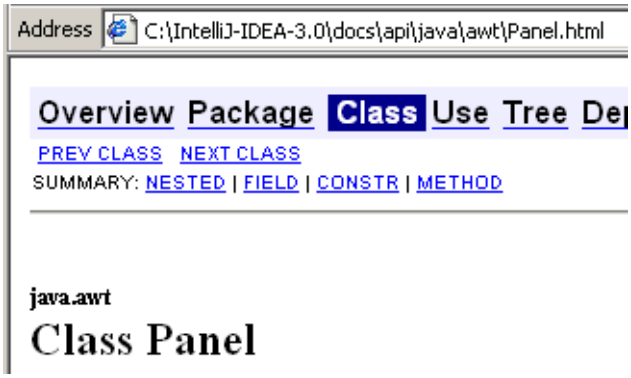


Figure 11.8. JavaDoc for Panel (308)

12.2. Quick JavaDoc

This section shows how to display IDEA's quick JavaDoc for

12.2.1. JDK class

When opening quick JavaDoc for a JDK class, you can

12.2.1.1. Open for selected

11.10. Place the cursor on "Applet" in the class definition.
11.11. Press **Ctrl-Q**. The quick javadoc popup for "Applet" appears.

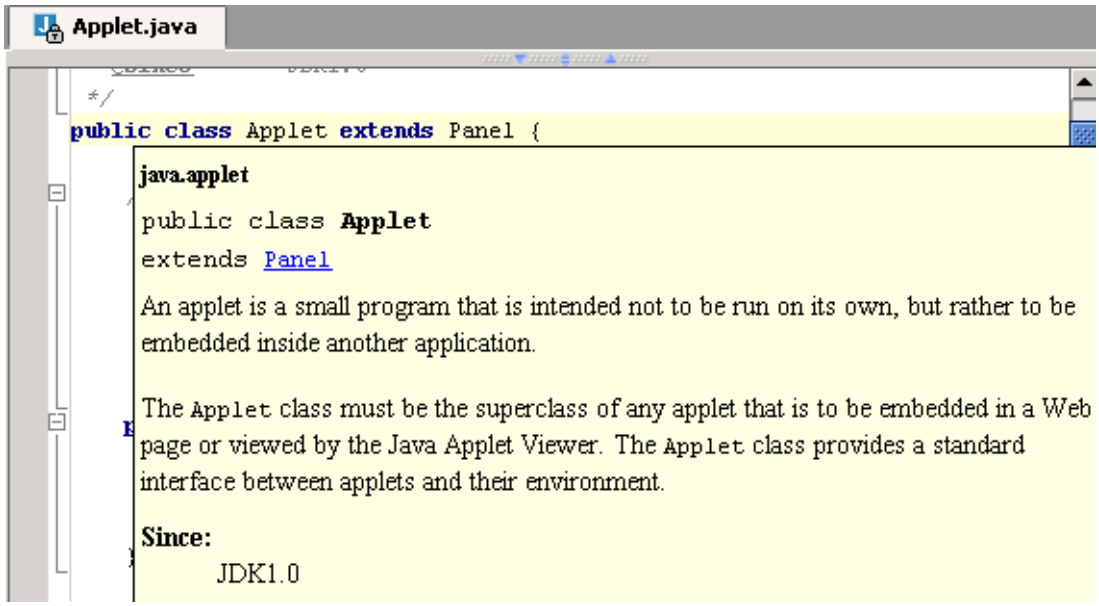


Figure 11.9. Quick JavaDoc for Applet (306)

Note that the above javadoc was generated directly from the contents of the file.

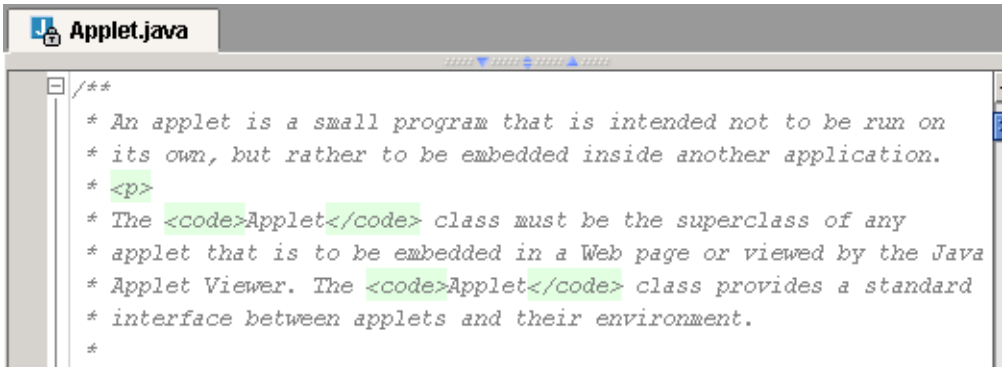


Figure 11.10. Applet definition (307)

12.2.1.2. Open for other

11.12. Click on the hyperlink for **Panel**. The quick javadoc for “Panel” is opened.

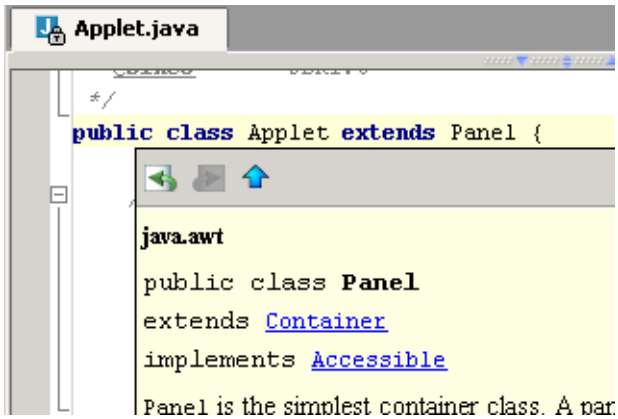


Figure 11.11. Quick JavaDoc for Panel (305)

Note: You can go back to the previous quick javadoc popup dialog by pressing the arrow icon ( ).

12.2.1.3. Open JDK JavaDoc

11.13. Click on the icon “View external JavaDoc” ( ). The external JavaDoc for Panel is opened.

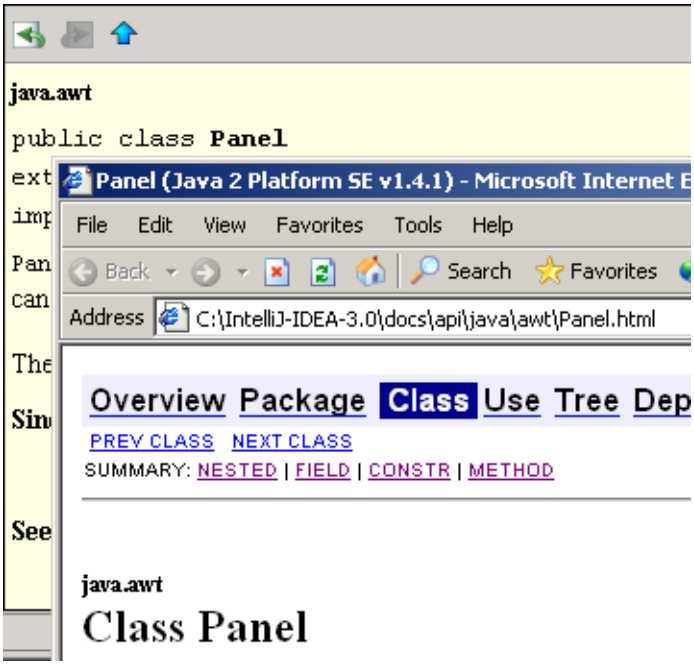


Figure 11.12. JavaDoc for Panel (302)

12.2.2. Own class

This section shows how to

- **12.2.2.1. Open (page 275)**

quick JavaDoc for your own class. You will also

- **12.2.2.2. Attempt to open JDK JavaDoc (none) (page 275)**

for your own class (this will not work at this point).

12.2.2.1. Open

11.14. Create class **MyClass**:

```
package MyPackage;
public class MyClass {}
```

11.15. Place the cursor on **MyClass**.

11.16. Click **Ctrl-Q**. The quick javadoc is opened.

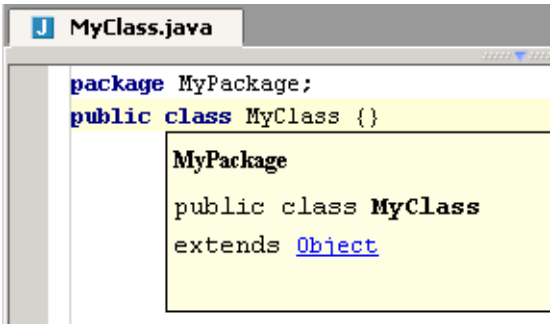


Figure 11.13. Quick JavaDoc for own class (301)

12.2.2.2. Attempt to open JDK JavaDoc (none)

20021023TTT the javadoc arrow doesnt appear above.

11.17. Try to open JavaDoc for MyClass. Note the error:

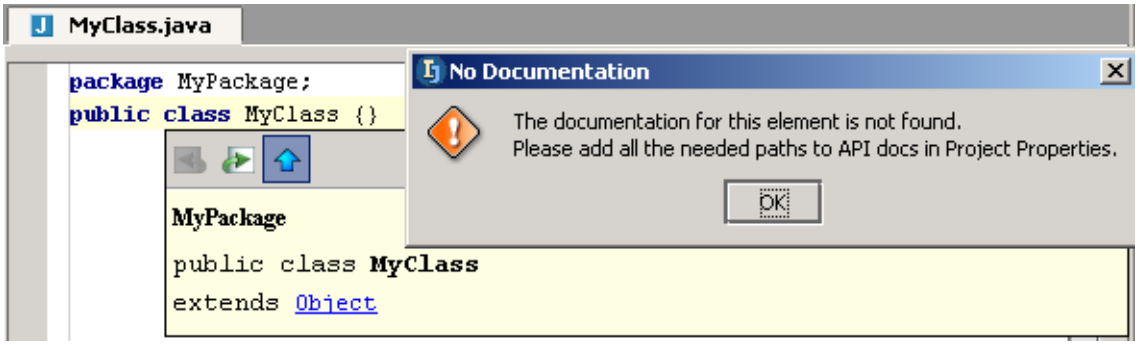


Figure 11.14. JavaDoc error for MyClass (300)

12.3. JavaDoc tags

This section shows how to

12.3.1. Add tags

11.18. Create class:

```
package MyPackage;
public class MyClass {
public int aMethod(int param1, int param2) {
              return param1 + param2;
    }
}
```

11.19. Place the cursor at the beginning of the line:

```
public int aMethod(int param1, int param2) {
```

11.20. Enter "**/****".

11.21. Press **Enter**. The tags for the method are entered:

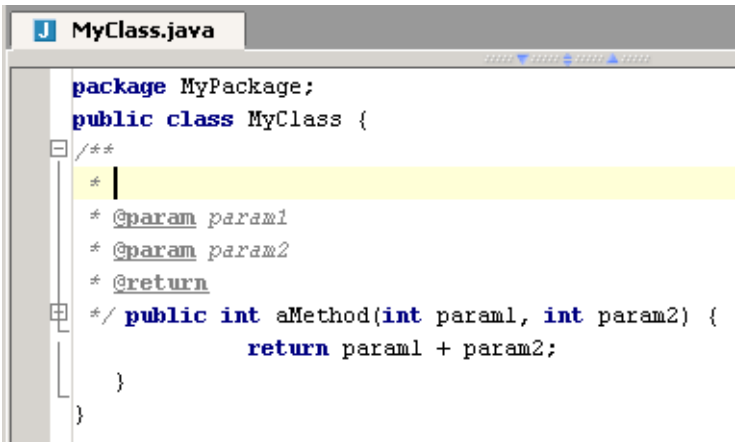


Figure 11.15. JavaDoc method tags (299)

11.22. Place the cursor after the "*" on line 4 (it is probably already there).

11.23. Enter **@**. Note that a popup dialog appears.

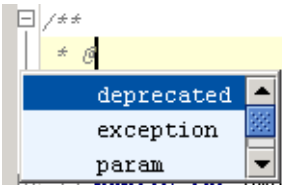


Figure 11.16. @ popup (298)

11.24. Double-click **exception**. "exception" is added.

11.25. Click **Space**.

11.26. Click **Ctrl-Space**. A popup dialog with a list of exceptions appears.

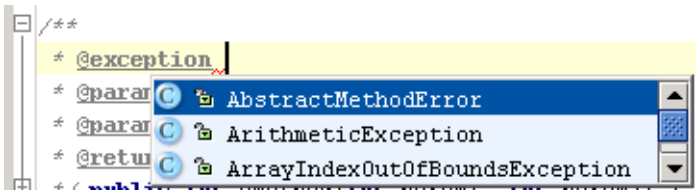


Figure 11.17. Exception list (297)

11.27. Double-click on **Unknown error**.

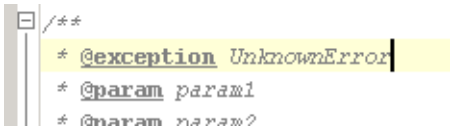


Figure 11.18. UnknownError tag added (296)

12.3.2. Display tags in quick JavaDoc

11.28. Place the cursor on **aMethod**.

11.29. Click **Ctrl-Q**. Quick JavaDoc is displayed.

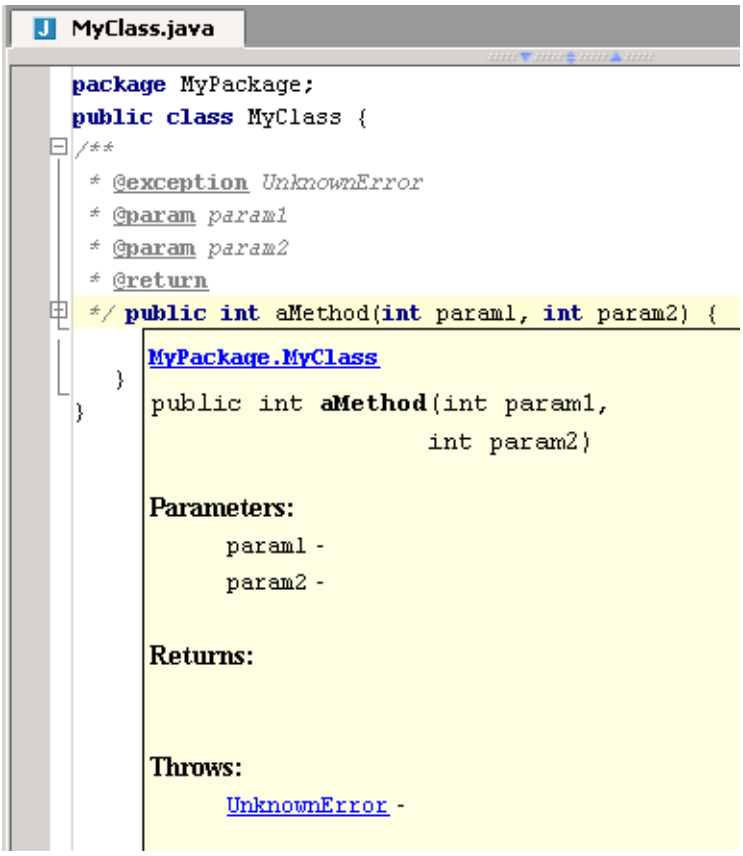


Figure 11.19. Quick JavaDoc for MyClass (295)

12.4. Own JavaDoc

This section demonstrates how to

your own JavaDoc.

12.4.1. Generate

11.30. Select **MyPackage**.
11.31. Select **Tools | Generate JavaDoc...**. The dialog “Generate JavaDoc” appears.
11.32. Select **Package “MyPackage”**.
11.33. For “Output directory” enter **c:\IntelliJ-IDEA-3.0\MyJavaDoc** (create the directory).

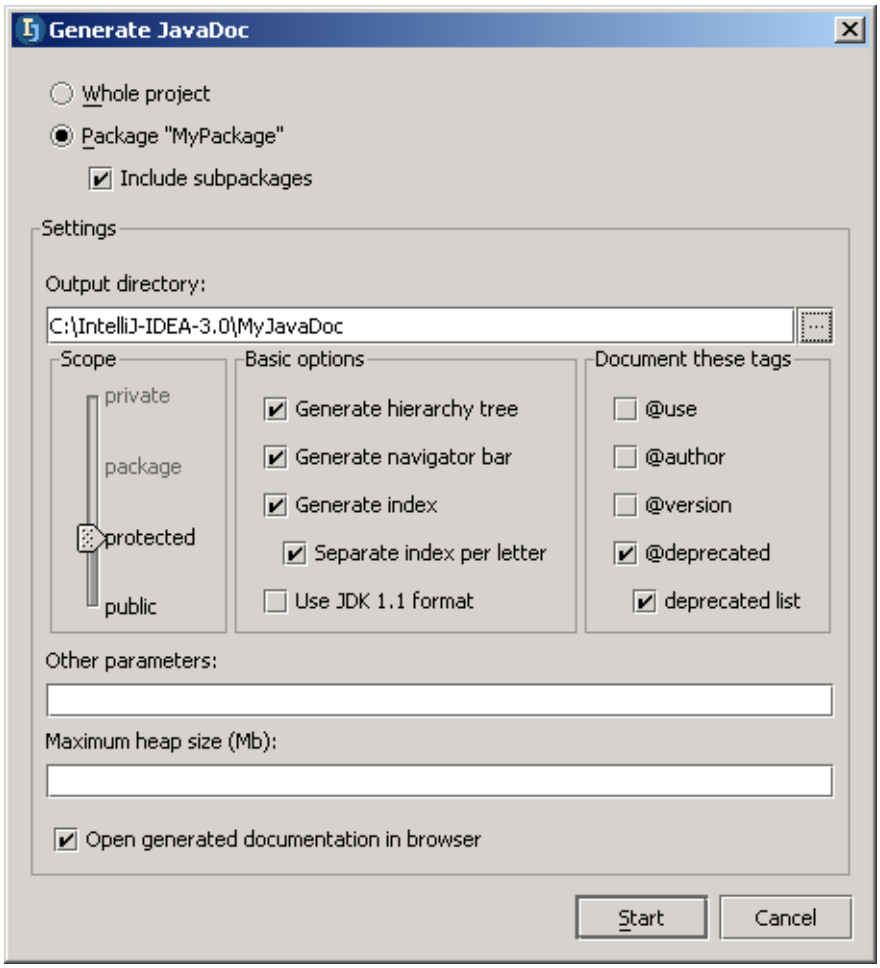


Figure 11.20. Dialog “Generate JavaDoc” (294)

11.34. Click **Start**. The tool “Run - JavaDoc” appears.

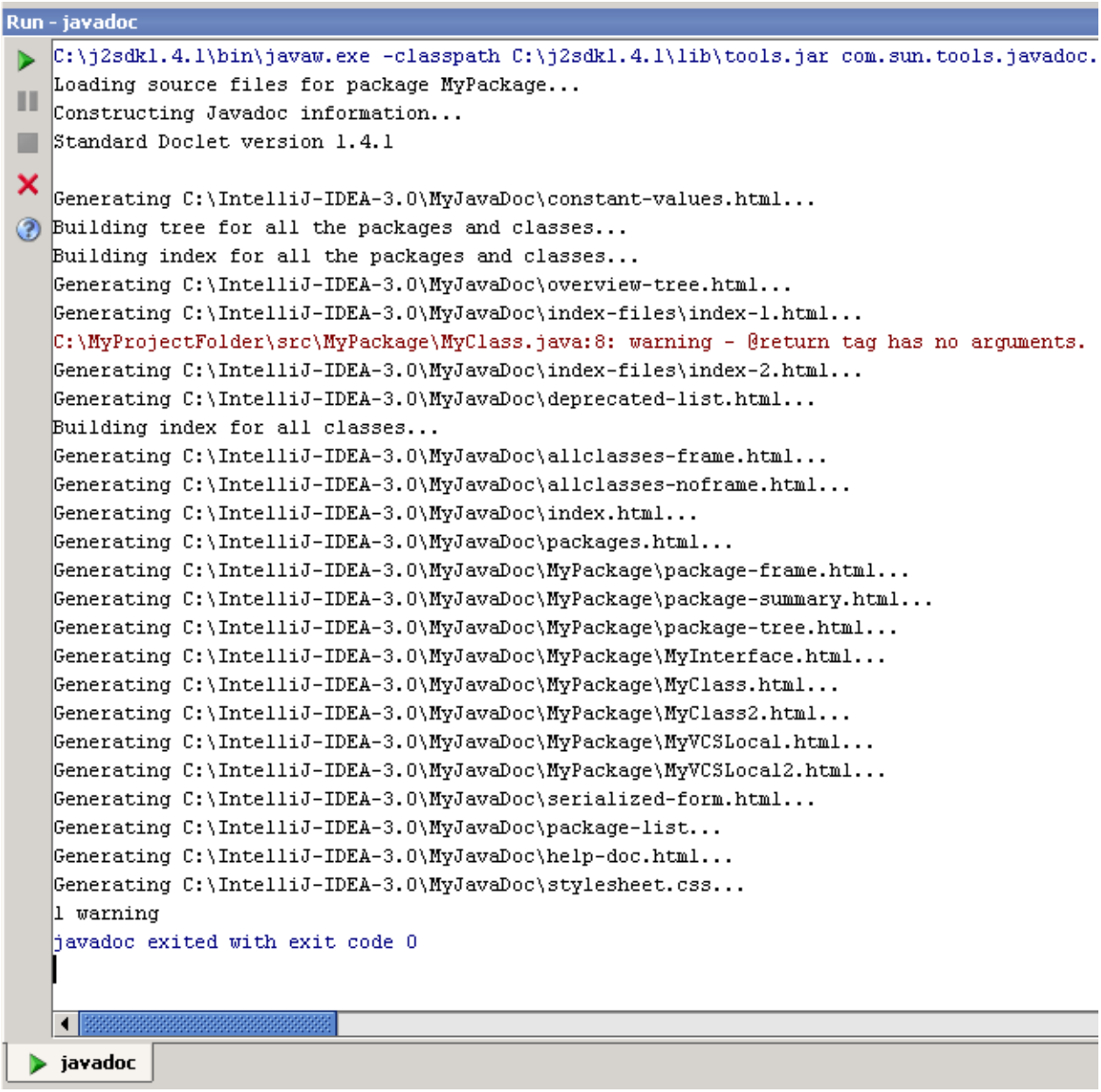


Figure 11.21. Run JavaDoc tool (293)

The generated JavaDoc is opened in a browser:

Figure 11.22. Generated JavaDoc (935)

12.4.2. Install

11.35. Add **c:\IntelliJ-IDEA-3.0\MyJavaDoc** to the JavaDoc API paths.

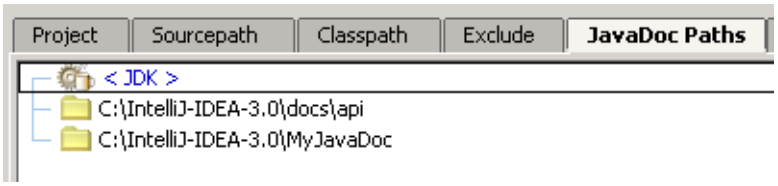


Figure 11.23. Add to JavaDoc API paths (292)

12.4.3. View

11.36. Place the cursor on **aMethod**.
11.37. Select **View | External JavaDoc**. JavaDoc is displayed.

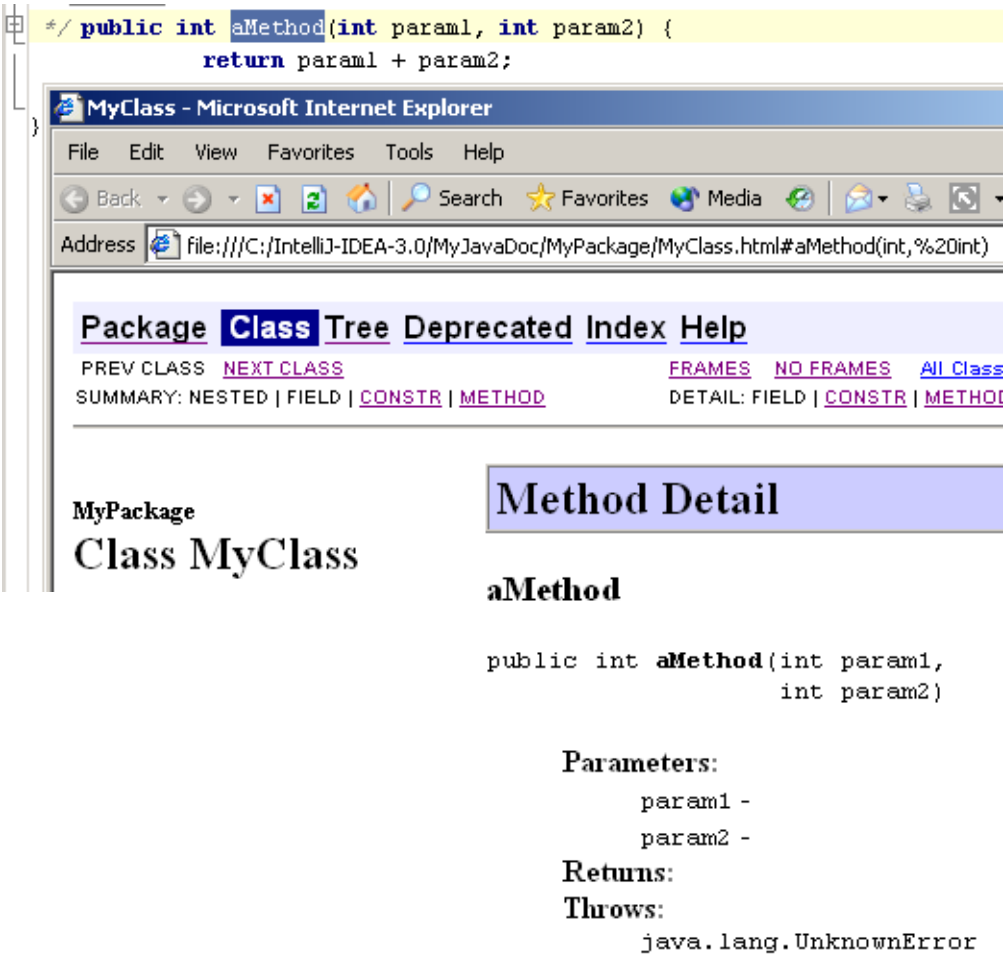


Figure 11.24. JavaDoc for MyClass (291,936)

Part D. Compile / Debug

20021018TTT last edit.

The chapters in this part describe the extensive compile / debug functionality provided and supported by IDEA.

13. Compiler (page 283). Demonstrates how to use the IDEA compiler.

14. Ant (page 295). Demonstrates how to use Ant with IDEA.

15. Debugger (page 301). Demonstrates how to use the IDEA debugger.

~~**16. JUnit XXX (page 313)**.~~

~~**17. Remote debugging XXX (page 315)**.~~

13. Compiler

20021024TTT: last edit.
contacts: zheka
Libraries??
Add Jikes somewhere
Compilation in IDEA is easy to use and provies many compilation options.

13.1. Compile variations

The following compile variations are available

13.1.1. Build / Rebuild

Build / rebuild compiles all classes in the project (even if the classes have not changed).
12.1. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public static void main(String[] args) {
      MyClass2 mc2 = new MyClass2();
      mc2.aMethod();
      MyClass3 mc3 = new MyClass3();
      mc3.aMethod();
  }
}
```

12.2. Create class **MyClass2**:

```
package MyPackage;
public class MyClass2
{
  public void aMethod() {
    System.out.println("A");
  }
}
```

12.3. Create class **MyClass3**:

```
package MyPackage;
public class MyClass3
{
  public void aMethod() {
      System.out.println("A");
  }
}
```

12.4. Select **Build | Rebuild project**. The project is built. All 3 files are compiled.

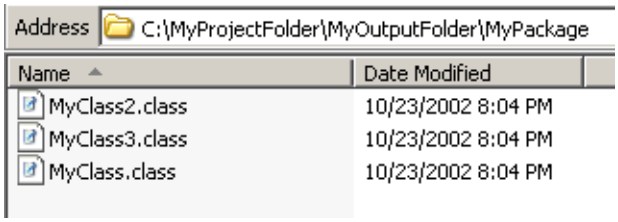


Figure 12.1. Built class files (964)

12.5. Select **Build | Rebuild project**. Note that again all 3 files are compiled (even though no changes were made).

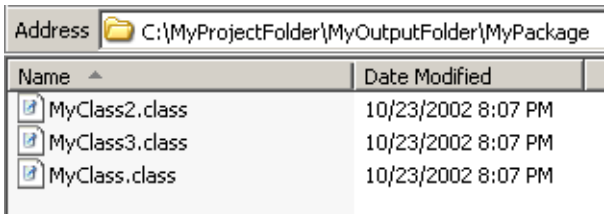


Figure 12.2. Rebuilt class files (965)

13.1.2. Make

Make involves compilation of only those classes that have been modified since the last compilation.

12.6. Modify class **MyClass2**:

```
System.out.println("B");
```

12.7. Modify class **MyClass3**:

```
System.out.println("B");
```

12.8. Select **Build | Make project**. The project is made: Only the modified files are compiled.

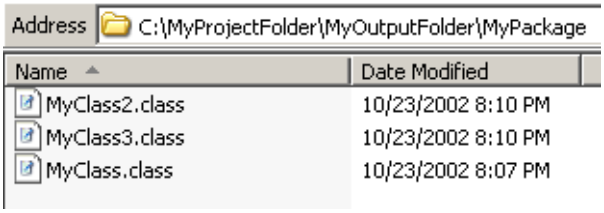


Figure 12.3. Made class files (966)

13.1.3. Compile (single file)

A single file can also be compiled.

12.9. Modify class **MyClass2**:

```
System.out.println("C");
```

12.10. Modify class **MyClass3**:

```
System.out.println("C");
```

12.11. Select the editor for **MyClass3**.

12.12. Select **Build | Compile "MyClass3.java"**. MyClass3 is compiled.

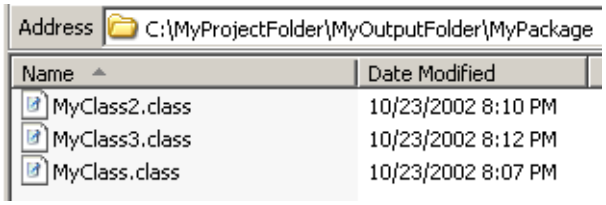


Figure 12.4. Compiled class file (967)

13.2. Compiler messages dialog

During compilation, if any problems occur the “Messages - Javac Compile” dialog will appear. In this dialog the following functions are available:

13.2.1. Stop

12.13. Click **Stop** ( ) to stop compilation.

13.2.2. Close

12.14. Click **Close** ( ) to close the dialog “Messages - Java Compile”.

13.2.3. Previous / next message

12.15. Click **Previous** ( ) or **Next** ( ) to select the previous / next message.

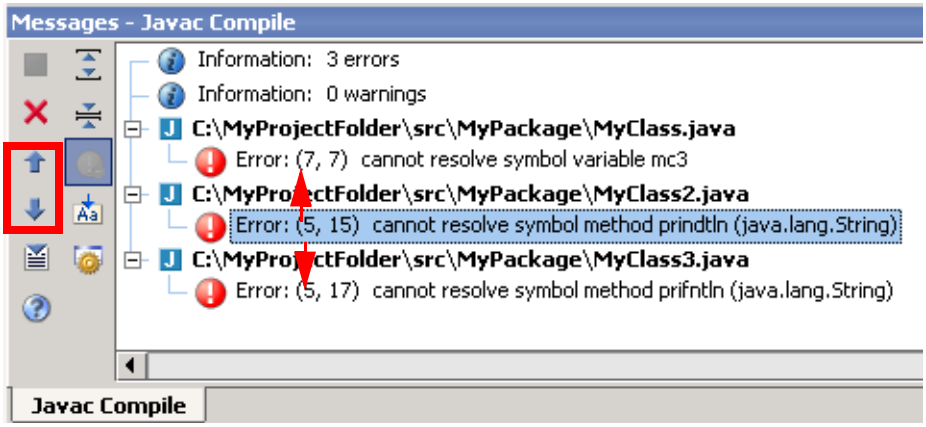


Figure 12.5. View previous / next message (968)

13.2.4. Export to text file

12.16. Click **Export to text file** ( ). The dialog “Export preview” appears.
12.17. For “Export to file” enter **C:\MyProjectFolder\export.txt**.

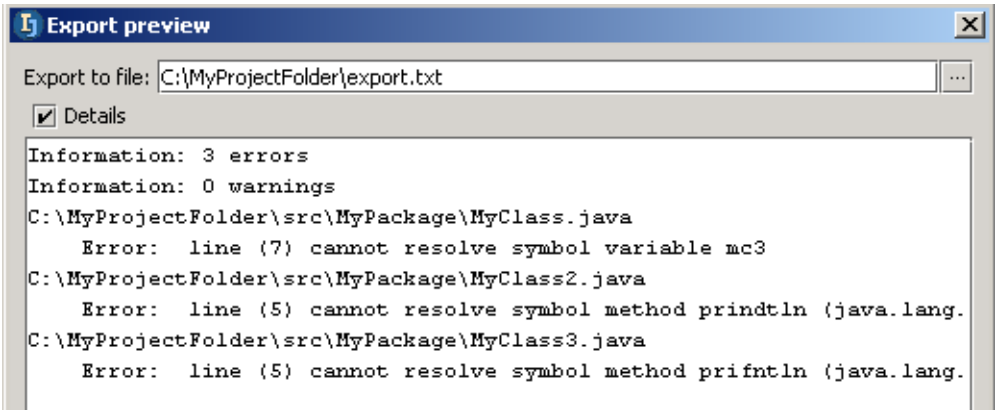


Figure 12.6. Dialog “Export preview” (972)

12.18. Click **Save**. The file is exported.

13.2.5. Expand / collapse all

12.19. Click **Expand all** ( ) or **Collapse all** ( ).

13.2.6. Hide warnings

12.20. Modify **MyClass2**.

```
package MyPackage;
public class MyClass2
{
  public void aMethod() {
      System.out.println("C");
      Thread.currentThread().resume();
  }
}
```

12.21. Recompile.

12.22. Click **Hide warnings** ( ) to hide the warning.

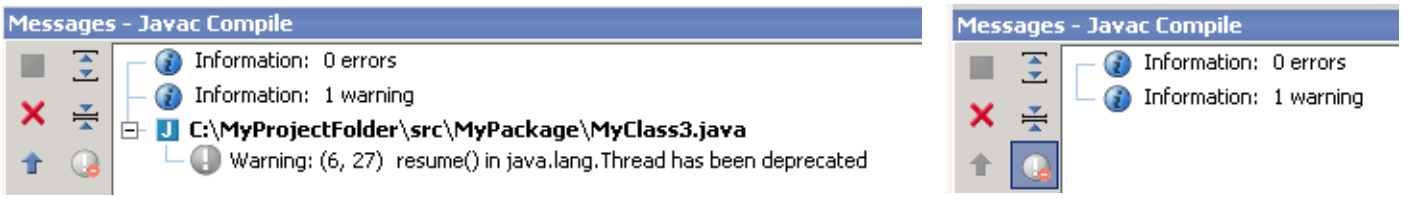


Figure 12.7. Hide warnings (974,975)

13.2.7. Autoscroll to source

12.23. Close all editors.

12.24. Click (enable) **Autoscroll to source** ( ).

12.25. Click on the warning. The source is opened.

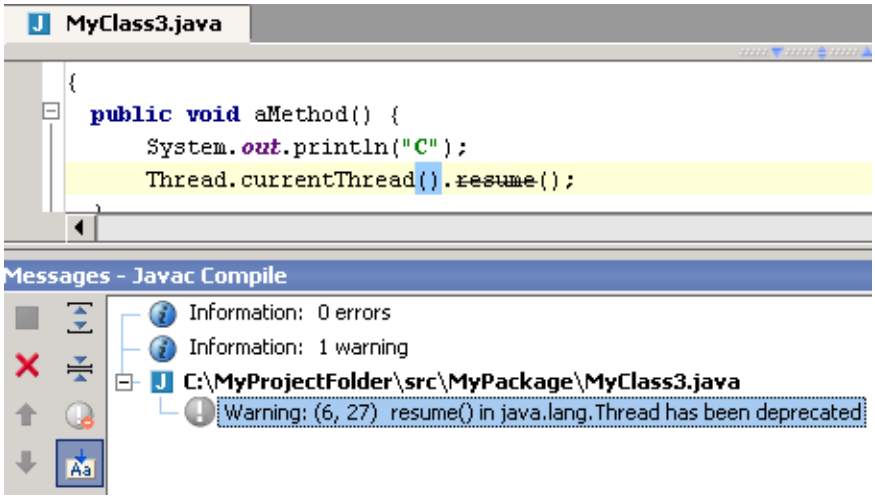


Figure 12.8. Autoscroll to source (978)

13.2.8. Compiler properties

12.26. Click **Compiler properties** ( ) to open the dialog “Project properties” tab “Compiler”.

13.3. Compiler options

IDEA provides the following groups of compiler options:

13.3.1. General

General compiler options include the following:

13.3.1.1. Exclude

The following can be excluded from compilation:

13.3.1.1.1. File

12.27. Open the dialog “Project properties” tab “Compiler”.
12.28. Click **Add file**. The dialog “Select Path” appears.
12.29. Double-click on **C:\MyProjectFolder\src\MyPackage\MyClass3.java**. The file is excluded.

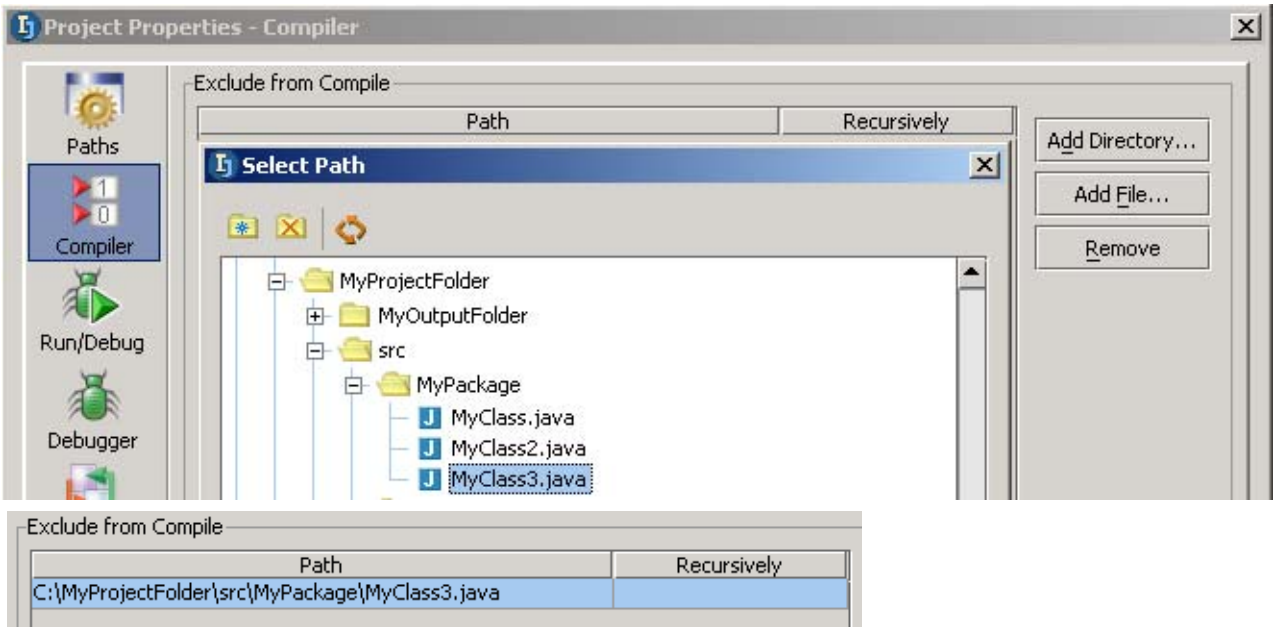


Figure 12.9. Exclude file (980,981)

The excluded file will not be compiled (even in a build).

12.30. Remove the file from the exclude list.

13.3.1.1.2. Directory (recursively)

12.31. Open the dialog “Project properties” tab “Compiler”.
12.32. Click **Add directory**. The dialog “Select Path” appears.
12.33. Double-click on **C:\MyProjectFolder\src\MyPackage**. The directory is excluded.

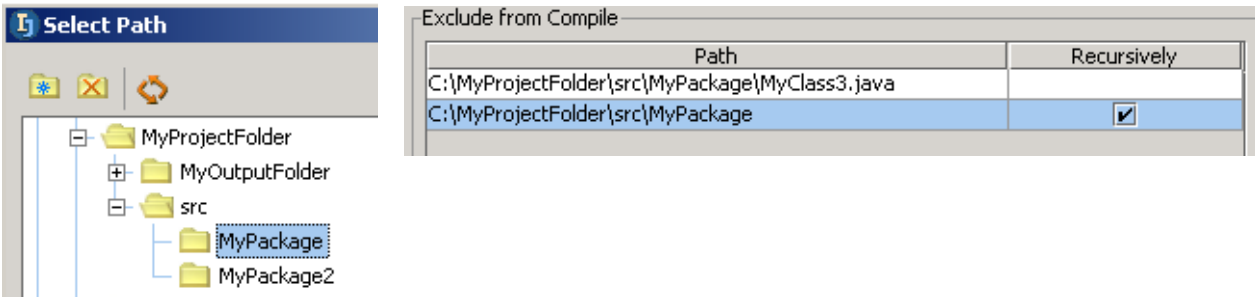


Figure 12.10. Exclude directory (983,982)

The files in the directory will not be compiled (even in a build).

If checkbox **Recursively** is checked, then the files in subdirectories of MyPackage will also not be compiled.

12.34. Remove the directorty from the exclude list.

13.3.1.2. Choose compiler

12.35. Select tab **Jikes**.
12.36. Click **Set active**. Jikes is now the active compiler.
12.37. Select tab **Javac**.
12.38. Click **Set active**. Javac is now the active compiler.

13.3.1.3. Resource patterns

Files matching a resource pattern will be copied to the output.

Note: Make sure that the file and directory above were removed from the exclude list.

12.39. Create class **MyClass**:

```
package MyPackage;
import java.util.ResourceBundle;
import java.util.PropertyResourceBundle;
import java.io.IOException;
public class MyClass {
  public static void main(String[] args) {
      try {
        ResourceBundle res = new PropertyResourceBundle (
          MyClass.class.getResourceAsStream("messages.txt"));
      } catch (IOException e) {
          e.printStackTrace();
      }
 }
}
```

12.40. Create file **messages.txt**:

```
error.e1=Error 1 text
error.e2=Error 2 text
```

12.41. Open the dialog “Project properties” tab “Compiler”.
12.42. For “Resource patterns:” add the following text in bold:

```
.+\.(properties|xml|html|txt);.+\.(gif|png|jpeg)
```

12.43. Click **OK**.
12.44. Build the project. Note that messages.txt was copied to the output.

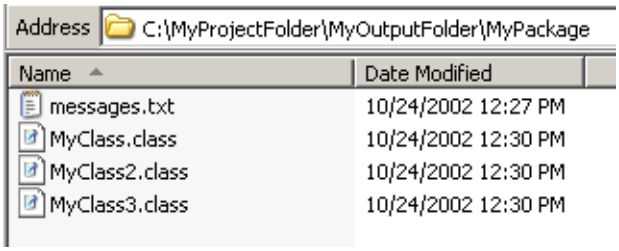


Figure 12.11. Resource copied to output (984)

13.3.1.4. Compile in background

12.45. Open the dialog “Project properties” tab “Compiler”.
12.46. Check the checkbox **Compile in background**. Compilations will now occur in the background. This is convenient when compiling large projects. The dialog “Compile progress” will not be shown.

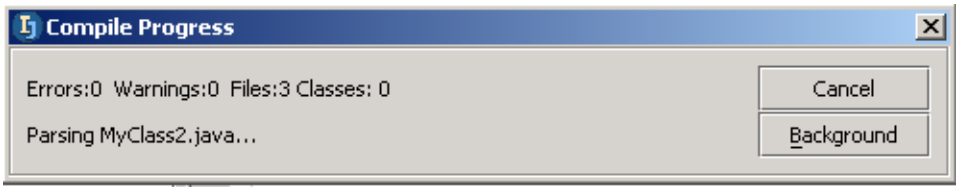


Figure 12.12. Compile progress (985)

12.47. Uncheck **Compile in background**.

13.3.1.5. Synchronize output directory

12.48. Open the dialog “Project properties” tab “Compiler”.
12.49. Check the checkbox **Synchronize output directory**.
12.50. Delete **MyClass2**.
12.51. Delete **MyClass3**.
12.52. **Build** the project. Note that the class files for MyClass2 and MyClass3 were deleted.

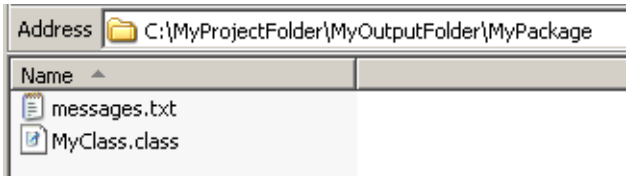


Figure 12.13. Synchronized output directory (986)

13.3.2. Javac-specific

Javac-specific compiler options include the following:

13.3.2.1. Generate debug info

12.53. Open the dialog “Project properties” tab “Compiler”.
12.54. In tab “Javac (active)” uncheck **Generate debugging info**.
12.55. Click **OK**.
12.56. Add a breakpoint at

```
ResourceBundle res = new PropertyResourceBundle
```

12.57. Build the project.
12.58. Debug the application. Note that at the breakpoint no debug info is available.

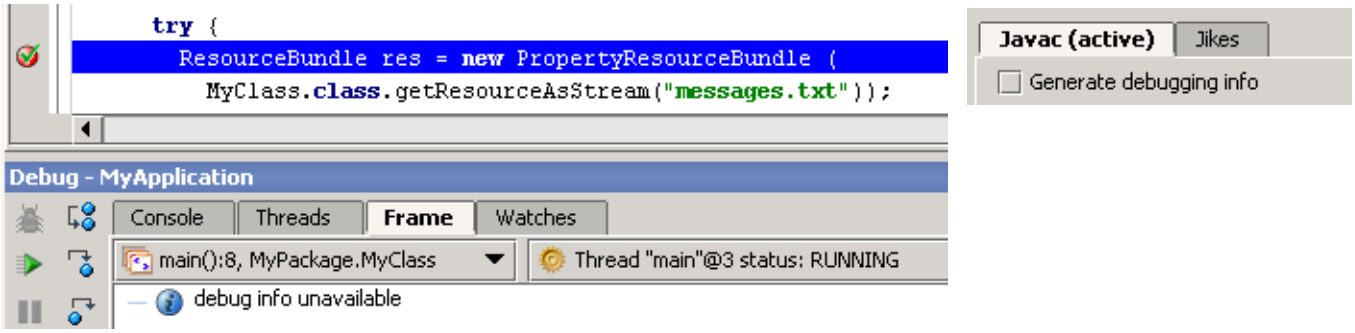


Figure 12.14. No debug info available (987,988)

12.59. Open the dialog “Project properties” tab “Compiler”.
12.60. In tab “Javac (active)” check **Generate debugging info**.
12.61. Click **OK**.
12.62. Build the project.
12.63. Debug the application. Note that at the breakpoint debug info is available.

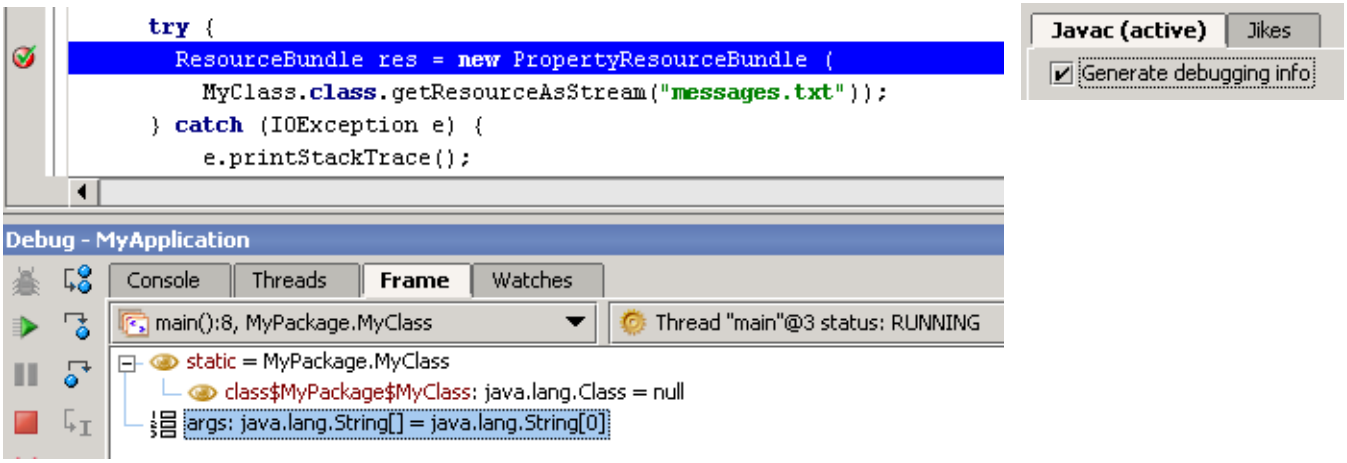


Figure 12.15. Debug info available (990,989)

13.3.2.2. Report uses of deprecated features

12.64. Create class **MyClass**

```
package MyPackage;
```

```
public class MyClass {
  public void aMethod() {
      Thread.currentThread().resume();
  }
}
```

12.65. Open the dialog “Project properties” tab “Compiler”.
12.66. In tab “Javac (active)” check **Generate debugging info**.
12.67. In tab “Javac (active)” check **Report uses of deprecated features**.
12.68. In tab “Javac (active)” uncheck **Generate no warnings**.
12.69. Click **OK**.
12.70. Compile. Note the warning.

Figure 12.16. Deprecation warning (992,991)

13.3.2.3. Generate no warnings

12.71. Open the dialog “Project properties” tab “Compiler”.
12.72. In tab “Javac (active)” check **Generate debugging info**.
12.73. In tab “Javac (active)” check **Report uses of deprecated features**.
12.74. In tab “Javac (active)” check **Generate no warnings**.

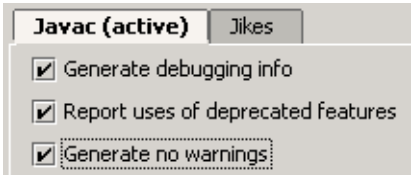


Figure 12.17. No warnings (993)

12.75. Click **OK**.
12.76. Compile. Note that no warning is generated.

13.3.2.4. Additional Javac command parameters

12.77. Create class **MyClass**

```
package MyPackage;
public class MyClass {
    public static void main(String[] args) {
      System.out.println("hello");
    }
}
```

12.78. Open the dialog “Project properties” tab “Compiler”.
12.79. In tab “Javac (active)” check **Generate debugging info**.

12.80. In tab “Javac (active)” check **Report uses of deprecated features**.
12.81. In tab “Javac (active)” uncheck **Generate no warnings**.
12.82. For “Additional Javac command line parameters:” enter **-g:none**.
12.83. Click **OK**.
12.84. Build the project.
12.85. Add a breakpoint to line

```
System.out.println("hello");
```

12.86. Debug. Note that execution does not stop at the breakpoint.

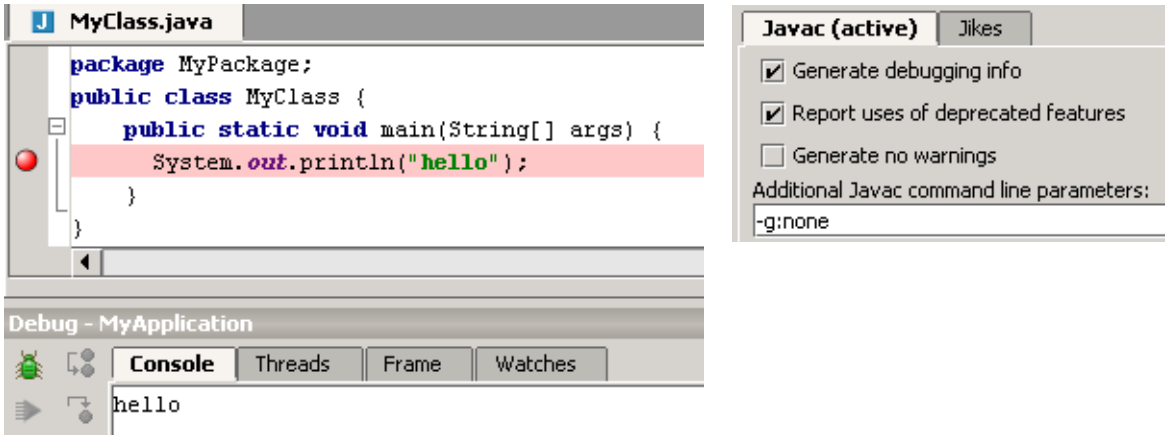


Figure 12.18. No breakpoint stop (996,995)

12.87. Open the dialog “Project properties” tab “Compiler”.
12.88. For “Additional Javac command line parameters:” leave blank.
12.89. Click **OK**.
12.90. Build the project.
12.91. Debug. Note that execution does not stop at the breakpoint.

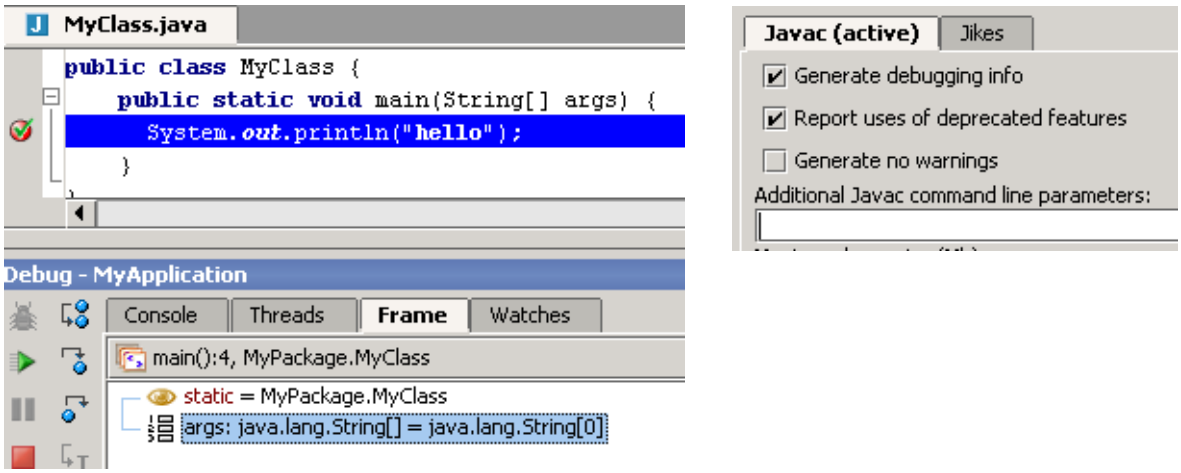


Figure 12.19. Breakpoint stop (998,997)

13.3.2.5. Max heap size

The maximum heap size should be enlarged if the compiler runs out of memory.

14. Ant

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contacts: zheka

IDEA supports integration with Jakarta Ant. This chapter describes how to

14.1. Download / Install

Refer to http://jakarta.apache.org/ant/index.html for the latest information on Ant.

13.1. Download from http://jakarta.apache.org/builds/jakarta-ant/release/v1.5/bin/ file **jakarta-ant-1.5-bin.zip**.

13.2. Extract to **c:** (use folder names).

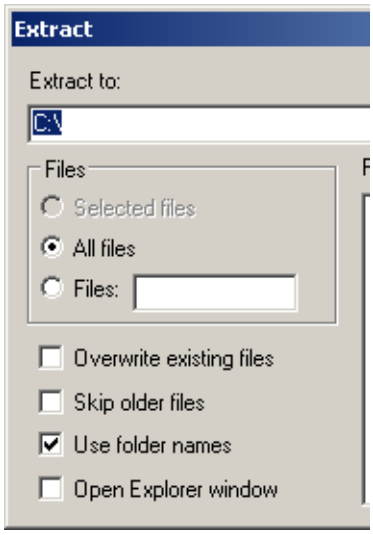

Figure 13.1. Ant extraction (938)

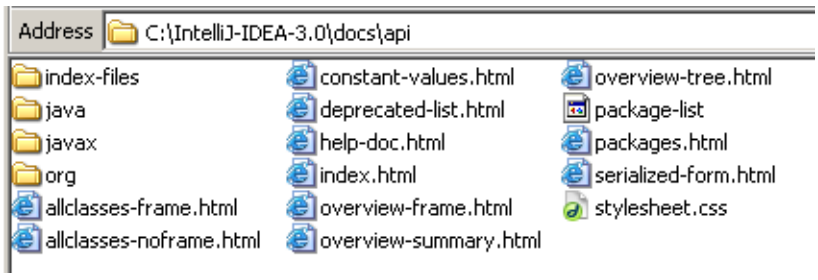

Figure 13.2. JavaDoc API dir (313)

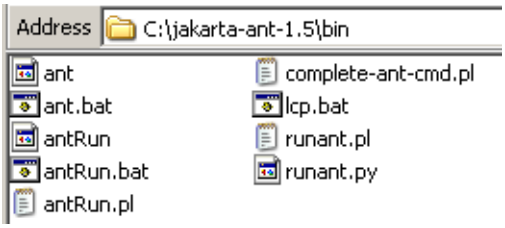

Figure 13.3. Ant directories (273)

13.3. Add environment variable **ANT_HOME** with value **C:\jakarta-ant-1.5**.

13.4. Add to environment variable **Path** dir **C:\jakarta-ant-1.5\bin**.

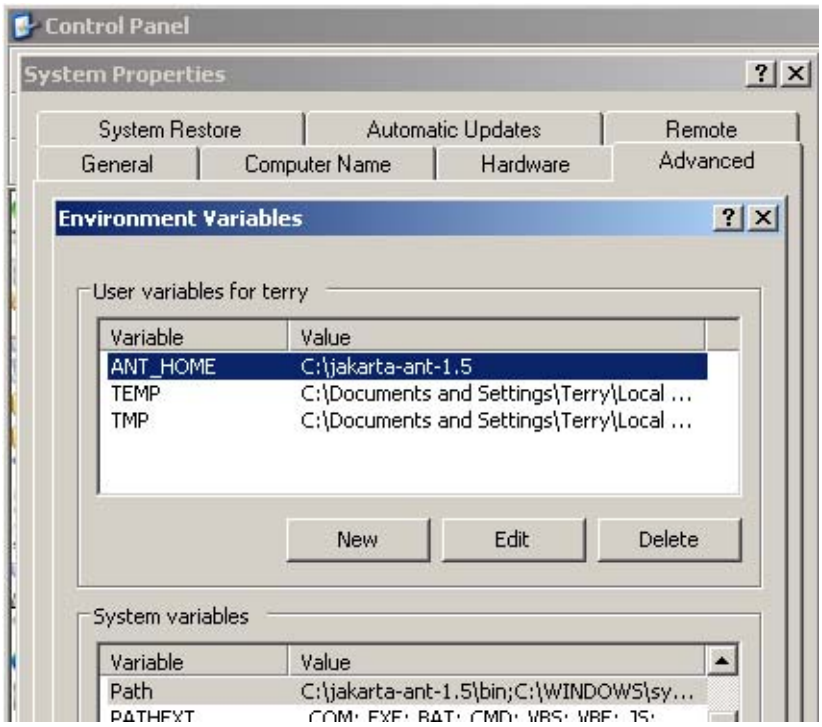

Figure 13.4. Environment variables for Ant (272)

14.2. Create build.xml

13.5. Create file **C:\MyProjectFolder\build.xml**:

```
<project name="MyAntProject" default="all" basedir=".">
<target name="init">
  <property name = "class_path" value = "c:\MyProjectFolder" />
  <property name = "build"      value = "${class_path}\MyOutputFolder" />
  <property name = "source"     value = "${class_path}\src" />
</target>
<target name="all" depends="init">
  <mkdir dir="${build}" />
  <javac srcdir    = "${source}"
         destdir   = "${build}"
         classpath = "${class_path}" />
</target>
</project>
```

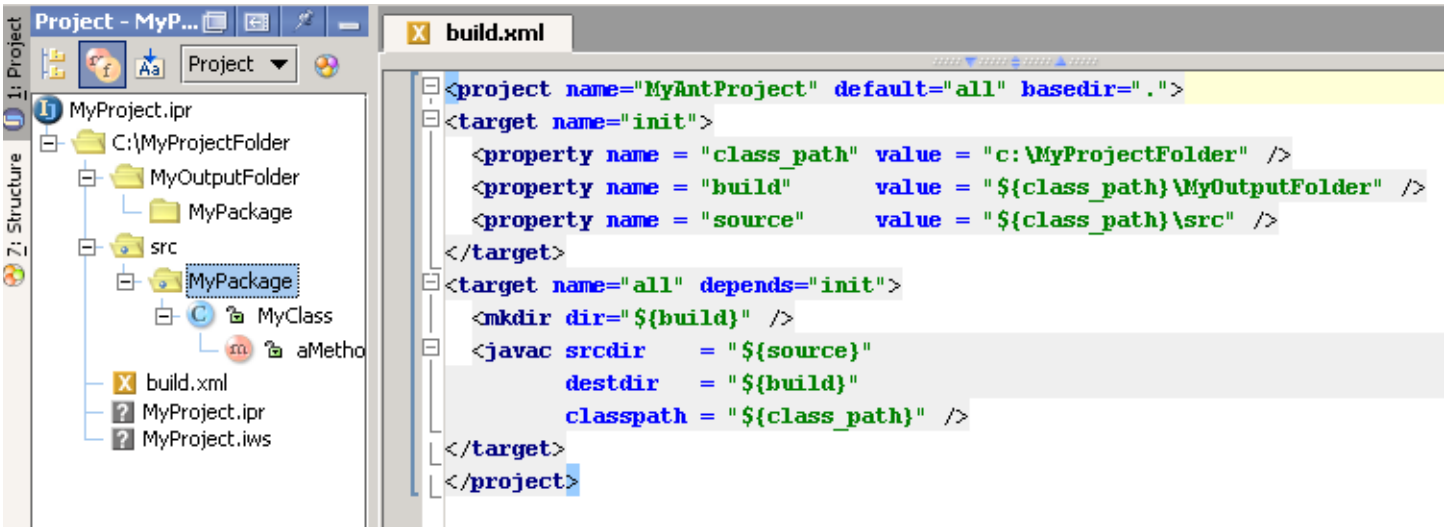

Figure 13.5. build.xml (271)

14.3. Add Ant build to IDEA

13.6. Open the Ant Build tool.
13.7. Click on **+**. The dialog “Select Ant build” appears.
13.8. Select build.xml.

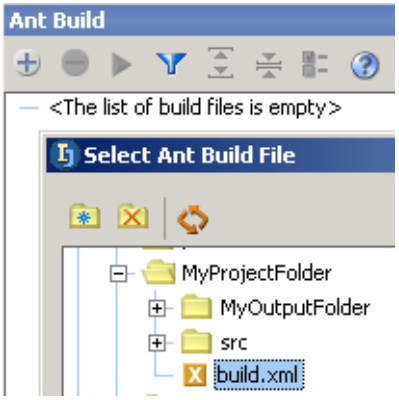

Figure 13.6. Adding build.xml to Ant tool (270)

13.9. Click **OK**. The file is added.

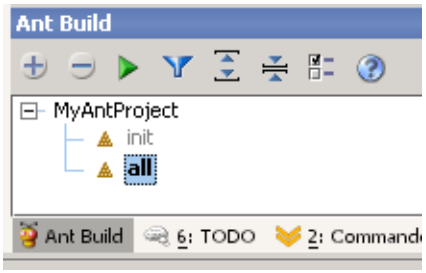

Figure 13.7. Build file added (269)

14.4. Run build

13.10. Click on the **Run**. icon. The files are built.

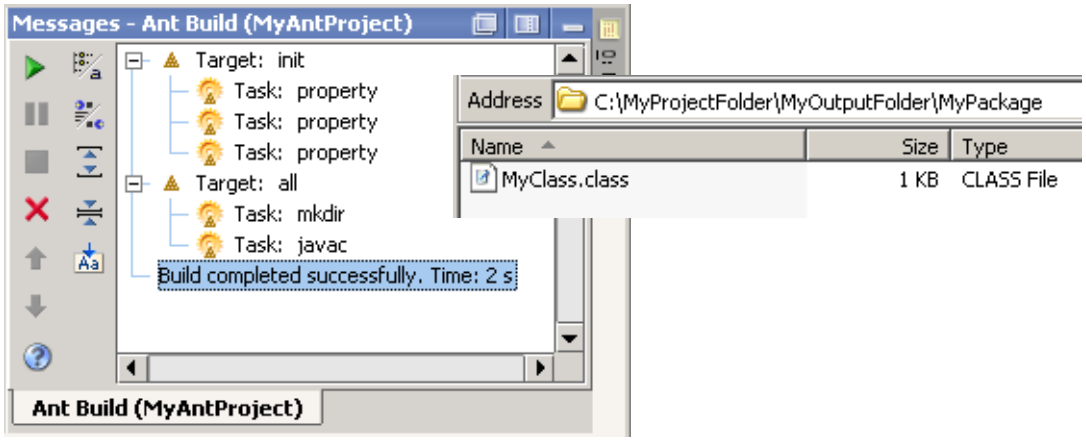

Figure 13.8. Files are built (268,267)

15. Debugger

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contacts: zheka

Add: remote debugging.

The chapter describes

~~Note: This chapter only describes in detail running/debugging for an Application. The particular details of running/debugging for other run/debug configurations (Applet, WebApp, etc.) are described in **Part E. Applications (page 317)**.~~

15.1. Run/Debug configurations

This section describes the run/debug configuration

15.1.1. Types

The following 5 types of configurations are available

- **Application** (you already created a basic application configuration in **Section 3.10.1. Create application configuration (page 54)**)
- **Applet**
- **JUnit**
- **Remote** (debug configuration ONLY)
- **WebApp**

~~15.1.1.1. Application~~

~~You already created a basic application configuration in **Section 3.10.1. Create application configuration (page 54)**.~~

~~15.1.1.2. Applet~~

~~Will be introduced in **Chapter 19. Applets XXX (page 321)**.~~

~~15.1.1.3. JUnit~~

~~Will be introduced in **Chapter 16. JUnit XXX (page 313)**.~~

~~15.1.1.4. Remote XXX ??~~

~~15.1.1.5. WebApp~~

~~Will be introduced in **Chapter 20. Web applications XXX (page 323)**.~~

15.1.2. Basic operations

The following operations are supported for run/debug confgurations:

15.1.2.1. Add (create)

You created a basic application configuration in **Section 3.10.1. Create application configuration (page 54)**.

15.1.2.2. Edit

14.1. Click on the **Run** or **Debug** icon ( ). The dialog appears.
14.2. Make the required changes.
14.3. Click **Apply**.

15.1.2.3. Modify defaults

14.4. Click **Edit Defaults**. The “Application default settings” page appears.

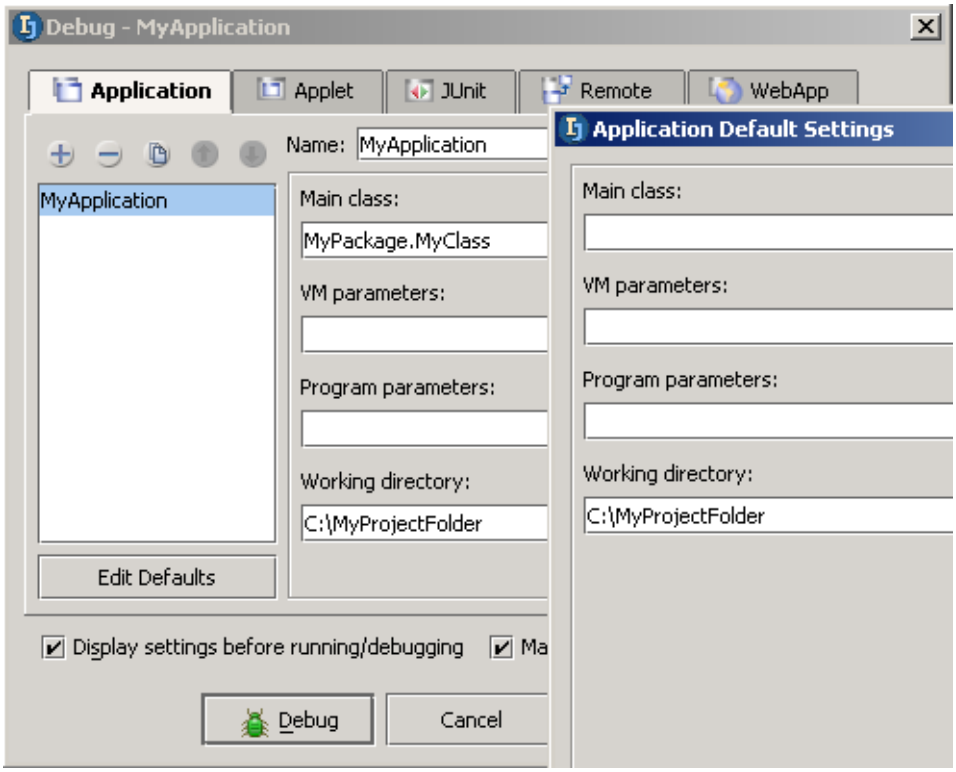


Figure 14.1. Application default settings (289)

14.5. Enter defaults.
14.6. Click **OK**.

15.1.2.4. Copy

14.7. Select the configuration.

14.8. Click on the **Copy configuration** icon ( ). A copy of the configuration is created.

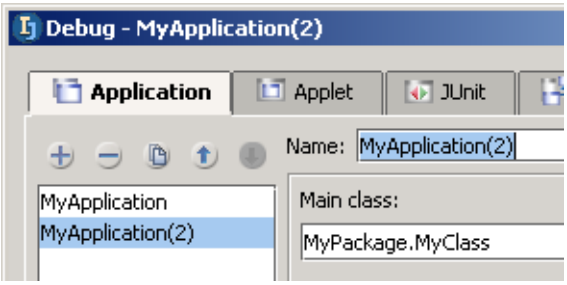


Figure 14.2. Copied configuration (287)

15.1.2.5. Remove (delete)

14.9. Select the configuration.

14.10. Click on the **Remove configuration** icon ( ). A confirmation dialog appears.

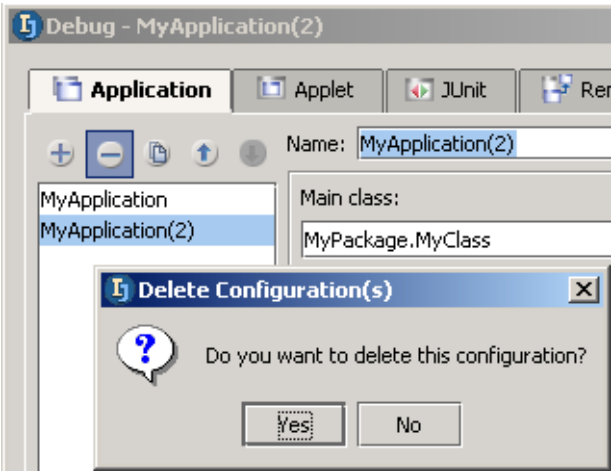


Figure 14.3. Delete configuration confirmation (940)

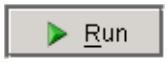
14.11. Click **Yes**. The configuration is deleted.

15.1.2.6. Run

14.12. Close the configuration dialog.

14.13. Click on the **Run** icon ( ). The Run configuratuion dialog appears.

14.14. Select a configuration.

14.15. Click **Run** 

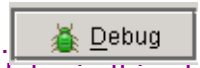
. The application is run.

15.1.2.7. Debug

14.16. Close the configuration dialog.

14.17. Click on the **Debug** icon ( ). The Debug configuratuion dialog appears.

14.18. Select a configuration.

14.19. Click **Debug**. 

. The application is debugged (details of debugging an application are introduced later in this chapter).

15.2. Types of breakpoints / watchpoints

eventually make better example code here.

The following types of breakpoints / watchpoints exist:

15.2.1. Line

You created a line breakpoint in **section 3.10.3. Set breakpoint (page 57)**.

15.2.2. Exception

14.20. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
    public static void main(String[] args) {
      MyClass2 mc2 = new MyClass2();
          mc2.aMethod();
    }
}
class MyClass2 {
    int anInt = 1;
    void aMethod() throws ArithmeticException {
         throw new ArithmeticException();
    }
}
```

14.21. Debug the class. Note the exception:

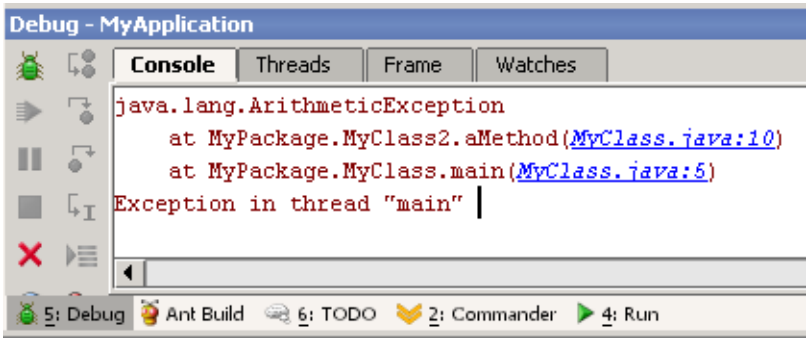


Figure 14.4. Exception (941)

14.22. Close the debug tool.
14.23. Select **Run | View breakpoints...**.
14.24. Select tab **Exception breakpoints**.
14.25. Click **Add**. The dialog “Enter exception class” appears.
14.26. For the name enter **ArithmeticException**.

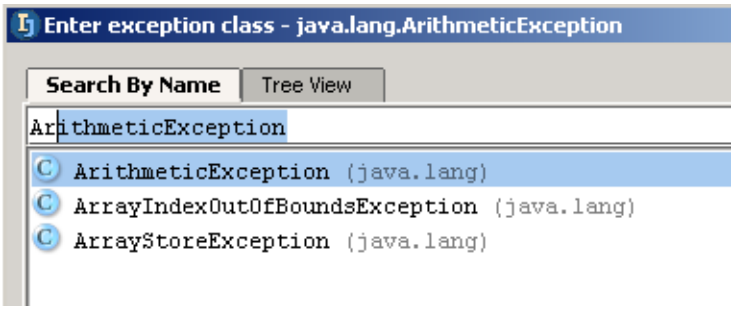


Figure 14.5. Enter Arithmetic exception (942)

14.27. Click **OK**. The exception breakpoint is added.

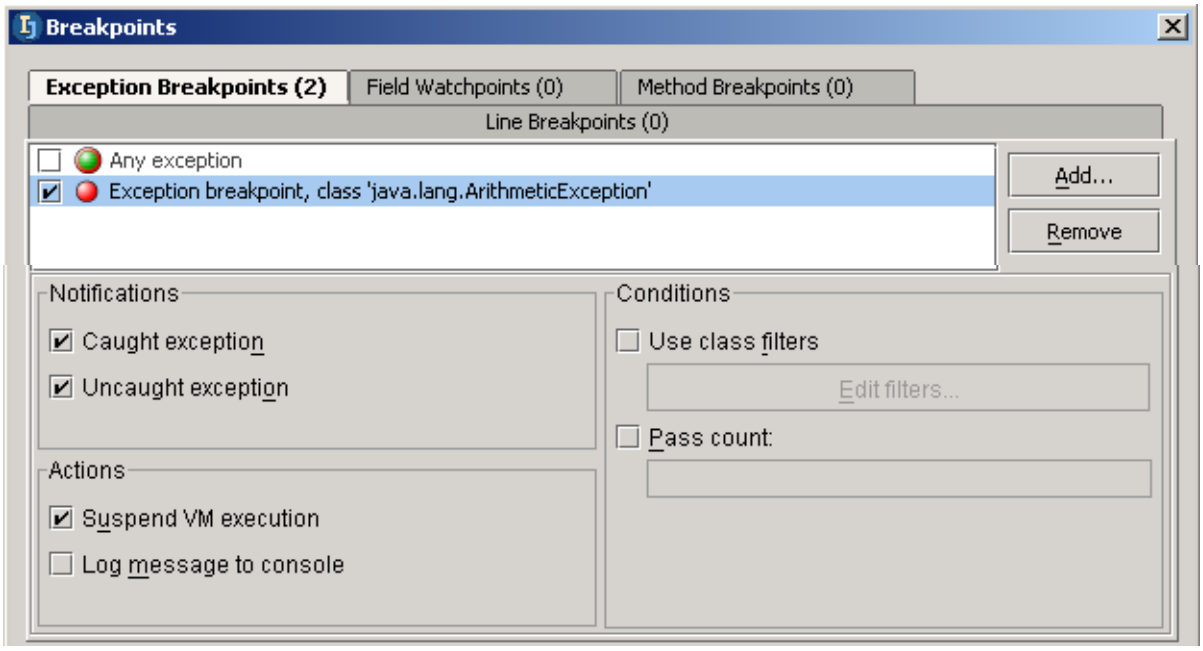


Figure 14.6. Exception breakpoint (282,281)

14.28. Click **Close**.

14.29. Debug the application. Note the debug window.

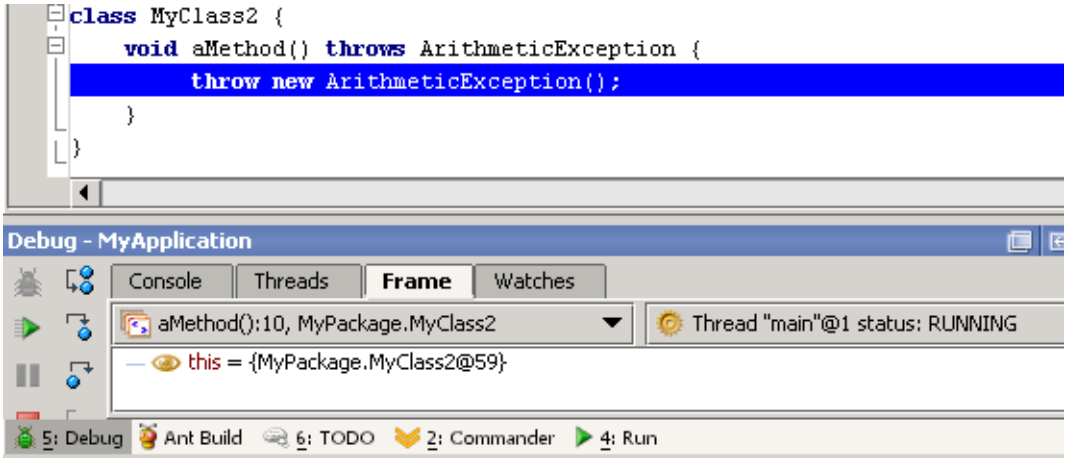


Figure 14.7. Exception breakpoint (943)

15.2.3. Field (watchpoints)

14.30. Delete the exception breakpoint.
14.31. Select tab **Field watchpoints**.
14.32. Click **Add**. The dialog “Add field watchpoint” appears.
14.33. For “Fully qualified name of a class” enter **MyPackage.MyClass2**.
14.34. For “Field name” enter **anInt**.

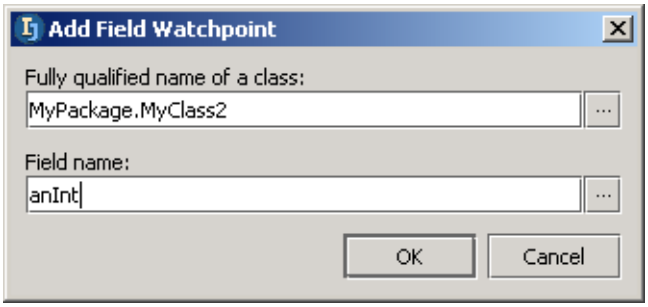


Figure 14.8. Add field watchpoint (279)

14.35. Click **OK**. The field watchpoint is added.

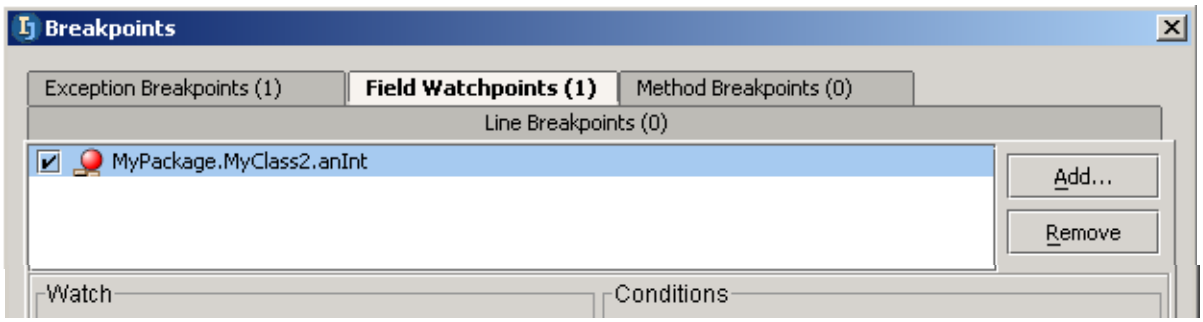


Figure 14.9. Field watchpoint added (278,277)

14.36. Click **Close**.
14.37. Debug the application. Note the debug window.

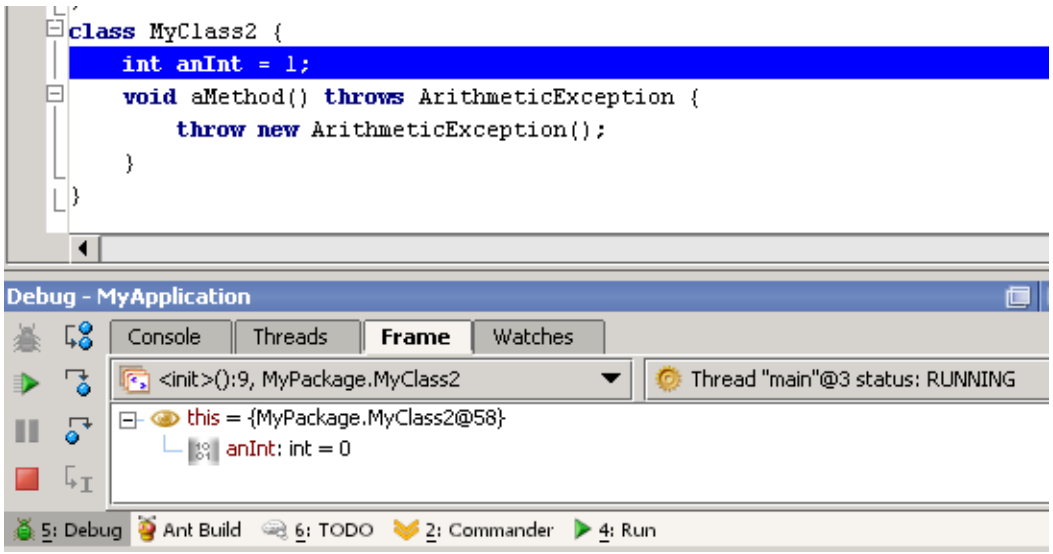


Figure 14.10. Field watchpoint info in debug (276)

15.2.4. Method

14.38. Delete the field watchpoint.
14.39. Place the cursor within the definition for **aMethod()**.
14.40. Select **Run | Add method breakpoint...**. The dialog “Add method breakpoint” appears with the breakpoint defined.

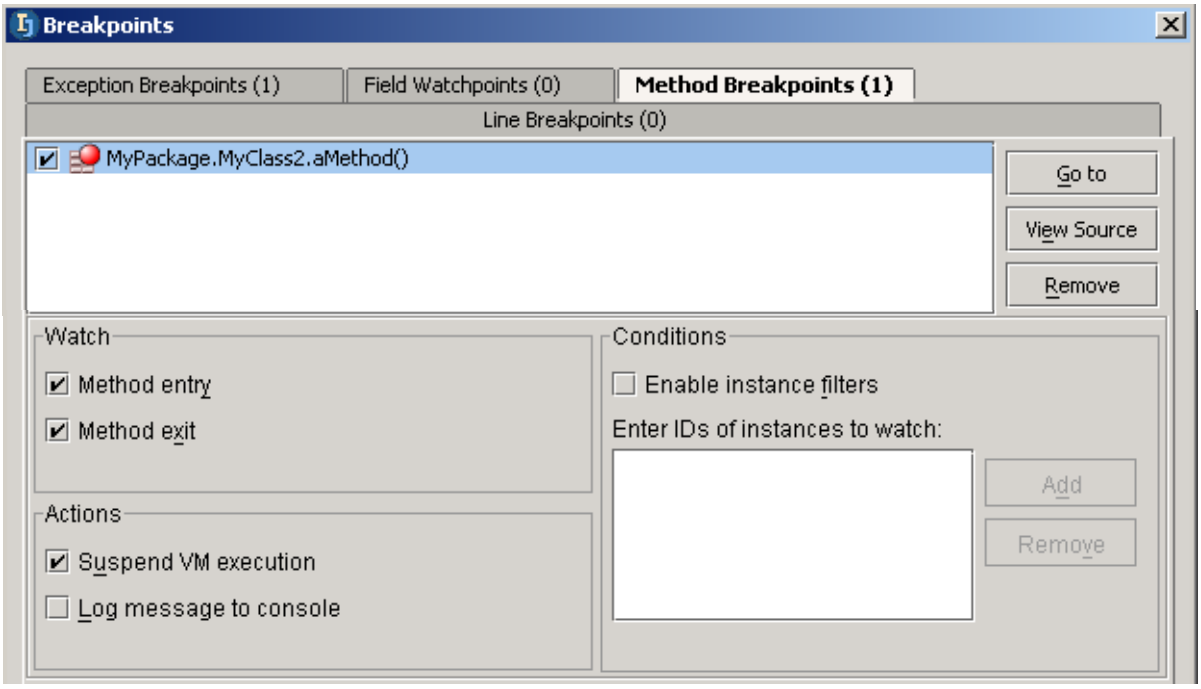


Figure 14.11. Method breakpoint (275,274)

14.41. Click **Close**.
14.42. Debug the application.

15.3. Run / debug actions

The following run / debug actions are available:

15.3.1. Pause / Resume / Stop / Close

14.43. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public static void main(String[] args) {
    for (int i = 0; i < 1000000; i++) {
      System.out.println(i);
      try { Thread.sleep(100);
      } catch (InterruptedException ie) {}
    }
  }
}
```

14.44. Run the application.

14.45. Click **Pause** ( ). Execution is paused.

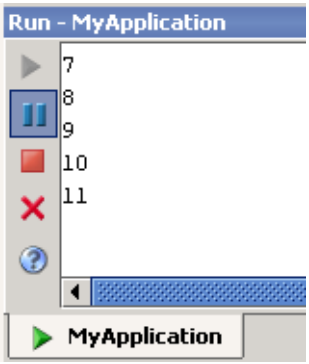


Figure 14.12. Pause (956)

14.46. Click **Pause** ( ) again to continue.

14.47. Click **Stop** ( ) to stop.

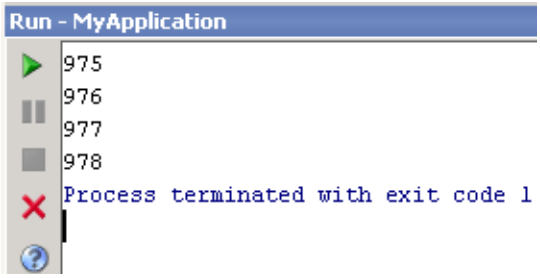


Figure 14.13. Stop (958)

14.48. Click **Close** ( ) to close.

15.3.2. Step over / Step into / Step out

14.49. Create class **MyClass**:

```
package MyPackage;
public class MyClass {
  public static void main(String[] args) {
    MyClass2 mc2 = new MyClass2();
    mc2.aMethod2();
    mc2.aMethod2();
    mc2.aMethod2();
  }
}
class MyClass2 {
  int anInt2 = 1;
  void aMethod2() {
    anInt2 = 2;
  }
}
```

14.50. Set a line breakpoint for the first

```
    mc2.aMethod2();
```

14.51. Debug the class. Execution stops at the breakpoint.

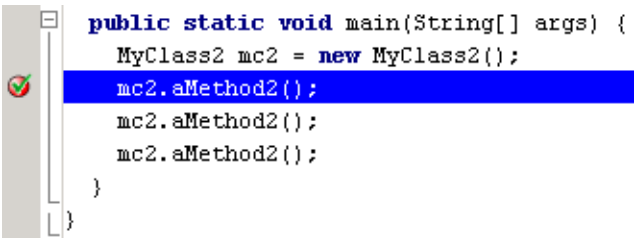


Figure 14.14. Breakpoint (945)

14.52. Click **Step over** (). The method is stepped over.

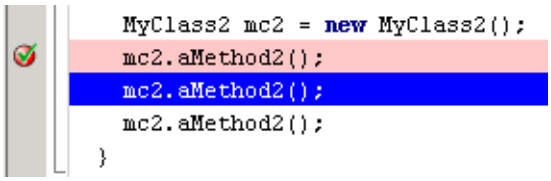


Figure 14.15. Step over (947)

14.53. Click **Step into** (). The method is stepped into.

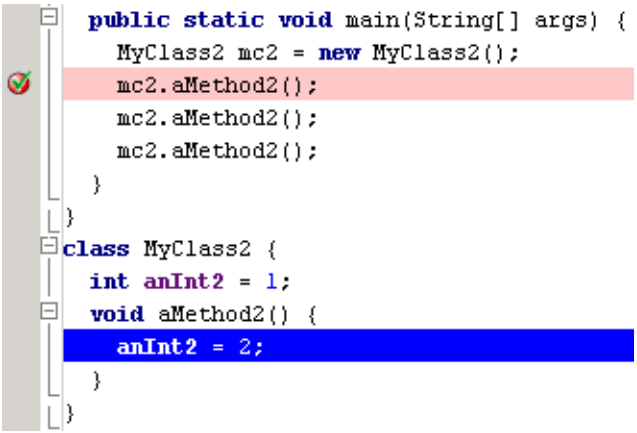


Figure 14.16. Step into (949)

14.54. Click **Step out** ( ). The method is stepped out of.

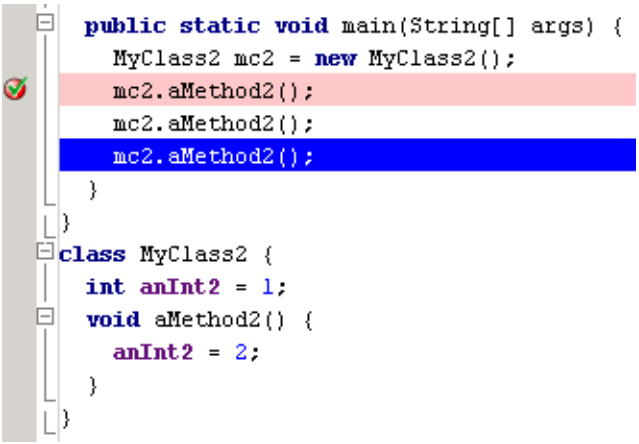


Figure 14.17. Step out (951)

15.3.3. Run to cursor

14.55. Terminate the process.
14.56. Debug again. Execution stops at the breakpoint.
14.57. Place the cursor (caret) on the 3rd (last)

```
mc2.aMethod2();
```

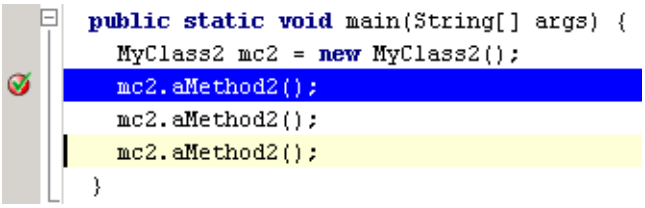


Figure 14.18. Cursor on 3rd method (952)

14.58. Click **Run to cursor** ( ). Execution continues to the cursor location.

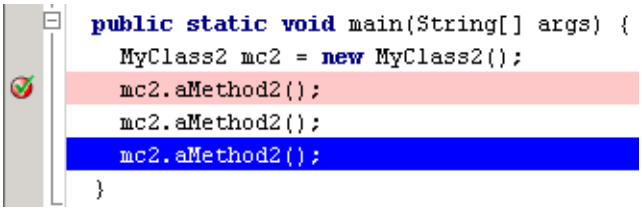


Figure 14.19. Run to cursor (954)

15.3.4. Show execution point

14.59. Close the editor for **MyClass.java**.
14.60. Click **Show execution point** ( ). The execution point is shown.

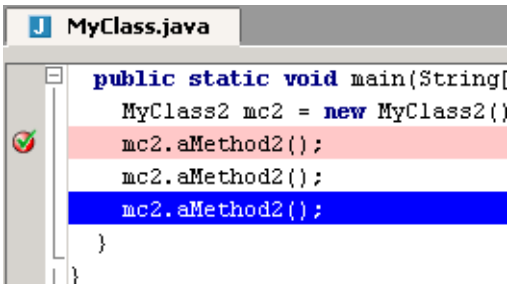


Figure 14.20. Show execution point (961)

15.3.5. View breakpoints

14.61. Click **View breakpoints** ( ). The dialog “Breakpoints” appears.

16. JUnit XXX

contacts: zheka

15.1.

16.1. xxx

Download from **http://www.junit.org/index.htm**.

Unzip.

Set CLASSPATH.

Test

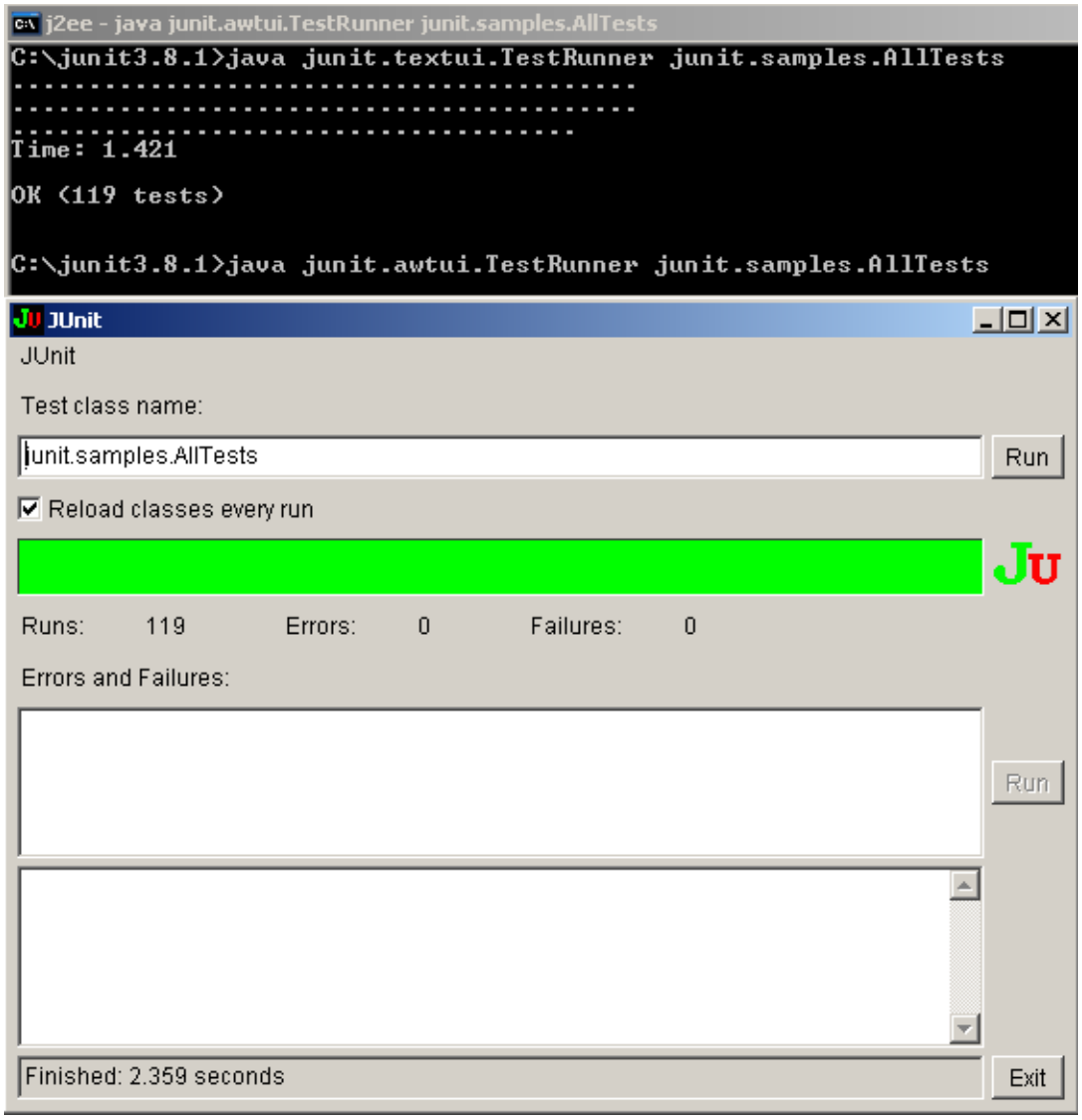


Figure 15.1. Junit test (472)

17. Remote debugging XXX

contacts: ???

17.1. xxx

16.1.
Figure 16.1. xxx ()

Part E. Applications

The chapters in this part describe IDEA's support for various types of applications.

18. Applications XXX (page 319).

19. Applets XXX (page 321).

20. Web applications XXX (page 323). Demonstrates how web applications can be created and managed with IDEA.

21. EJB X (page 329). Demonstrates how to create EJB using IDEA.

18. Applications XXX

contacts: valentin

18.1. xxx

17.1.
Figure 17.1.

19. Applets XXX

contacts: valentin

19.1. xxx

18.1.
Figure 18.1.

20. Web applications XXX

contacts: mike, and aleksei kudravtsefv

19.1.

Figure 19.1.

20.1. Install Tomcat XXX

20.2. JSP XXX

20.3. Tags

migrate??? to different jdk.... valya
20020911TTT: created.

example from http://developer.java.sun.com/developer/technicalArticles/xml/WebAppDev3/.

20.3.1. Create HelloTag.java

19.2. Create **C:\Program Files\Apache Tomcat 4.0\webapps\examples\WEB-INF\classes\tags\HelloTag.java** with code:

```
package tags;

import java.io.*;
import javax.servlet.jsp.*;
import javax.servlet.jsp.tagext.*;

public class HelloTag implements Tag {
   private PageContext pageContext;
   private Tag parent;

   public HelloTag() {
      super();
   }

   public int doStartTag() throws JspException {
      try {
         pageContext.getOut().print(
         "This is my first tag!");
      } catch (IOException ioe) {
        throw new JspException("Error: IOException while writing to client"
+ ioe.getMessage());
      }
      return SKIP_BODY;
   }

   public int doEndTag() throws JspException {
      return SKIP_PAGE;
   }

   public void release() {
   }

   public void setPageContext(PageContext
   pageContext) {
      this.pageContext = pageContext;
   }

   public void setParent(Tag parent) {
```

```
        this.parent = parent;
    }

    public Tag getParent() {
        return parent;
    }
}
```

19.3. Compile.

20.3.2. Create mytaglib.tld

19.4. Create **C:\Program Files\Apache Tomcat 4.0\webapps\examples\WEB-INF\jsp\mytaglib.tld** with code:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<!DOCTYPE taglib PUBLIC "-//Sun Microsystems, Inc.//DTD JSP Tag Library
1.1//EN"
"http://java.sun.com/dtd/web-jsptaglibrary_1_2.dtd">
<!-- a tag library descriptor -->

<taglib>

    <tlibversion>1.0</tlibversion>
    <jspversion>1.1</jspversion>
    <shortname>first</shortname>
    <uri></uri>
    <info>A simple tab library for the
    examples</info>

  <tag>
    <name>hello</name>
    <tagclass>tags.HelloTag</tagclass>
    <bodycontent>empty</bodycontent>
    <info>Say Hi</info>
  </tag>
</taglib>
```

20.3.3. Create Hello.jsp

19.5. Create **C:\Program Files\Apache Tomcat 4.0\webapps\examples\jsp\Hello.jsp** with code:

```
<%@ taglib uri="/WEB-INF/jsp/mytaglib.tld"
 prefix="first" %>
<HTML>
<HEAD>
<TITLE>Hello Tag</TITLE>
</HEAD>

<BODY bgcolor="#ffffcc">

<B>My first tag prints</B>:

<first:hello/>

</BODY>
</HTML>
```

20.3.4. Test

19.6. In IE: Open **http://localhost:8080/examples/jsp/Hello.jsp**.

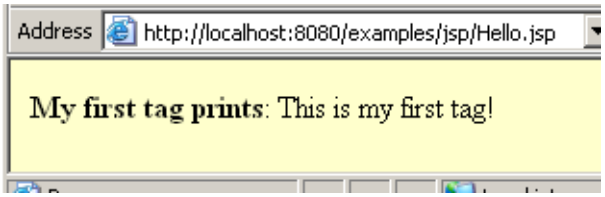


Figure 19.2. xxx (473)

20.4. Servlets XXX

migrate??? to different jdk.... valya
contacts: valya

21. EJB X

CONSULT: mike, aleksei kudravtsev.

20020911TTT: created. describes doing the sun tutorial example using IDEA. this chapter needs to be highly modified (i reallly have no idea what i am doing), but documents how to do the sun example.

21.1. Install / start J2EE

21.1.1. Download / install J2EE from sun

20.1. Download **j2sdkee-1_3_1-win.exe** (Windows install) from **http://java.sun.com/j2ee/download.html#sdk**.

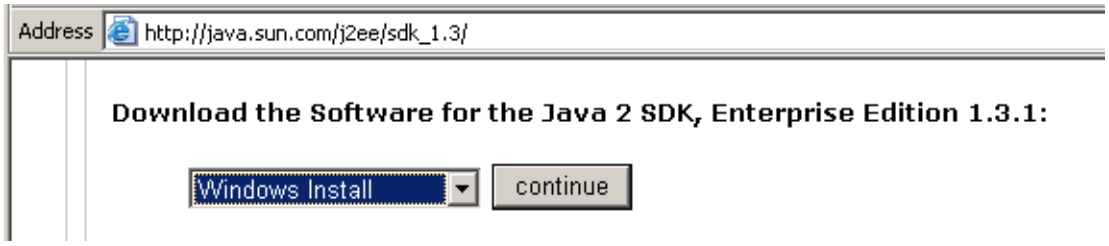


Figure 20.1. xxx (485)

21.1.2. Install

20.2. Double-click on **j2sdkee-1_3_1-win.exe**. Follow the directions to install (use default settings).
20.3. Set JAVA_HOME system variable to
20.4. **Start | Settings | Control Panel**.
20.5. Double-click **System**.
20.6. In tab **Advanced**: Select **Environment variables**.
20.7. Add System variable **JAVA_HOME** with value **c:\jdk1.4.0_01** (or the location of your JDK if different).
20.8. Add System variable **J2EE_HOME** with value **C:\j2sdkee1.3.1**.

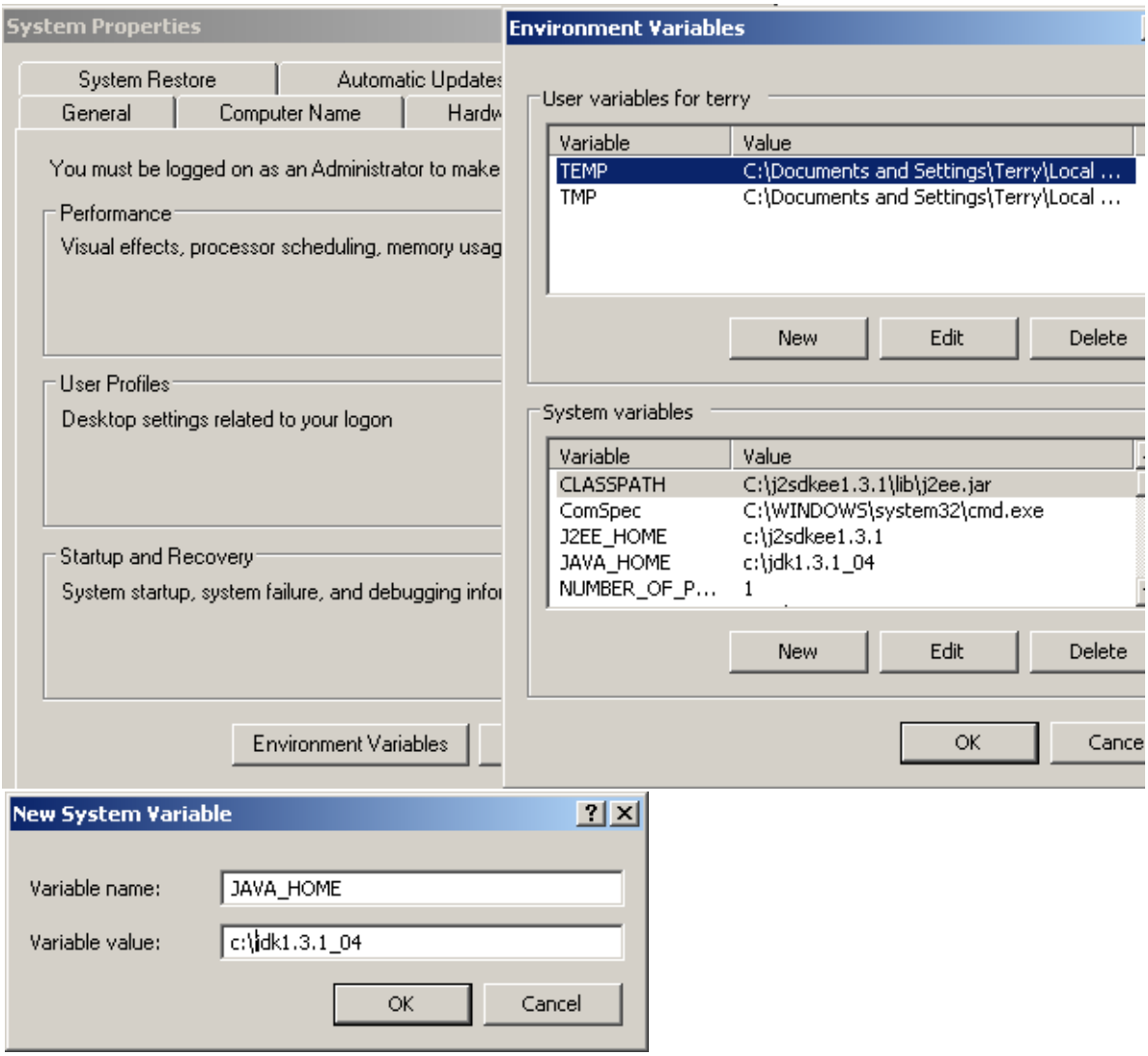


Figure 20.2. xxx (497,484)

21.1.3. Start J2EE server

20.9. Start J2EE server.

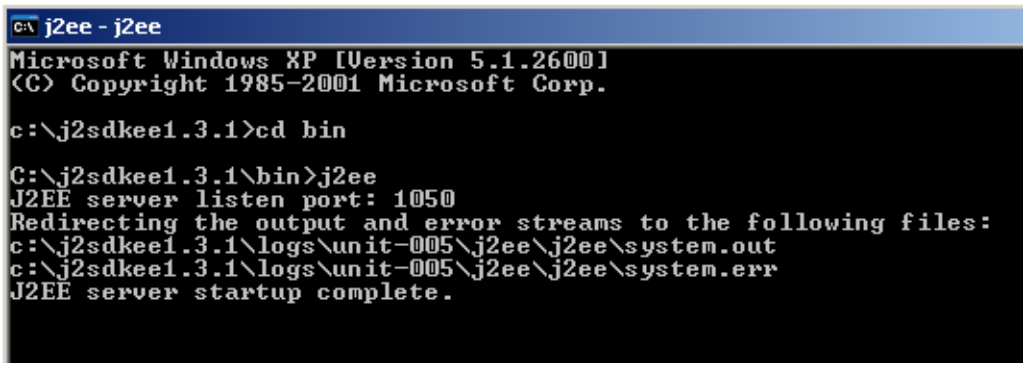


Figure 20.3. xxx (496)

20.10. Open **http://localhost:8000** to verify.

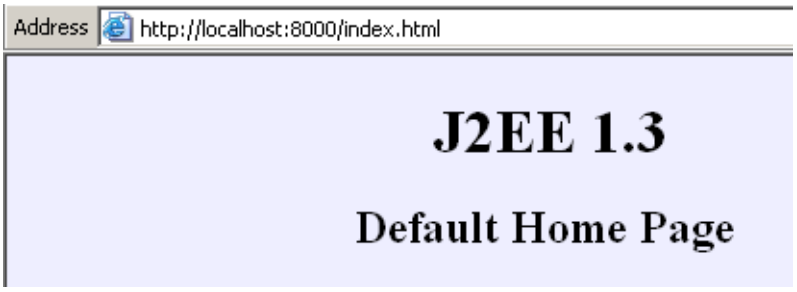


Figure 20.4. xxx (483)

21.1.4. Start Cloudscape

20.11. Start Cloudscape server.

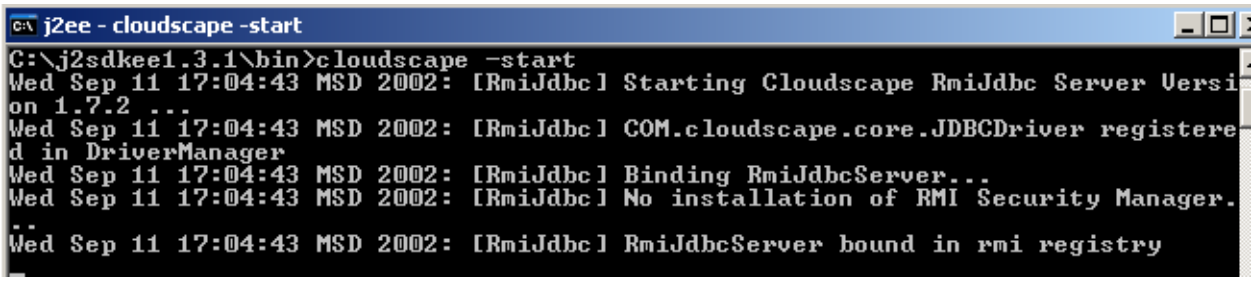


Figure 20.5. xxx (495)

20.12. Open **http://???** to verify.

21.2. Deploy Sun example application

21.2.1. Start deploy tool

20.13. Double-click on **C:\j2sdkee1.3.1\bin\deploytool.bat** to start the deploy tool.

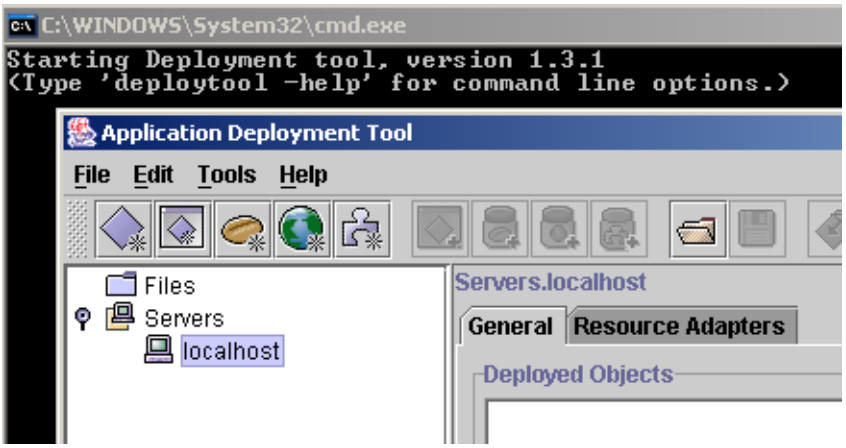


Figure 20.6. xxx (494)

21.2.2. Open the application

Select File | Open.
Select C:\j2sdkee1.3.1\doc\samples\cmpcustomer\cmpcustomer.ear.

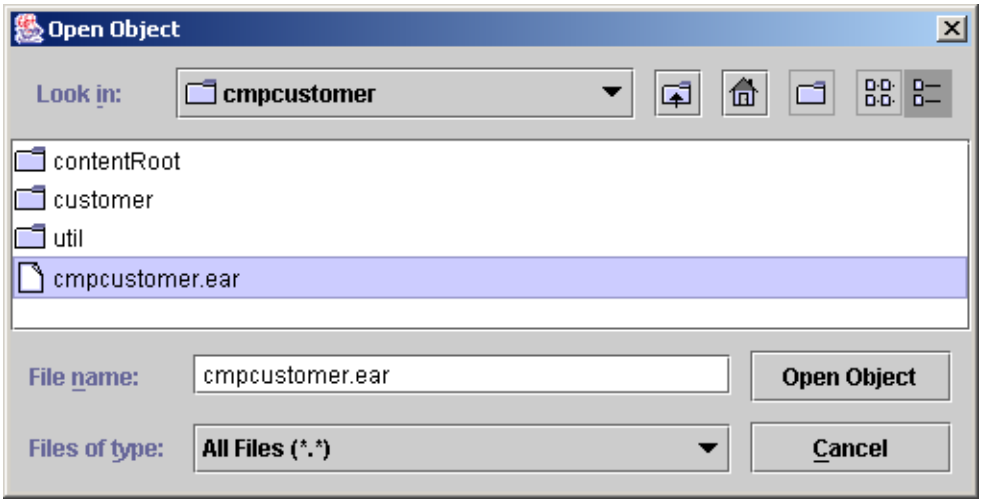


Figure 20.7. xxx (482)

Click Open Object.

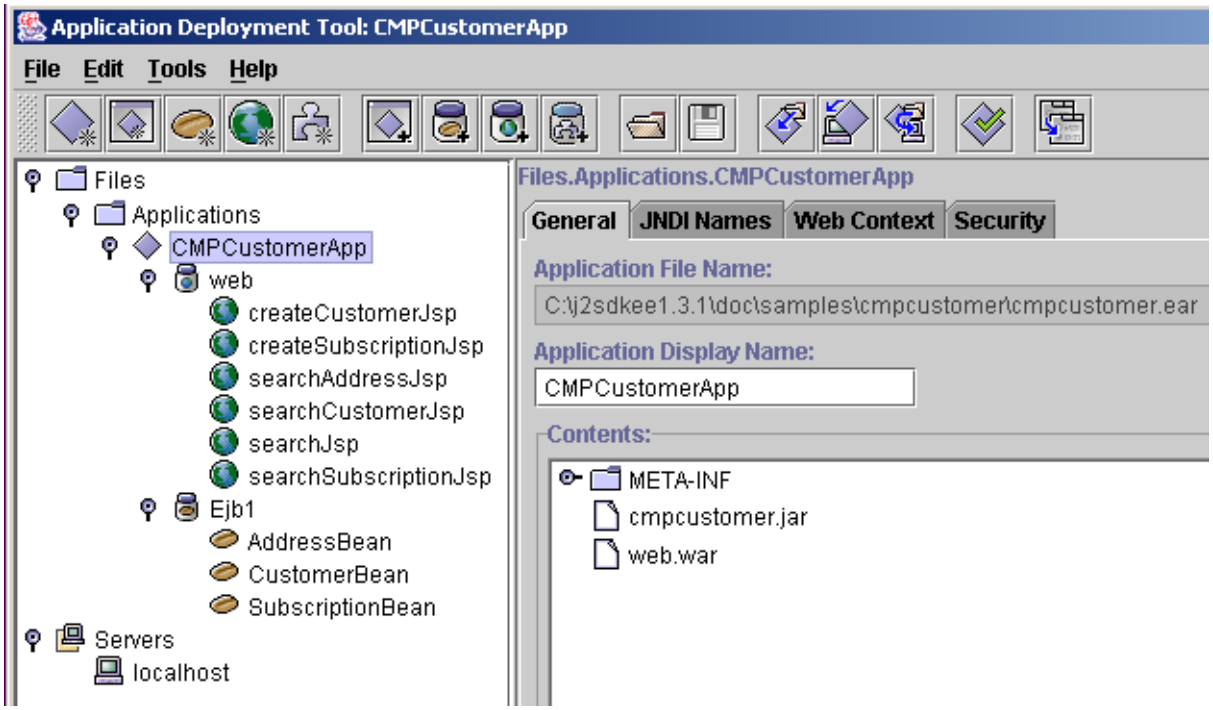


Figure 20.8. xxx (492)

21.2.3. Generate SQL

from C:\j2sdkee1.3.1\doc\release\CMP-RI.html

Before you can run the sample application, be sure that the application has been deployed and that the enterprise bean SQL code has been generated. Use the deploytool's Deploy function (available from the Tools menu) to deploy the application.

To generate the SQL:

- Select Ejb1 beneath the CMPCustomerApp application.
- Select the General tab.
- Select Deployment Settings.
- From the Deployment Settings screen, select Generate SQL Now. This operation generates the SQL statements.

You may now run the application. From a browser window, enter the following location:

http://localhost:8000/customer

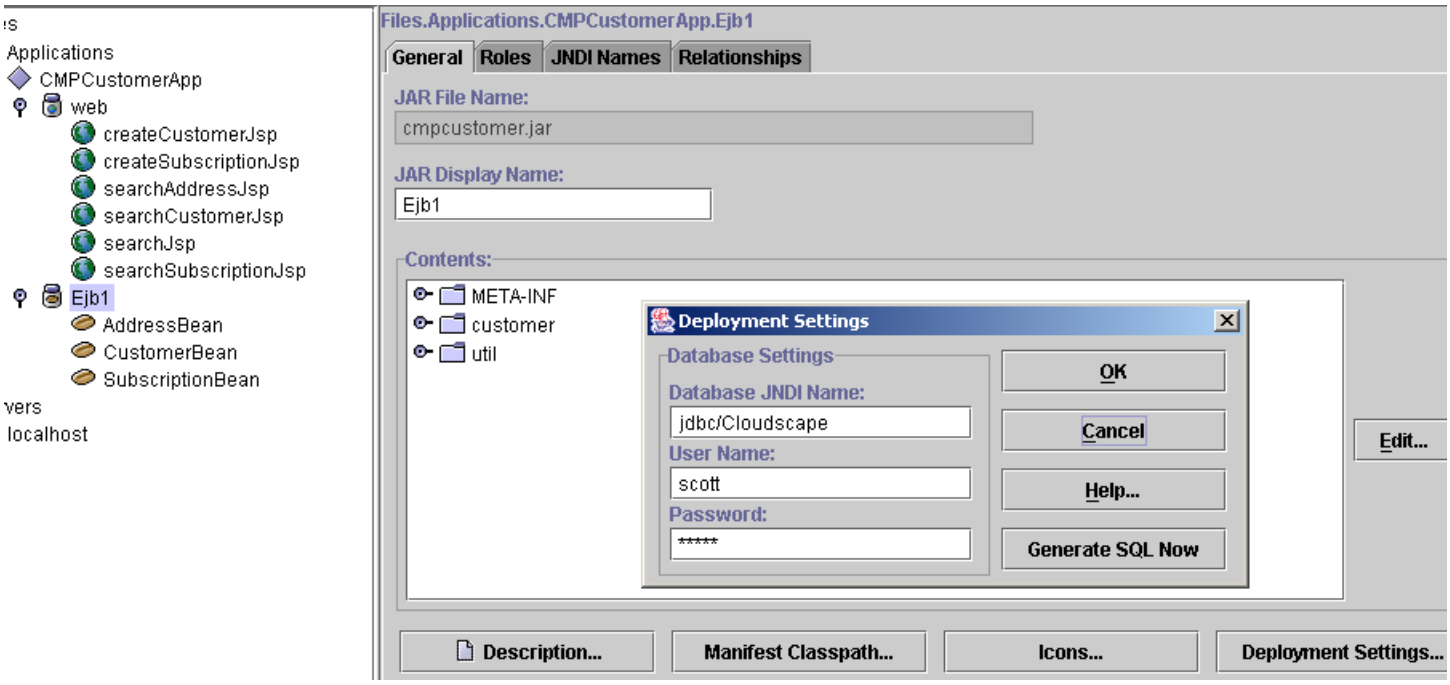


Figure 20.9. xxx (481)

Dialog appears “SQL Generation Complete”. Click OK. Dialog Deployment Settings. Click OK.

21.2.4. Deploy

Select Tools | Deploy. The appears.
Check Return Client Jar.

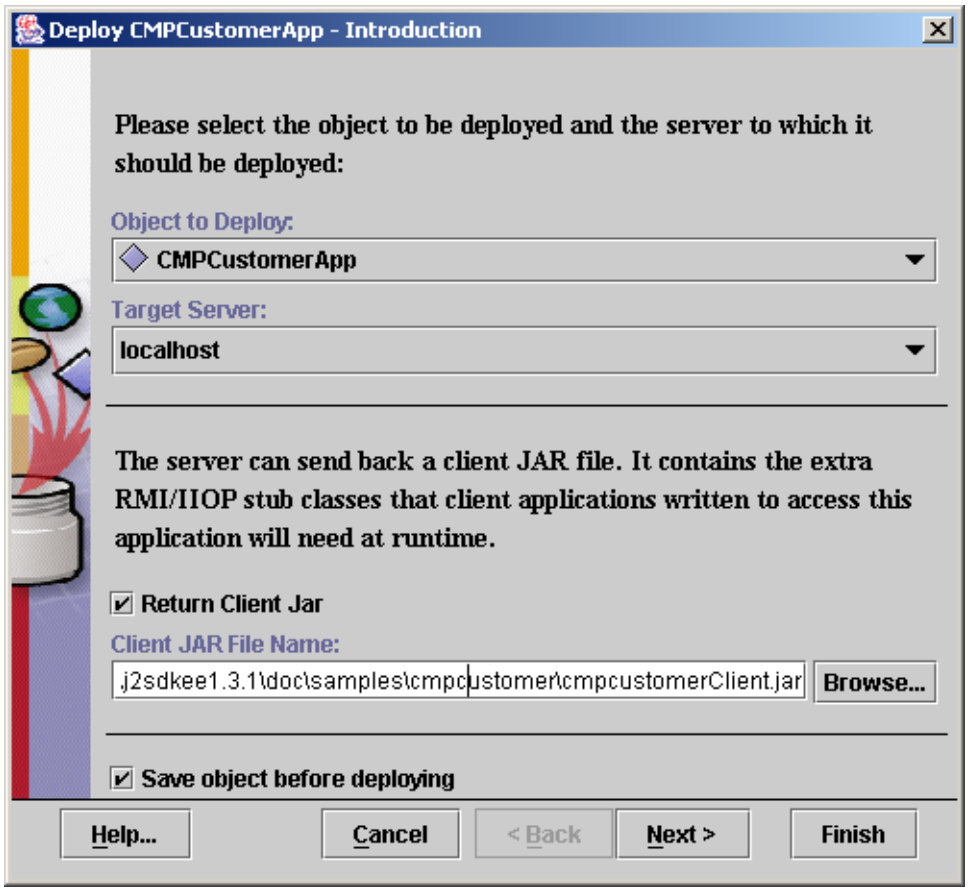


Figure 20.10. xxx (481)

Click Next.

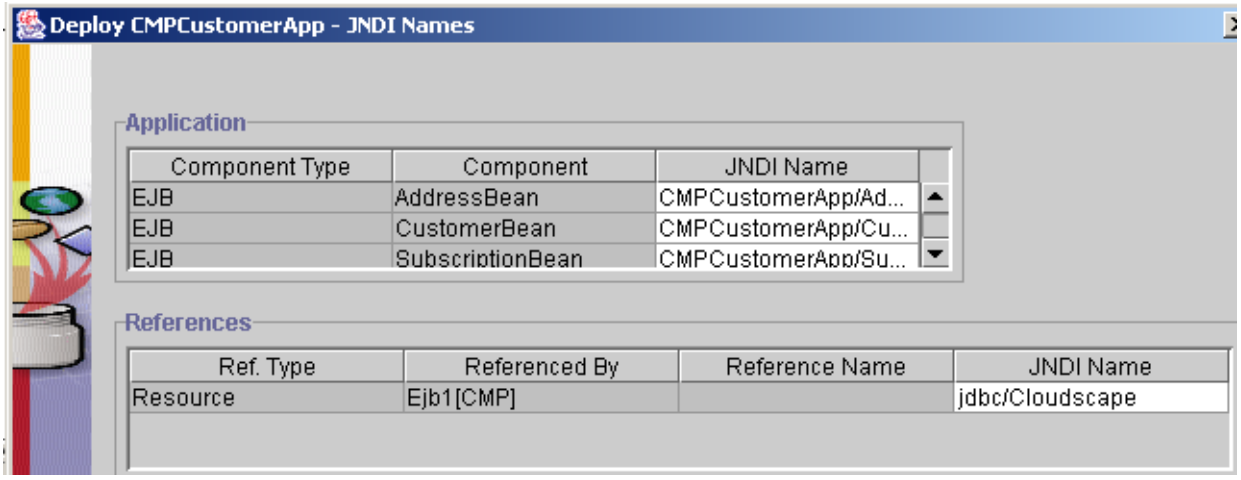


Figure 20.11. xxx (479)

Click Next.

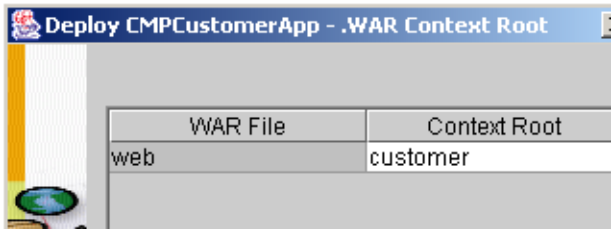


Figure 20.12. xxx (478)

Click Finish. Appears Deployment Progress dialog.

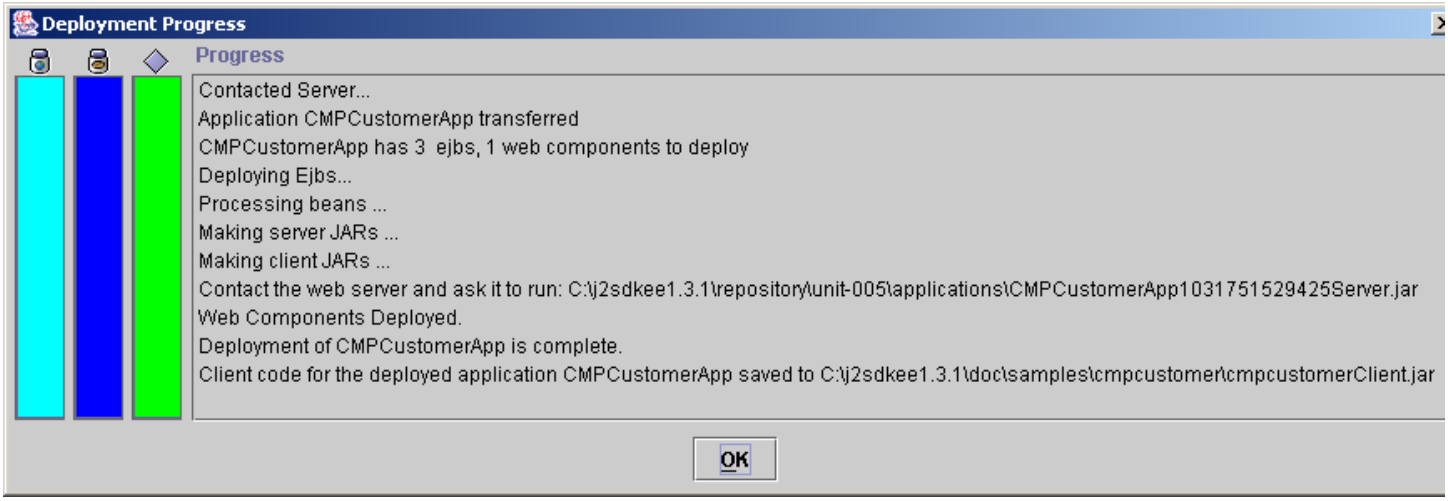


Figure 20.13. xxx (477)

Click OK.

20.14. In IE: Open http://localhost:8000/customer/index.html.

Figure 20.14. xxxxut (476)

21.3. Set IDEA EJB project properties

20.15. In IDE: Select **File | Project properties**.
20.16. Select tab **EJB**.
20.17. Click **+**. The dialog “Create EJB Group” appears.
20.18. For Name: Enter **EJBGroup1**.
20.19. For path to ejb-jar.xml: Enter xxx.

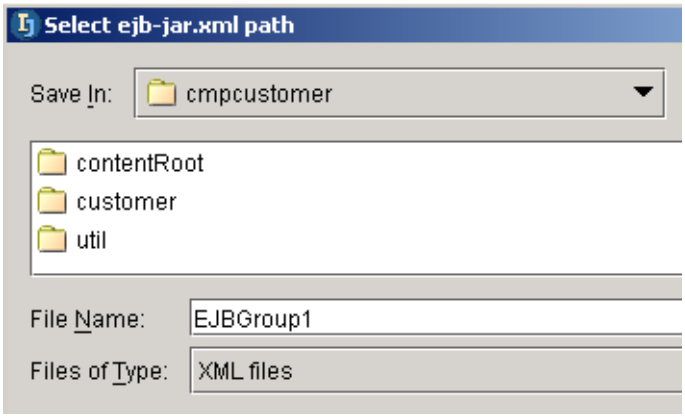


Figure 20.15. xxxxut (475)

20.20. Check Sourcepath.
20.21. For Sourcepath enter xxx:

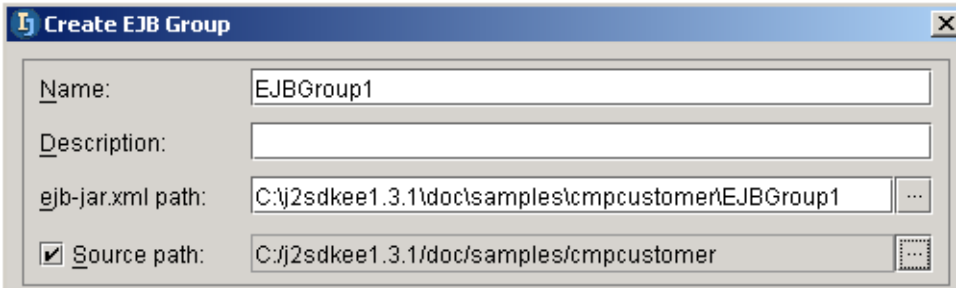


Figure 20.16. xxxxut (474)

20.22. Click **OK**.

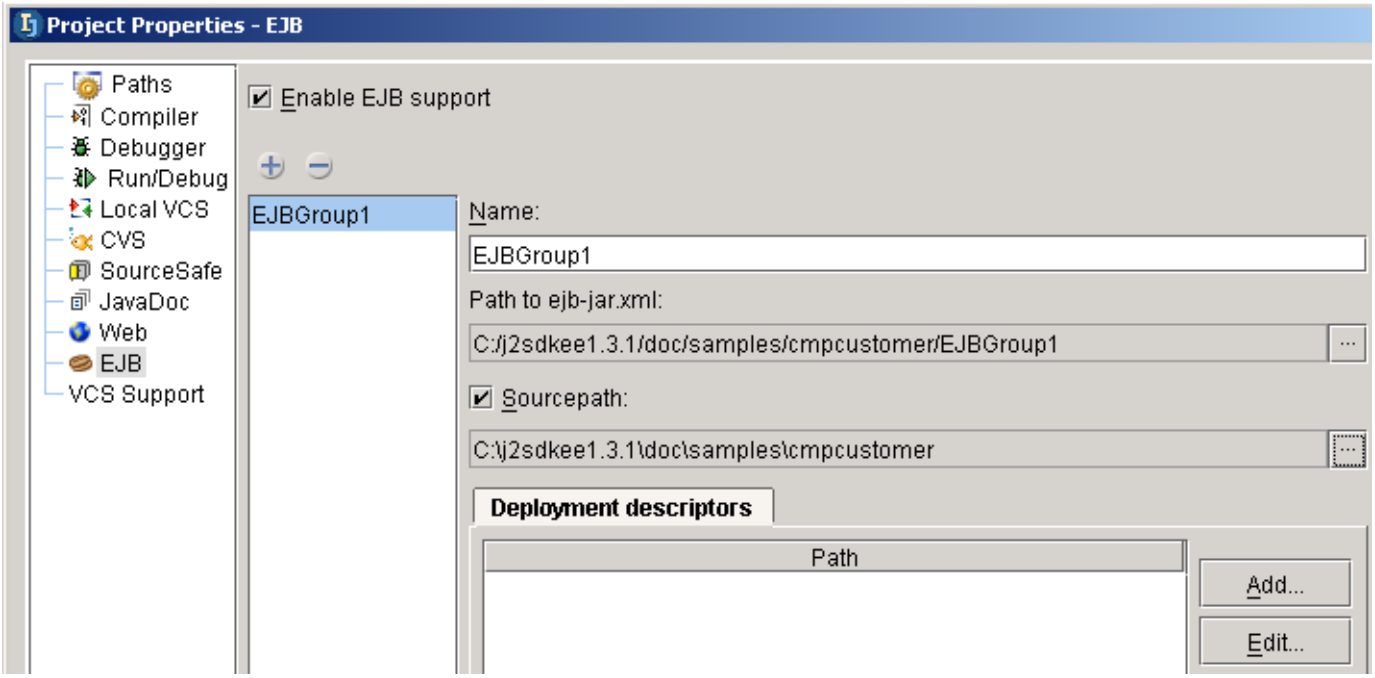


Figure 20.17. xxxxut (491)

20.23. Click **OK**.

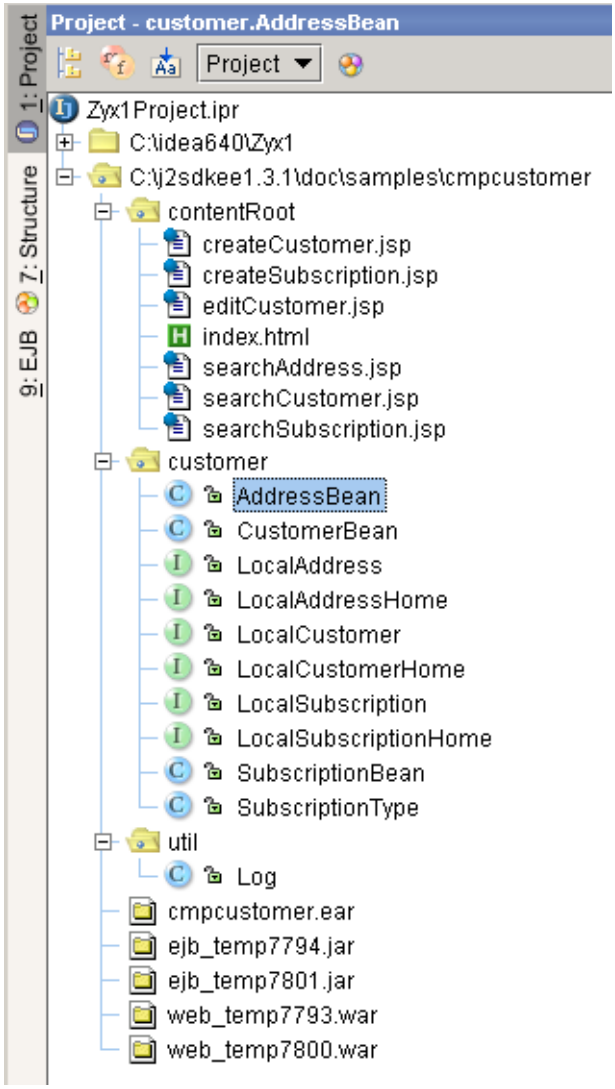


Figure 20.18. xxxxut (490)

21.4. Modify source in IDEA

Figure 20.19. xxxxut (489)

21.5. Redeploy

20.24. Select **Tools | Update and redeploy**.

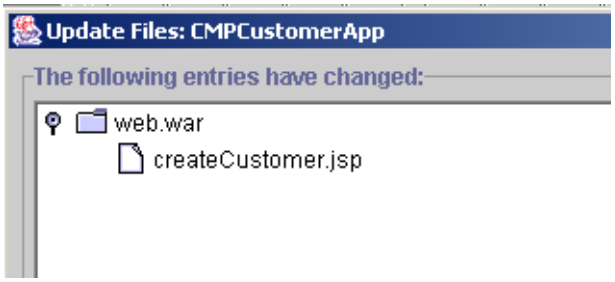


Figure 20.20. xxxxut (488)

20.25. Click **OK**. The dialog “Deployment progress” appears.

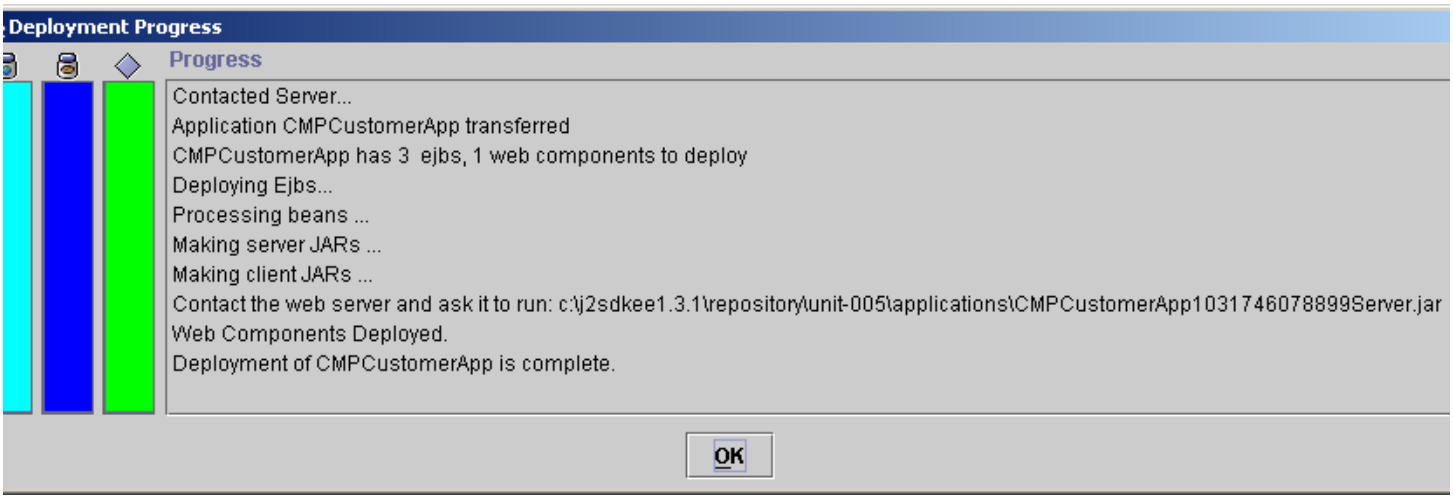


Figure 20.21. xxxxut (487)

20.26. **OK**.

20.27. Click on Create a new customer.

Figure 20.22. xxxxut (486)

Part F. Tools and resources

The chapters in this part describe how to integrate external tools (plugins) and resources within IDEA.

22. Plugins X

20020919TTT: description of idea examples added.
see C:\idea640\doc\openapi\plugins.html
Consult ?? for details.

22.1. Install a plugin

22.1.1. Find a plugin

21.1. Open www.intellij.org. The page lists (among other things) available plugins for IDEA.

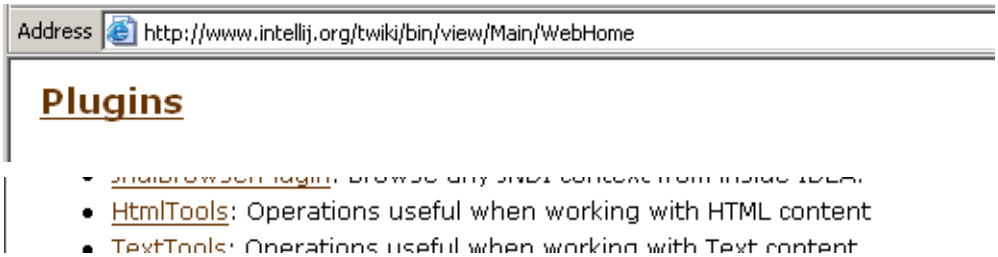


Figure 21.1. www.intellij.org start page (538,537)

21.2. Click on HtmlTools. A listing of available HTML tools appears.

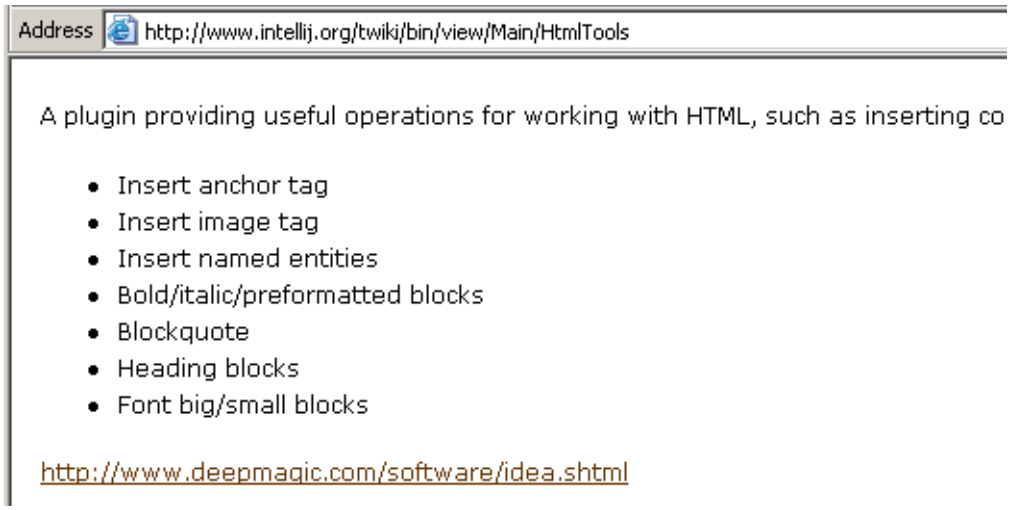


Figure 21.2. HtmlTools (536)

21.3. Click on the link. Private website.

21.4. Download HTML Tools Plugin v1.3 (zip file).

22.1.2. Install files

22.1.2.1. Class / XML files XXX

22.1.2.2. JAR file

21.5. Unzip the file.
21.6. Copy html.jar to C:\idea640\plugins.
21.7. Restart IDEA. Note the HTML menu item in the main menu.

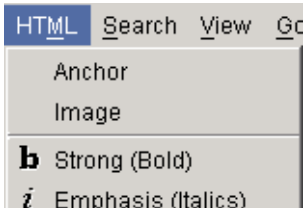


Figure 21.3. HTML main menu item (535)

22.1.3. Using the plugin

21.8. Create an HTML file.
21.9. Add the text shown in the following diagram.

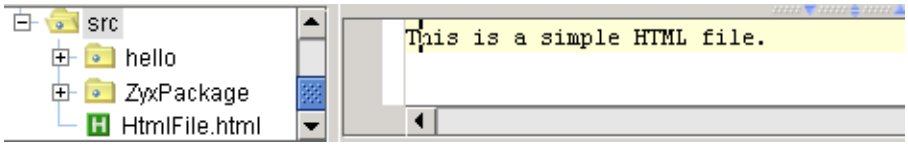


Figure 21.4. Simple HTML file (534)

21.10. Select a word in the text.
21.11. From the main menu select HTML / Strong(Bold). The html text is added.

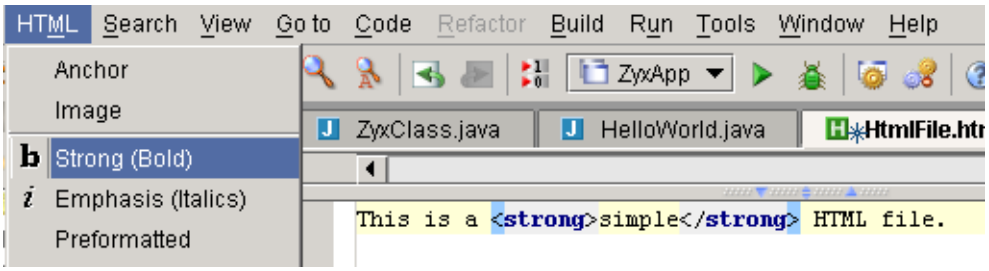


Figure 21.5. HTML bold tags added to text (533)

22.2. Create a plugin

Note: The code for the following examples are available in dir **%idea%\doc\openapi\examples**.
20020919TTT: you must first add the idea640\lib jars files to the class path to compile.

22.2.1. Application / project plugin

The code for this example is available in dir **%idea%\doc\openapi\examples\plugin**.

22.2.1.1. Create jar

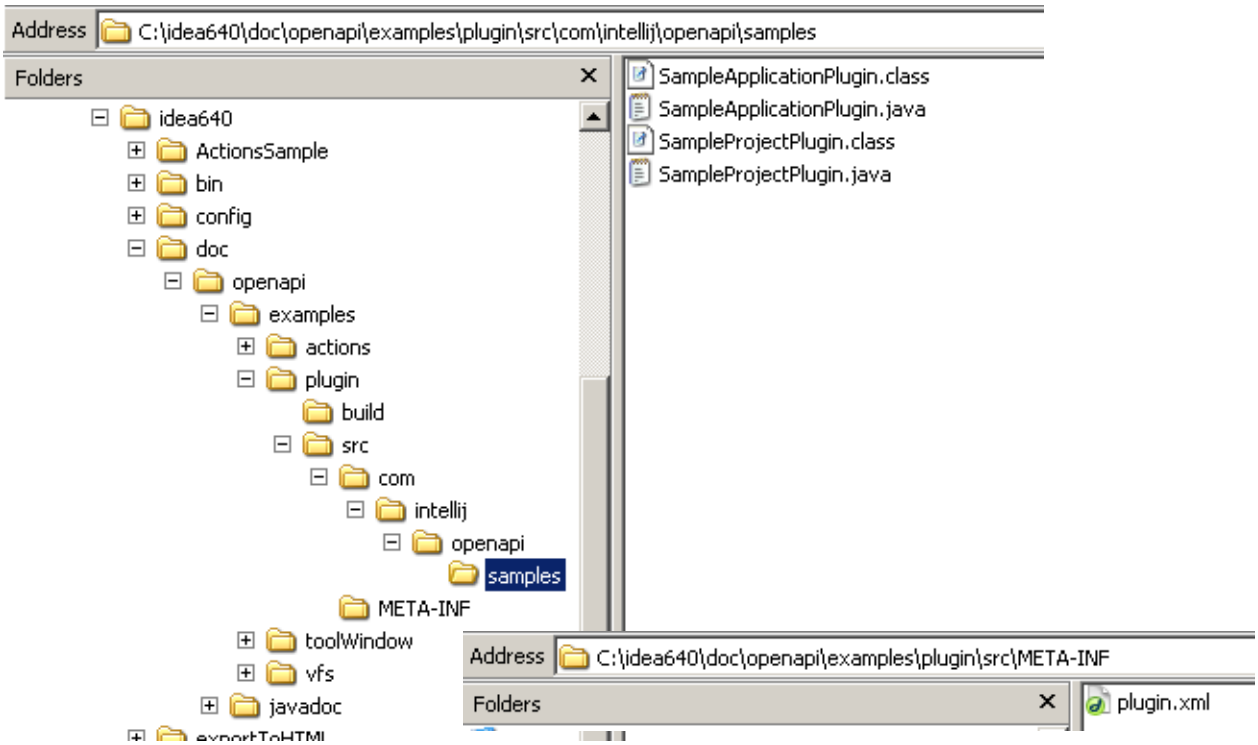


Figure 21.6. xxx (465,464)

21.12. Create and compile file **com\intellij\openapi\samples\SampleApplicationPlugin.java**:

```
package com.intellij.openapi.samples;
import com.intellij.openapi.components.ProjectComponent;
/**
 * <h3>SampleProjectPlugin</h3>
 * Project level plugin sample showing IDEA <b>OpenAPI</b> basics.<br>
 * Implements <code>ApplicationComponent</code> interface.
```

```
 */
public class SampleProjectPlugin implements ProjectComponent {
  /**
   * Method is called after plugin is already created and configured. Plugin
can start to communicate with
   * other plugins only in this method.
   */
  public void initComponent() {
    System.out.println("SampleProjectPlugin: initComponent");
  }

  /**
   * This method is called on plugin disposion.
   */
  public void disposeComponent() {
    System.out.println("SampleProjectPlugin: disposeComponent");
  }

  /**
   * Invoked when project is opened.
   */
  public void projectOpened() {
    System.out.println("SampleProjectPlugin: projectOpened");
  }

  /**
   * Invoked when project is closed.
   */
  public void projectClosed() {
    System.out.println("SampleProjectPlugin: projectClosed");
  }

  /**
   * Returns the name of component
   * @return String representing component name. Use
plugin_name.component_name notation.
   */
  public String getComponentName() {
    return "Sample.SampleProjectPlugin";
  }
}
```

21.13. Create and compile file **com\intellij\openapi\samples\SampleApplicationPlugin.java**:

```
package com.intellij.openapi.samples;
import com.intellij.openapi.components.ApplicationComponent;
/**
 * <h3>SampleApplicationPlugin</h3>
 * Application level plugin sample showing IDEA <b>OpenAPI</b> basics.<br>
 * Implements <code>ApplicationComponent</code> interface.
 */
public class SampleApplicationPlugin implements ApplicationComponent {
  /**
   * Method is called after plugin is already created and configured. Plugin
can start to communicate with
   * other plugins only in this method.
   */
  public void initComponent() {
```

```
    System.out.println("SampleApplicationPlugin: initComponent");
  }

  /**
   * This method is called on plugin disposion.
   */
  public void disposeComponent() {
    System.out.println("SampleApplicationPlugin: disposeComponent");
  }

  /**
   * Returns the name of component
   * @return String representing component name. Use
plugin_name.component_name notation.
   */
  public String getComponentName() {
    return "Sample.SampleApplicationPlugin";
  }
}
```

21.14. Create file **META-INF\plugin.xml**:

```
- <idea-plugin>
- <!--
 plugin name
-->
<name>Sample</name>
- <!--
 description
-->
<description>SamplePlugin</description>
- <!--
 plugin versuin
-->
<version>1.0</version>
<vendor>IntelliJ</vendor>
- <!--
 minimum and maximum IDEA version plugin is supposed to work with
-->
<idea-version min="3.0" max="3.1" />
- <!--
 application components of the plugin
-->
- <application-components>
- <component>
- <!--
 component implementation class
-->
<implementation-
class>com.intellij.openapi.samples.SampleApplicationPlugin</implementation-
class>
- <!--
 component interface class
-->
<interface-class>com.intellij.openapi.samples.SampleApplicationPlugin</
interface-class>
</component>
</application-components>
```

```
- <!--
 project components of the plugin
-->
- <project-components>
- <component>
<implementation-class>com.intellij.openapi.samples.SampleProjectPlugin</
implementation-class>
<interface-class>com.intellij.openapi.samples.SampleProjectPlugin</
interface-class>
</component>
</project-components>
</idea-plugin>
```

21.15. Compile.

21.16. Pack the files into **Sample.jar**.

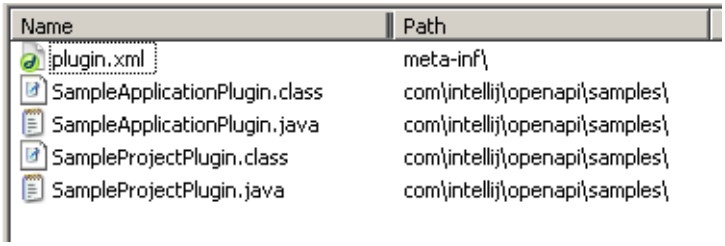


Figure 21.7. Sample.jar contents (463)

22.2.1.2. Install plugin

21.17. Close IDEA (if open).

21.18. Copy Sample.jar to **C:\idea640\plugins**.

22.2.1.3. Test plugin

21.19. Start IDEA.

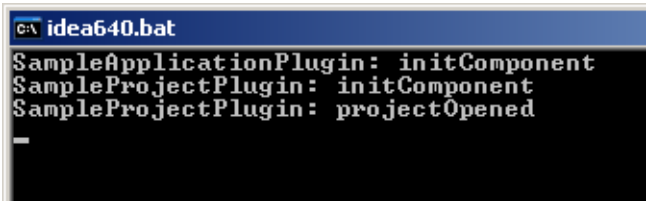


Figure 21.8. xxx (462)

22.2.2. Action plugin

The code for this example is available in dir **%idea%\doc\openapi\examples\actions**.

22.2.2.1. Create jar

21.20. Create and compile file **com\intellij\openapi\samples\ActionsPlugin.java**:

```
package com.intellij.openapi.samples;
import com.intellij.openapi.components.ApplicationComponent;
/**
 * <h3>SampleApplicationPlugin</h3>
 *
 * Application level plugin sample showing IDEA <b>OpenAPI</b> basics.<br>
 * Implements <code>ApplicationComponent</code> interface.
 *
 */
public class ActionsPlugin implements ApplicationComponent {

  /**
   * Method is called after plugin is already created and configured. Plugin
can start to communicate with
   * other plugins only in this method.
   */
  public void initComponent() {
  }

  /**
   * This method is called on plugin disposion.
   */
  public void disposeComponent() {
  }

  /**
   * Returns the name of component
   *
   * @return String representing component name. Use
PluginName.ComponentName notation
   *  to avoid conflicts.
   */
  public String getComponentName() {
    return "ActionsSample.ActionsPlugin";
  }
}
```

21.21. Create and compile file **com\intellij\openapi\samples\HelloWorldAction.java**:

```
package com.intellij.openapi.samples;

import com.intellij.openapi.actionSystem.AnAction;
import com.intellij.openapi.actionSystem.AnActionEvent;
import com.intellij.openapi.actionSystem.DataConstants;
import com.intellij.openapi.ui.Messages;
import com.intellij.openapi.project.Project;
```

```
import javax.swing.*;

public class HelloWorldAction extends AnAction {
  public void actionPerformed(AnActionEvent event) {
    Project project =
(Project)event.getDataContext().getData(DataConstants.PROJECT);
    Messages.showMessageDialog(project, "Hello World!", "Information",
Messages.getInformationIcon());
  }
}
```

21.22. Create and compile file **com\intellij\openapi\samples\GarbageCollectionAction.java**:

```
package com.intellij.openapi.samples;

import com.intellij.openapi.actionSystem.ActionPlaces;
import com.intellij.openapi.actionSystem.AnAction;
import com.intellij.openapi.actionSystem.AnActionEvent;
import com.intellij.openapi.actionSystem.Presentation;

import javax.swing.*;

public class GarbageCollectionAction extends AnAction {
  private ImageIcon myIcon;

  public GarbageCollectionAction() {
    super("GC", "Run garbage collection", null);
  }

  public void actionPerformed(AnActionEvent event) {
    System.gc();
  }

  public void update(AnActionEvent event) {
    super.update(event);
    Presentation presentation = event.getPresentation();
    if (ActionPlaces.MAIN_TOOLBAR.equals(event.getPlace())) {
      if (myIcon == null) {
       java.net.URL resource = GarbageCollectionAction.class.getResource("/
icons/garbage.png");
        myIcon = new ImageIcon(resource);
      }
      presentation.setIcon(myIcon);
    }
  }
}
```

21.23. Create file **META-INF\plugin.xml**:

```
- <idea-plugin>
- <!--
 Plugin name
-->
<name>ActionsSample</name>
- <!--
 Description
-->
<description>ActionSamplePlugin</description>
```

```
- <!--
 Plugin version
-->
<version>1.0</version>
- <!--
 Plugin's vendor
-->
<vendor>IntelliJ</vendor>
- <!--
 Minimum and maximum IDEA version plugin is supposed to work with
-->
<idea-version min="3.0" max="3.1" />
- <!--
 Plugin's application components
-->
- <application-components>
- <component>
- <!--
 Component's implementation class
-->
<implementation-class>com.intellij.openapi.samples.ActionsPlugin</
implementation-class>
- <!--
 Component's interface class
-->
<interface-class>com.intellij.openapi.samples.ActionsPlugin</interface-
class>
</component>
</application-components>
- <!--
 Component's actions
-->
- <actions>
- <!--
 We use "PluginName.ComponentName.ActionName" notation for "id" to avoid
conflicts
-->
- <action id="ActionsSample.ActionsPlugin.GarbageCollection"
class="com.intellij.openapi.samples.GarbageCollectionAction" text="Collect
_garbage" description="Run garbage collector">
<shortcut first-keystroke="control alt G" second-keystroke="C"
keymap="$default" />
</action>
<action id="Actions.ActionsPlugin.HelloWorld1"
class="com.intellij.openapi.samples.HelloWorldAction" text="Hello World1"
description="" />
- <group id="Actions.ActionsPlugin.SampleGroup" text="S_ample"
description="Sample group">
<reference id="ActionsSample.ActionsPlugin.GarbageCollection" />
<separator />
<action id="Actions.ActionsPlugin.HelloWorld"
class="com.intellij.openapi.samples.HelloWorldAction" text="Hello World"
description="" />
- <!--
adds this group to the main menu
-->
<add-to-group group-id="MainMenu" anchor="last" />
```

```
- <!--
adds this group to the main toolbar before the Help action
-->
<add-to-group group-id="MainToolBar" anchor="before" relative-to-
action="HelpTopics" />
</group>
- <!--
the group below contains only the "Hello World" action defined above
-->
- <group>
<reference id="Actions.ActionsPlugin.HelloWorld1" />
- <!--
the group is added to the editor popup menu
-->
<add-to-group group-id="EditorPopupGroup" anchor="after" relative-to-
action="GotoImplementation" />
</group>
</actions>
</idea-plugin>
```

21.24. Compile.

21.25. Pack the files into **ActionsSample.jar**.

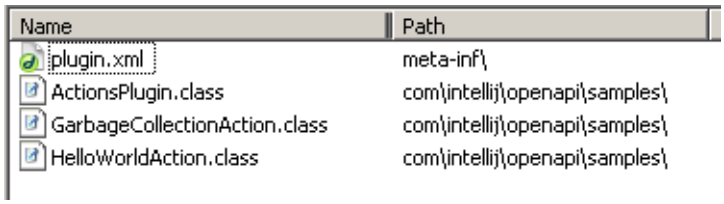


Figure 21.9. ActionsSample.jar contents (461)

22.2.2.2. Install plugin

21.26. Close IDEA (if open).

21.27. Copy ActionsSample.jar to **C:\idea640\plugins**.

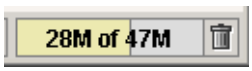
22.2.2.3. Test plugin

21.28. Start IDEA.

21.29. Select **Sample | HelloWorld**. An information dialog appears.

Figure 21.10. xxx (460,459)

21.30. Click **OK**.

21.31. Select **Sample | Collection garbage**. The garbage is collected (note the difference in the heap size 

).

22.2.3. Tool window plugin

The code for this example is available in dir **%idea%\doc\openapi\examples\toolWindow**.

22.2.3.1. Create jar

21.32. Create and compile file **com\intellij\openapi\samples\SimpleToolWindowPlugin.java**:

```
package com.intellij.openapi.samples;

import com.intellij.openapi.components.ProjectComponent;
import com.intellij.openapi.project.Project;
import com.intellij.openapi.wm.ToolWindow;
import com.intellij.openapi.wm.ToolWindowAnchor;
import com.intellij.openapi.wm.ToolWindowManager;

import javax.swing.*;
import java.awt.*;

public class SimpleToolWindowPlugin implements ProjectComponent {
  private Project myProject;

  private ToolWindow myToolWindow;
  private JPanel myContentPanel;

  public static final String TOOL_WINDOW_ID = "SimpleToolWindow";

  public SimpleToolWindowPlugin(Project project) {
    myProject = project;
  }

  public void projectOpened() {
    initToolWindow();
  }

  public void projectClosed() {
    unregisterToolWindow();
  }

  public void initComponent() {
    // empty
  }

  public void disposeComponent() {
    // empty
  }

  public String getComponentName() {
    return "SimpleToolWindow.SimpleToolWindowPlugin";
  }

  private void initToolWindow() {
```

```
    ToolWindowManager toolWindowManager =
ToolWindowManager.getInstance(myProject);

    myContentPanel = new JPanel(new BorderLayout());


myContentPanel.setBackground(UIManager.getColor("Tree.textBackground"));
    myContentPanel.add(new JLabel("Hello World!", JLabel.CENTER),
BorderLayout.CENTER);

    myToolWindow = toolWindowManager.registerToolWindow(TOOL_WINDOW_ID,
myContentPanel, ToolWindowAnchor.LEFT);
    myToolWindow.setTitle("SimpleWindow");
  }

  private void unregisterToolWindow() {
    ToolWindowManager toolWindowManager =
ToolWindowManager.getInstance(myProject);
    toolWindowManager.unregisterToolWindow(TOOL_WINDOW_ID);
  }
}
```

21.33. Create file **META-INF\plugin.xml**:

```
- <idea-plugin>
- <!--
 Plugin name
-->
<name>SimpleToolWindow</name>
- <!--
 Description
-->
<description>An example on installing a tool window</description>
- <!--
 Plugin version
-->
<version>1.0</version>
- <!--
 Plugin's vendor
-->
<vendor>IntelliJ</vendor>
- <!--
 Minimum and maximum IDEA version plugin is supposed to work with
-->
<idea-version min="3.0" max="3.1" />
- <!--
 Plugin's application components
-->
- <project-components>
- <component>
- <!--
 Component's implementation class
-->
<implementation-class>com.intellij.openapi.samples.SimpleToolWindowPlugin</
implementation-class>
- <!--
 Component's interface class
```

```
-->
<interface-class>com.intellij.openapi.samples.SimpleToolWindowPlugin</
interface-class>
</component>
</project-components>
</idea-plugin>
```

21.34. Compile.
21.35. Pack the files into **SimpleToolWindow.jar**.

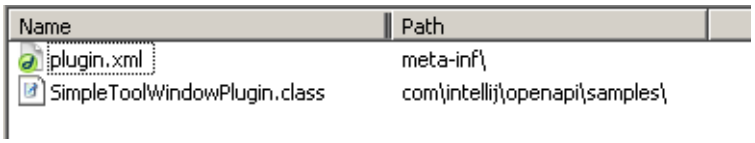


Figure 21.11. SimpleToolWindow.jar contents (457)

22.2.3.2. Install plugin

21.36. Close IDEA (if open).
21.37. Copy SimpleToolWindow.jar to **C:\idea640\plugins**.

22.2.3.3. Test plugin

21.38. Start IDEA. Note the tool window SimpleToolWindow.
21.39. Open **SimpleToolWindow**.

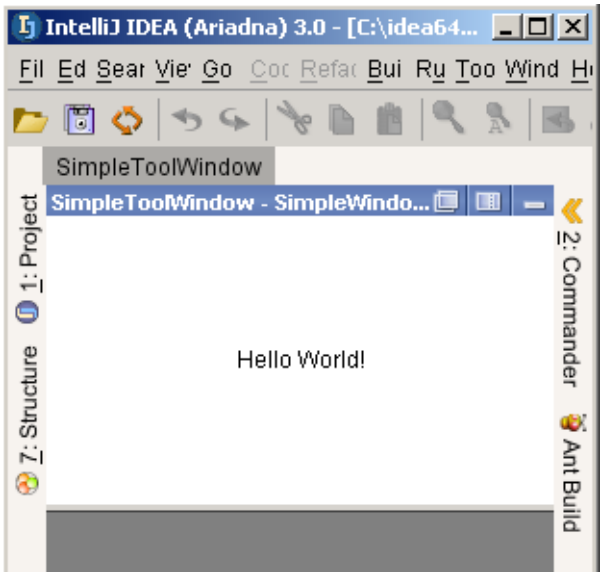


Figure 21.12. xxx (456)

22.2.4. Virtual file system (Vfs) plugin

The code for this example is available in dir **%idea%\doc\openapi\examples\vfs**.

22.2.4.1. Create jar

21.40. Create and compile file **com\intellij\openapi\samples\VfsSamplePlugin.java**:

```
package com.intellij.openapi.samples;

import com.intellij.openapi.components.ProjectComponent;
import com.intellij.openapi.project.Project;
import com.intellij.openapi.projectRoots.ProjectRootManager;
import com.intellij.openapi.projectRoots.ProjectRootType;
import com.intellij.openapi.vfs.*;
import com.intellij.openapi.fileTypes.FileTypeManager;
import com.intellij.openapi.fileTypes.FileType;

public class VfsSamplePlugin implements ProjectComponent {
  private Project myProject;
  private MyVfsListener myVfsListener;

  private static int ourJavaFilesCount;

  public VfsSamplePlugin(Project project) {
    myProject = project;
  }

  public void projectOpened() {
    ProjectRootManager projectRootManager =
ProjectRootManager.getInstance(myProject);
    VirtualFile[] sourceRoots =
projectRootManager.getRootFiles(ProjectRootType.SOURCE);

    ourJavaFilesCount = 0;

    for (int i = 0; i < sourceRoots.length; i++) {
      VirtualFile sourceRoot = sourceRoots[i];
      countJavaFiles(sourceRoot);
    }

    myVfsListener = new MyVfsListener();
    VirtualFileManager.getInstance().addVirtualFileListener(myVfsListener);
  }

  public void projectClosed() {

VirtualFileManager.getInstance().removeVirtualFileListener(myVfsListener);
  }

  public void initComponent() {
    // empty
```

```
  }

  public void disposeComponent() {
    // empty
  }

  public String getComponentName() {
    return "VfsSample.VfsSamplePlugin";
  }

  private void updateCount(VirtualFile file, int increase) {
    FileTypeManager fileTypeManager = FileTypeManager.getInstance();
    if (!fileTypeManager.isFileIgnored(file.getName())
      && fileTypeManager.getFileTypeByFile(file) == FileType.JAVA) {
      ourJavaFilesCount += increase;
      System.out.println("ourJavaFilesCount = " + ourJavaFilesCount);
    }
  }

  private void countJavaFiles(VirtualFile virtualFile) {
    VirtualFile[] children = virtualFile.getChildren();
    if (children == null) return;
    for (int i = 0; i < children.length; i++) {
      VirtualFile child = children[i];
      updateCount(child, +1);
      countJavaFiles(child);
    }
  }

  // ------------------------------------------------------------------------
---
  // MyVfsListener
  // ------------------------------------------------------------------------
---

  private class MyVfsListener extends VirtualFileAdapter {
    public void fileCreated(VirtualFileEvent event) {
      updateCount(event.getFile(), +1);
    }

    public void fileDeleted(VirtualFileEvent event) {
      updateCount(event.getFile(), -1);
    }
  }
}
```

21.41. Create file **META-INF\plugin.xml**:

```
- <idea-plugin>
- <!--
 Plugin name
-->
<name>VfsSample</name>
- <!--
 Description
-->
```

```
<description>An example of using IDEA's Vfs, dynamically keeps the count of
Java files in sourcepaths</description>
- <!--
 Plugin version
-->
<version>1.0</version>
- <!--
 Plugin's vendor
-->
<vendor>IntelliJ</vendor>
- <!--
 Minimum and maximum IDEA version plugin is supposed to work with
-->
<idea-version min="3.0" max="3.1" />
- <!--
 Plugin's application components
-->
- <project-components>
- <component>
- <!--
 Component's implementation class
-->
<implementation-class>com.intellij.openapi.samples.VfsSamplePlugin</
implementation-class>
- <!--
 Component's interface class
-->
<interface-class>com.intellij.openapi.samples.VfsSamplePlugin</interface-
class>
</component>
</project-components>
</idea-plugin>
```

21.42. Compile.

21.43. Pack the files into **VfsSample.jar**.

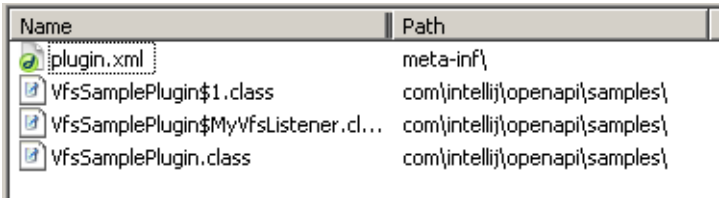


Figure 21.13. VfsSample.jar contents (455)

22.2.4.2. Install plugin

21.44. Close IDEA (if open).

21.45. Copy VfsSample.jar to **C:\idea640\plugins**.

22.2.4.3. Test plugin

21.46. Start IDEA. Note that the number of files are shown in the DOS window.

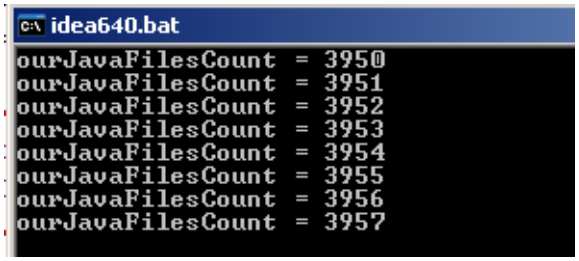


Figure 21.14. xxx (454)

If you create a Java file, the count will be incremented.

22.3. Publish a plugin XXX

23. External Tools X

Consult mike for details.
20020906TTT: not sure about this chapter.

23.1. Add

22.1. From the main menu select **Tools / IDE options**.
22.2. Select **External Tools**.
22.3. Click **Add**. The dialog **Edit Tool** appears.
22.4. For **Name** enter “ZyxTool”.
22.5. For **Group** enter 'ZyxGroup”.
22.6. For **Description** enter “ZyxTool description”.
22.7. For **Program** click on the dir button. The dialog “Select path” appears.
22.8. Select a tool.

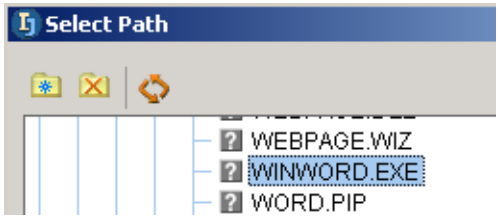


Figure 22.1. Selecting the external tool (532)

22.9. Click **OK**. The external tools info has been entered.

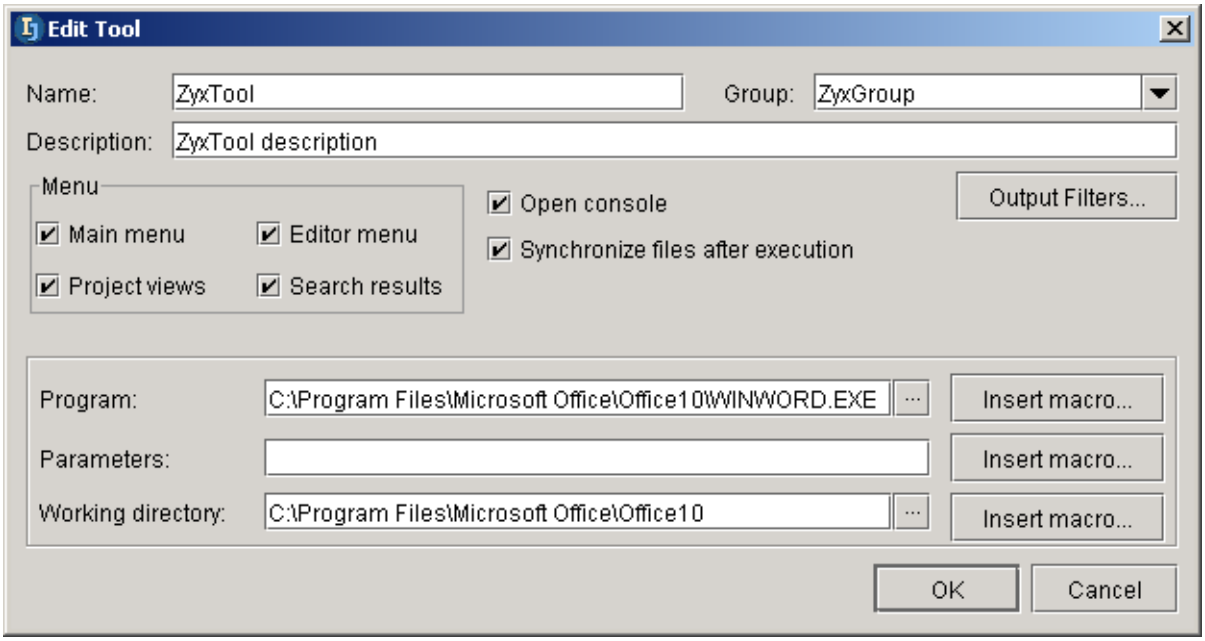


Figure 22.2. External tool settings (531)

22.10. Click **OK**. The tool is now included in the list.

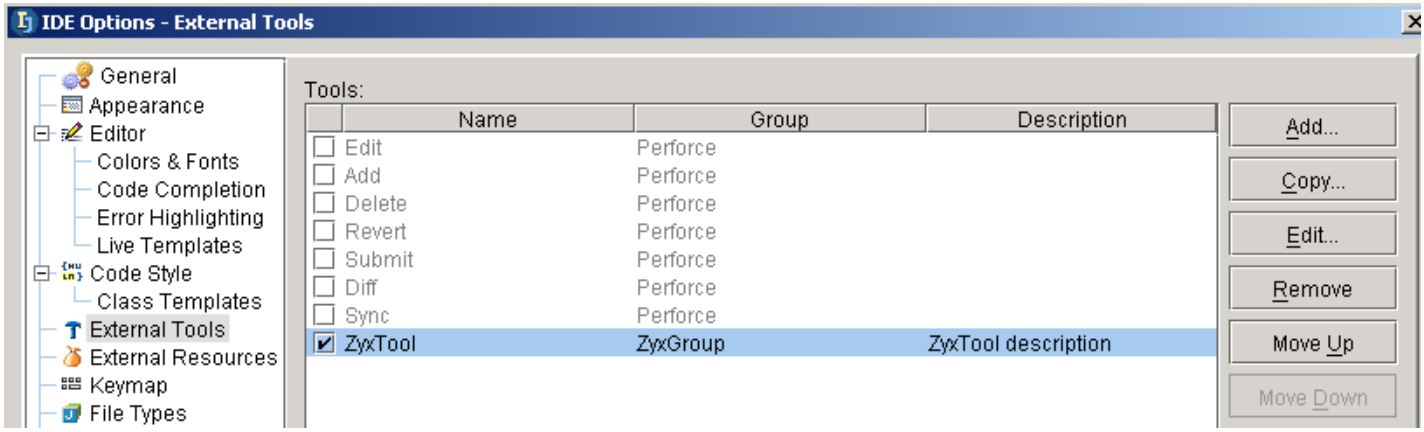


Figure 22.3. Tool in list of external tools (530)

22.11. Click **OK**.

23.2. Open

22.12. Select from the main menu **Tools / ZyxGroup / ZyxTool**.

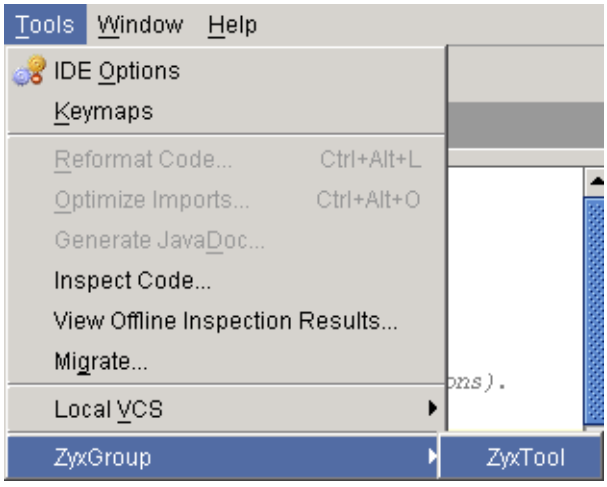


Figure 22.4. External tool in Tools menu (529)

The tool is opened. A message appears in IDEA.

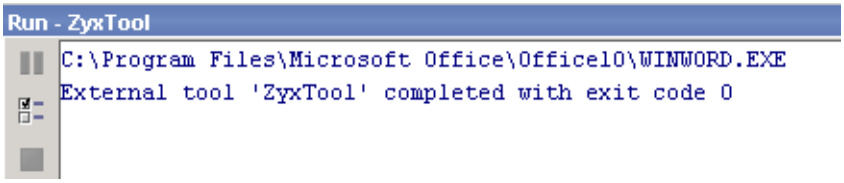


Figure 22.5. Message about external tool being opened (528)

24. External Resources XXX

contacts: mike

24.1. XXX

23.1.
Figure 23.1.

Part G. Appendices

This last part contains

25. FAQ XXX

This chapter contains the answers to many FAQs.

For more FAQ info see also:

- http://www.intellij.com/support/faq/
- Online IDEA FAQ at http://www.jguru.com/faq/home.jsp?topic=IntellijIDEA (questions can be posted at http://www.jguru.com/forums/home.jsp?topic=IntellijIDEA)

FAQ 1. Group of faqs

A FAQ section as a table

FAQ 1.1. A single faq	Faq text.
FAQ 1.2. A single faq	Faq text.

FAQ 2. Group of faqs

A FAQ section as text (all tables would be converted to text in the released PUBLIC doc

FAQ 2.1. A single faq

Faq text.

FAQ 2.2. A single faq

Faq text.

26. Trouble shooting XXX

TS 1. Group of TSs

A TS section as a table

TS 1.1. A single TS	TS text.
TS 1.2. A single TS	TS text.

TS 2. Group of TSs

A TS section as text (all tables would be converted to text in the released PUBLIC doc

TS 2.1. A single TS

TS text.

TS 2.2. A single TS

TS text.

27. Keymaps X

Hot keys allow you perform almost all actions within IDEA without having to select the action from a menu.

In the IDEA Options / Keymaps settings dialog you can

- **27.1. Select Active (page 375)**
- **27.2. Create (copy and modify) (page 376)**

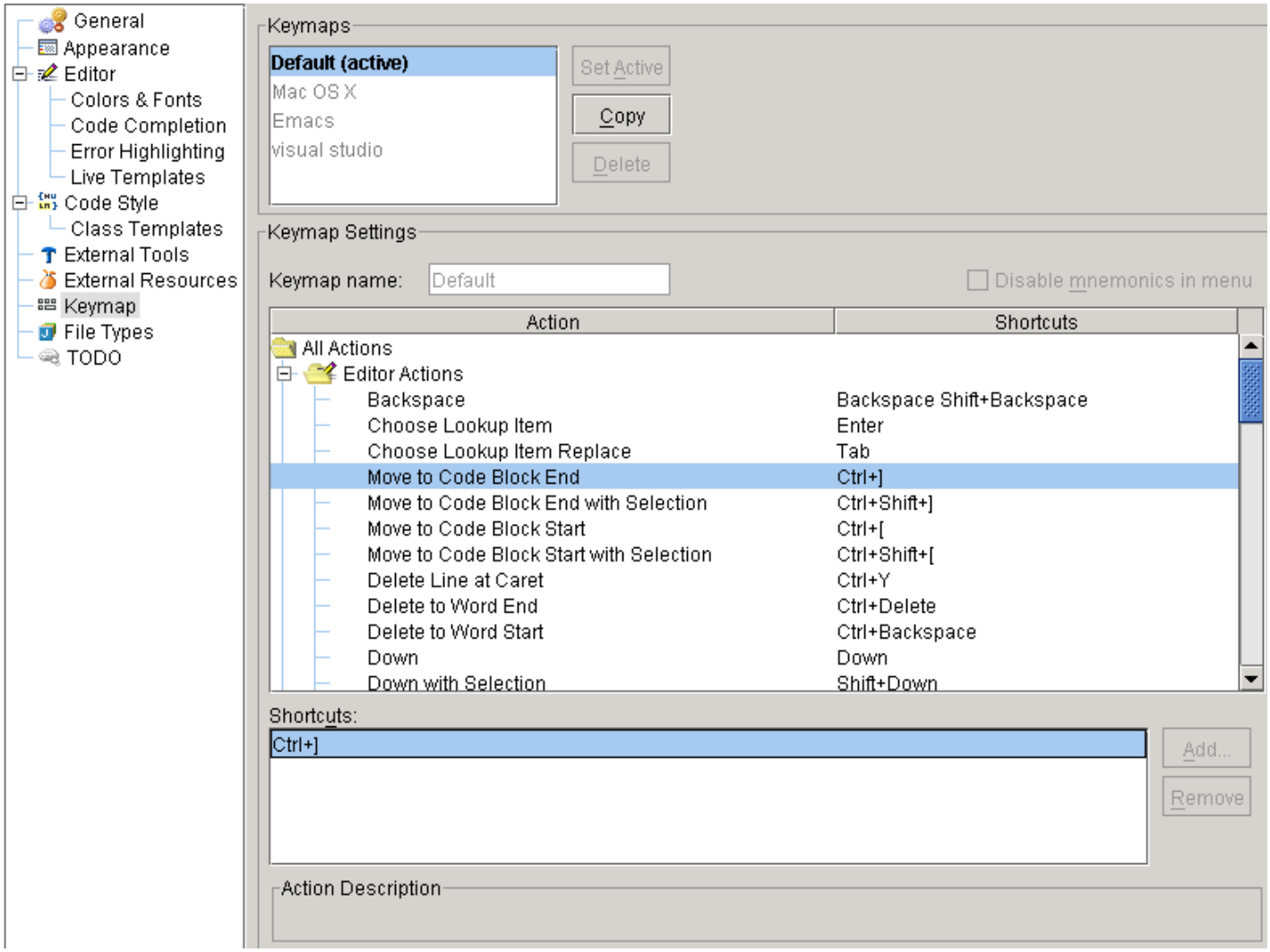


Figure 24.1. IDEA Options / Keymaps (425)

27.1. Select Active

24.1. Select a Keymap.
24.2. Click **Set Active**.

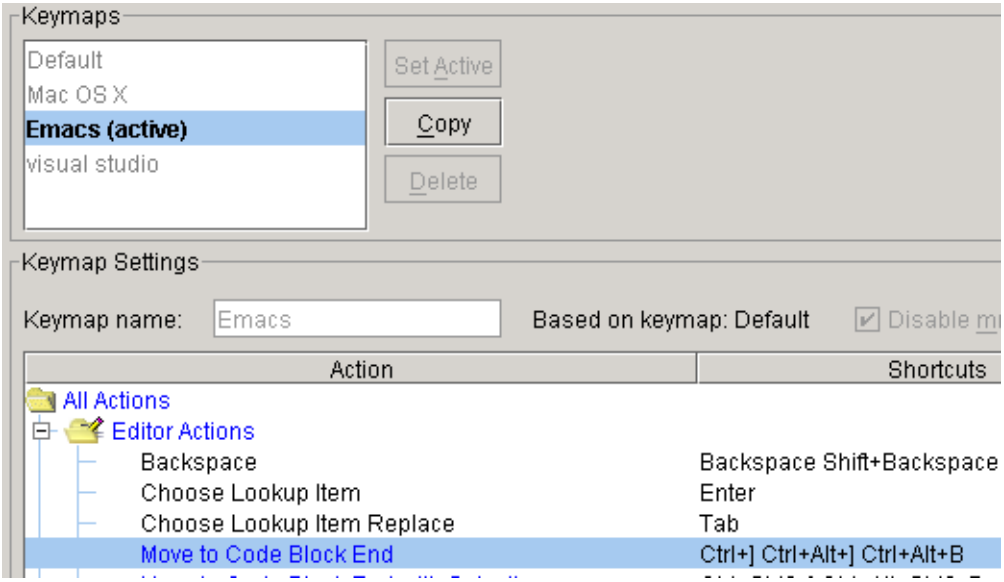


Figure 24.2. Set active keymap (424)

Note: Be sure to reset the default keymap as the active.

27.2. Create (copy and modify)

You can use your own custom keymap by

- copy an existing keymap
- modify the copy
- set the copy as the active keymap

24.3. Select the **Default** keymap.
24.4. Click **Copy**. The question “Make the new keymap active?” appears.
24.5. Click **Yes**.
24.6. Change the “Keymap name” to **MyKeymap**.
24.7. Select **All actions / Editor actions / Move to Code Block End**.
24.8. In “Shortcuts”: Select **Ctrl+]**.
24.9. Click **Add**. The dialog “Enter shortcut” appears.
24.10. Press simultaneously **Ctrl** and \. The key combination appears in the dialog.

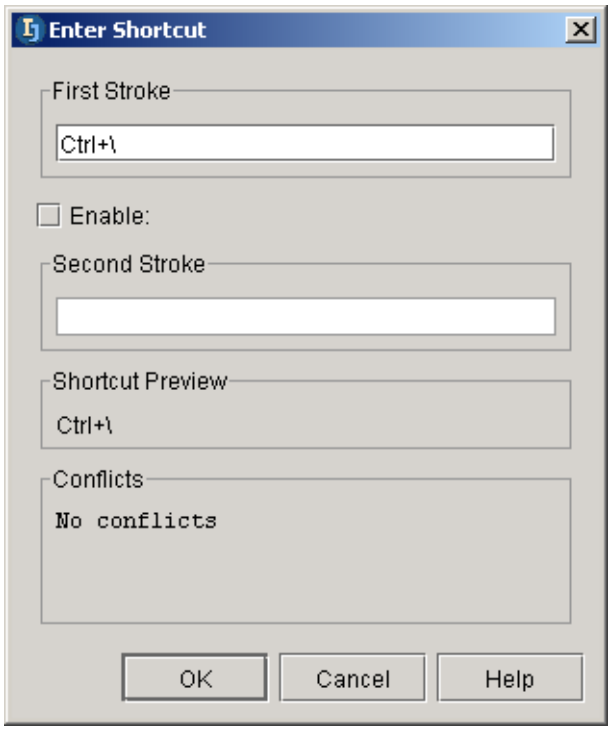


Figure 24.3. New keystroke (423)

24.11. Click **OK**. The keystroke appears in the list.

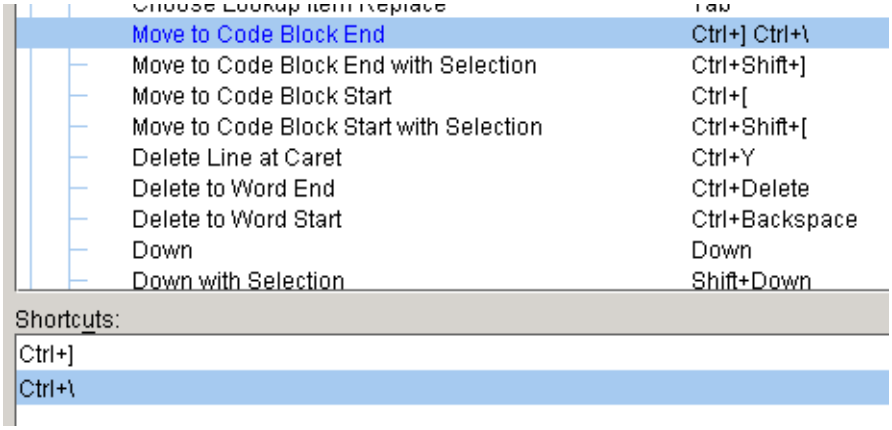


Figure 24.4. New keystroke in the list (422)

28. Glossary XXX

As a table

Term1PPP	Definition of term 1. Multiple paragraphs and pics ok.
Term2PPP	Definition of term 1. Multiple paragraphs and pics ok.

As text (in alphabetical order)

Term1. Definition of term 1.
Multiple paragraphs and pics ok.

Term2. Definition of term 1.
Multiple paragraphs and pics ok.

List of figures

Index

20021024TTT index entries added thruout doc (for release version chapters)
(the following number is the last page marker.... required by Framemaker).
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Symbols

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