Eclipse Basics
(with Eclipse Juno for Java)

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Software Development Methods 2015/9/23

Eclipse

- http://www.eclipse.org
- Integrated development environment (IDE)
- Extensible with plugins

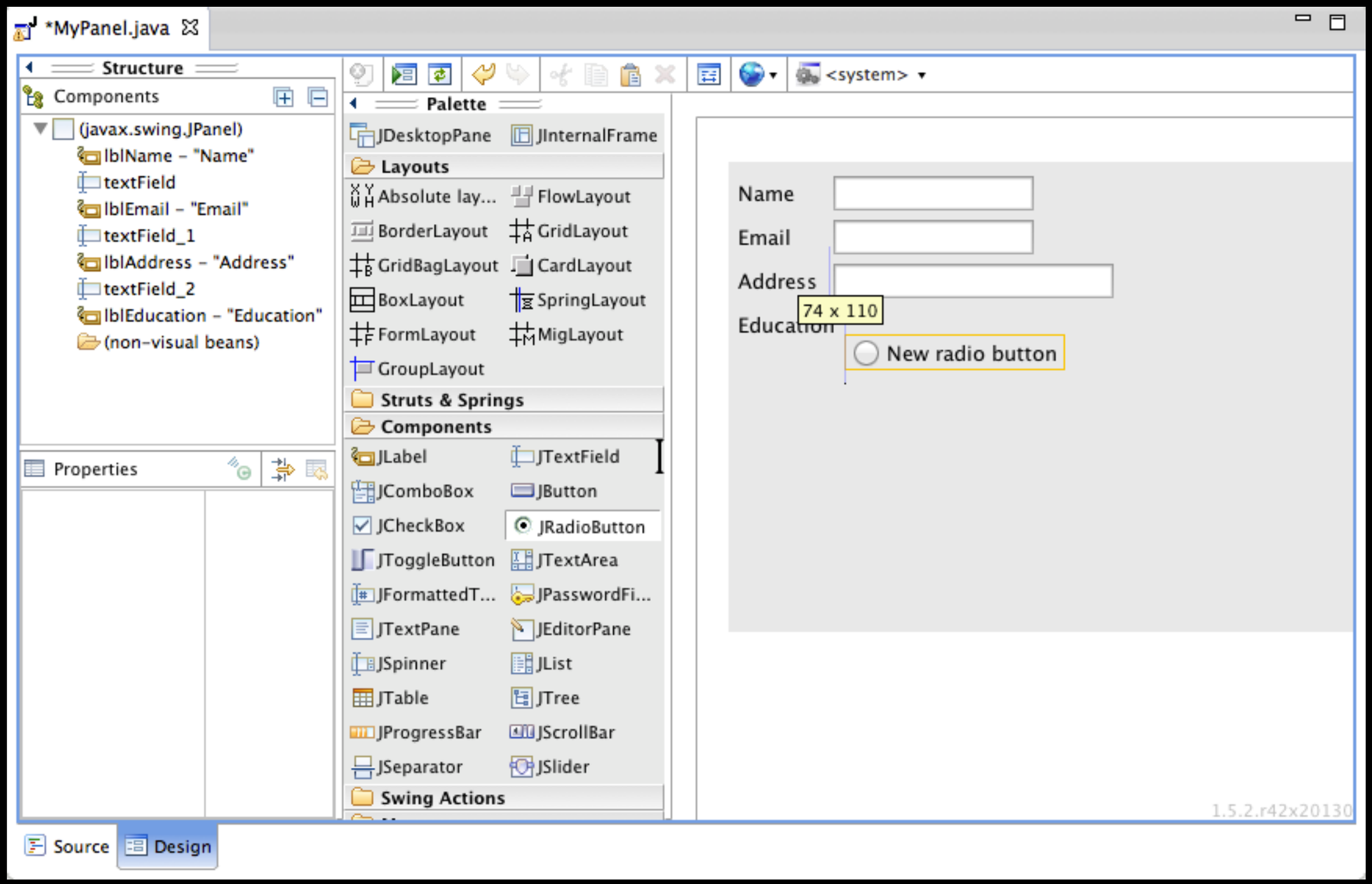
Without IDE

obj.???

obj.func(???)

```
add(comp1, BorderLayout.NORTH);
add(comp2, BorderLayout.CENTER);
cs.weightx = 1;
comp2.add(comp3, cs);
cs.weightx = 2;
comp2.add(comp4, cs);
```

With IDE

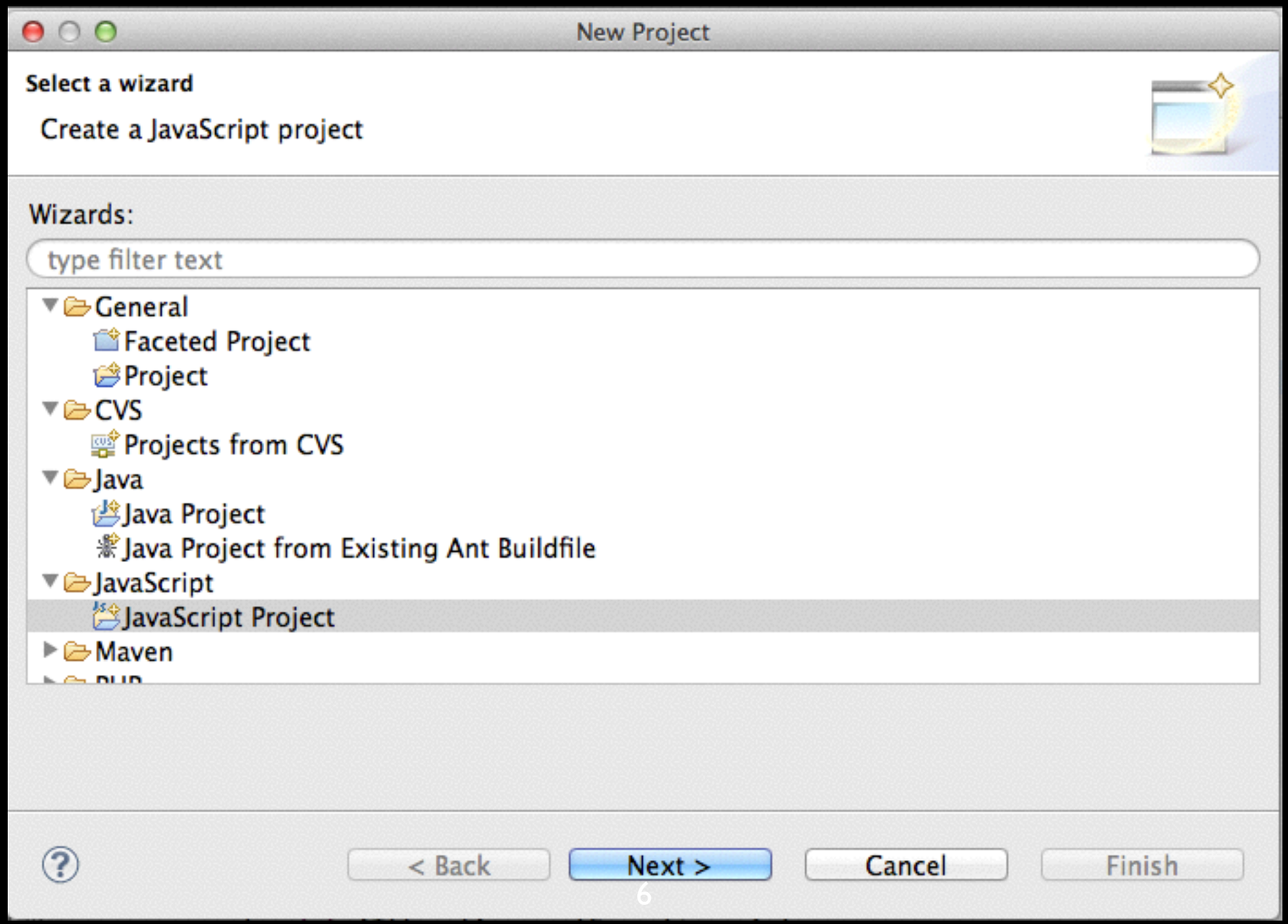

*MyPanel.java
Structure
Components
(javax.swing.JPanel)
lblName - "Name"
textField
lblEmail - "Email"
textField_1
lblAddress - "Address"
textField_2
lblEducation - "Education"
(non-visual beans)
Properties
Palette
JDesktopPane
JInternalFrame
Layouts
Absolute lay...
FlowLayout
BorderLayout
GridLayout
GridBagLayout
CardLayout
BoxLayout
SpringLayout
FormLayout
MigLayout
GroupLayout
Struts & Springs
Components
JLabel
JTextField
JComboBox
JButton
JCheckBox
JRadioButton
JToggleButton
JTextArea
JFormattedT...
JPasswordFi...
JTextPane
JEditorPane
JSpinner
JList
JTable
JTree
JProgressBar
JScrollBar
JSeparator
JSlider
Swing Actions
<system>
Name
Email
Address
74 x 110
Education
New radio button
1.5.2.r42x20130
Source
Design

Workspace

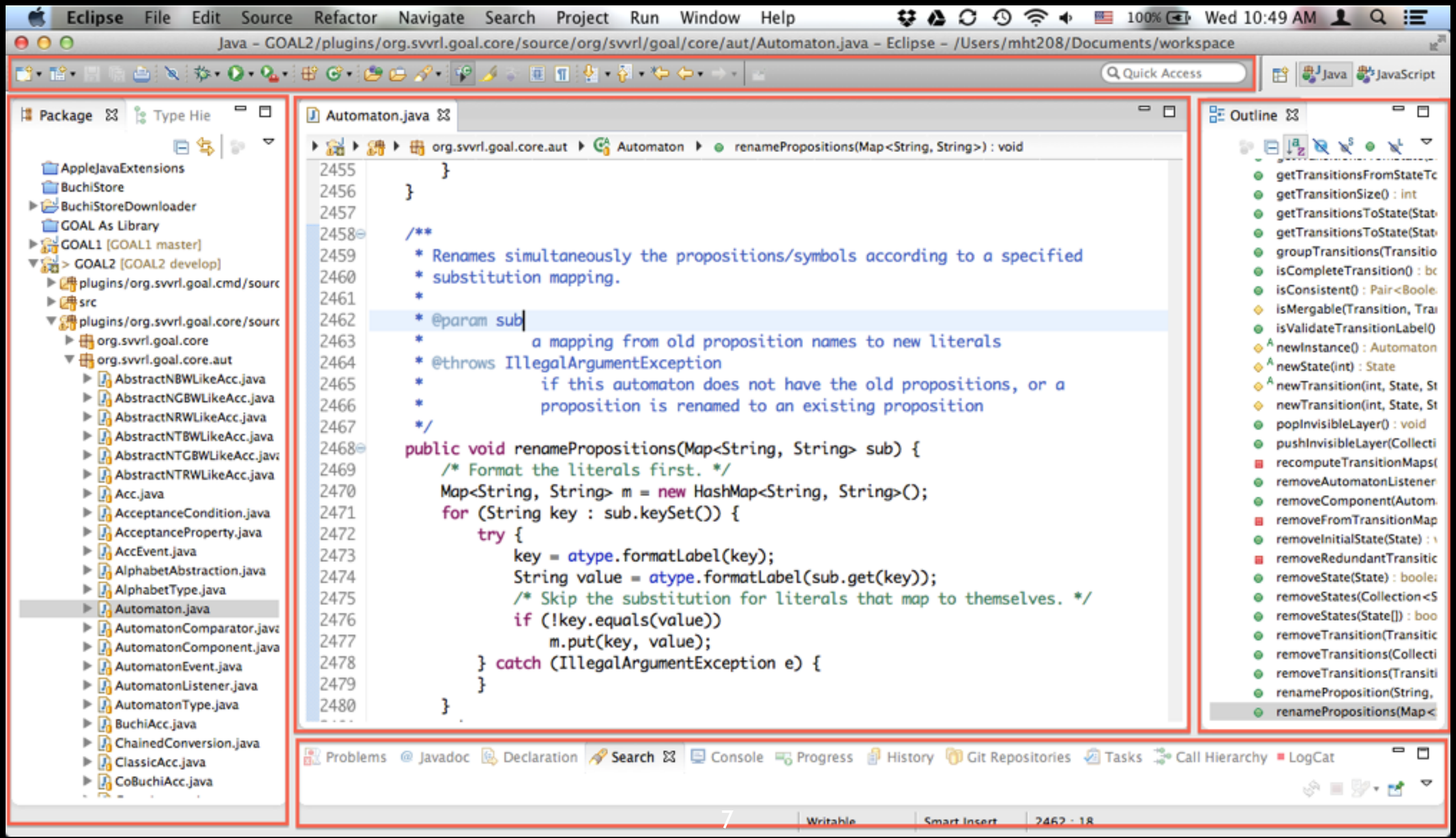
- Where your projects are stored
- Multiple workspaces are allowed

Create New Project

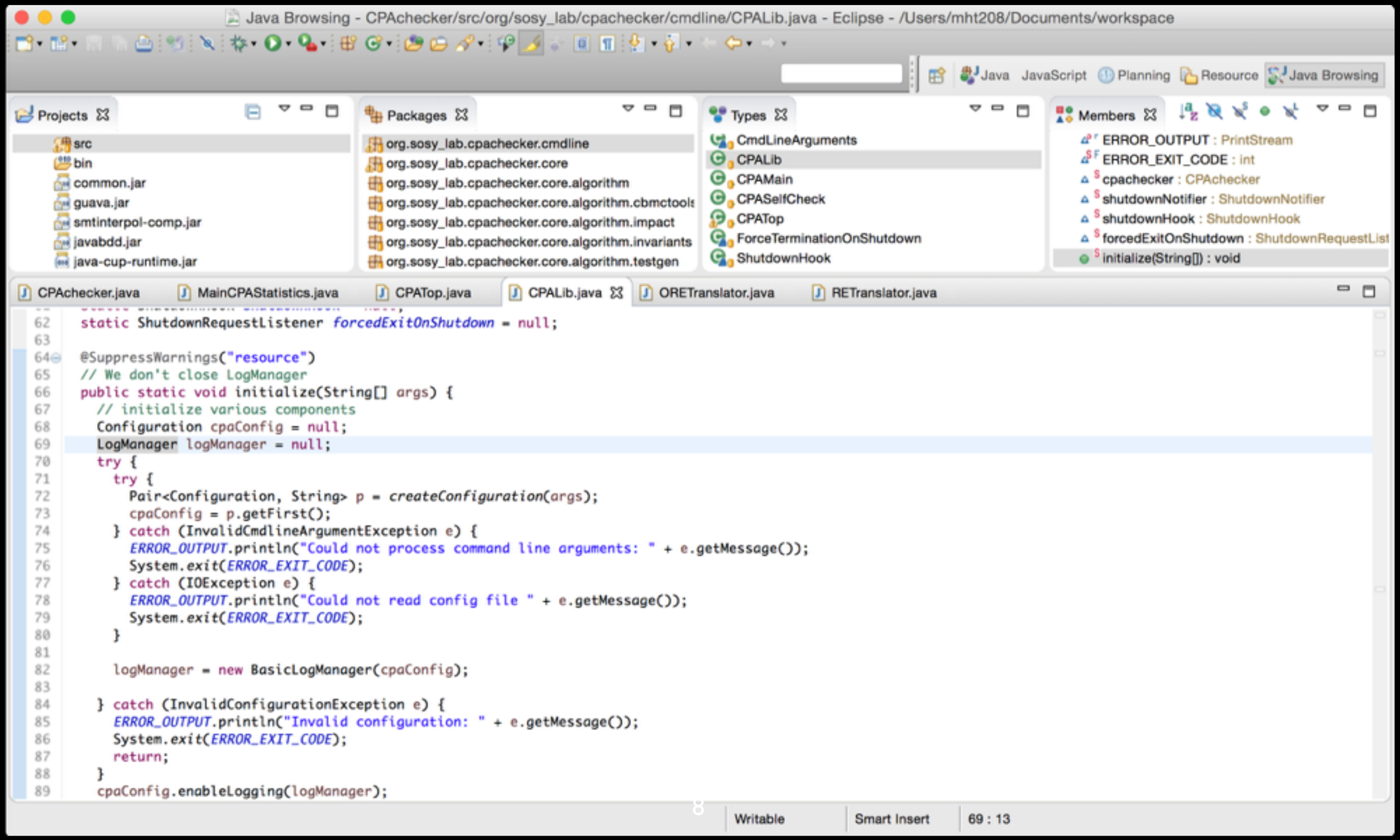
File / New / Project...



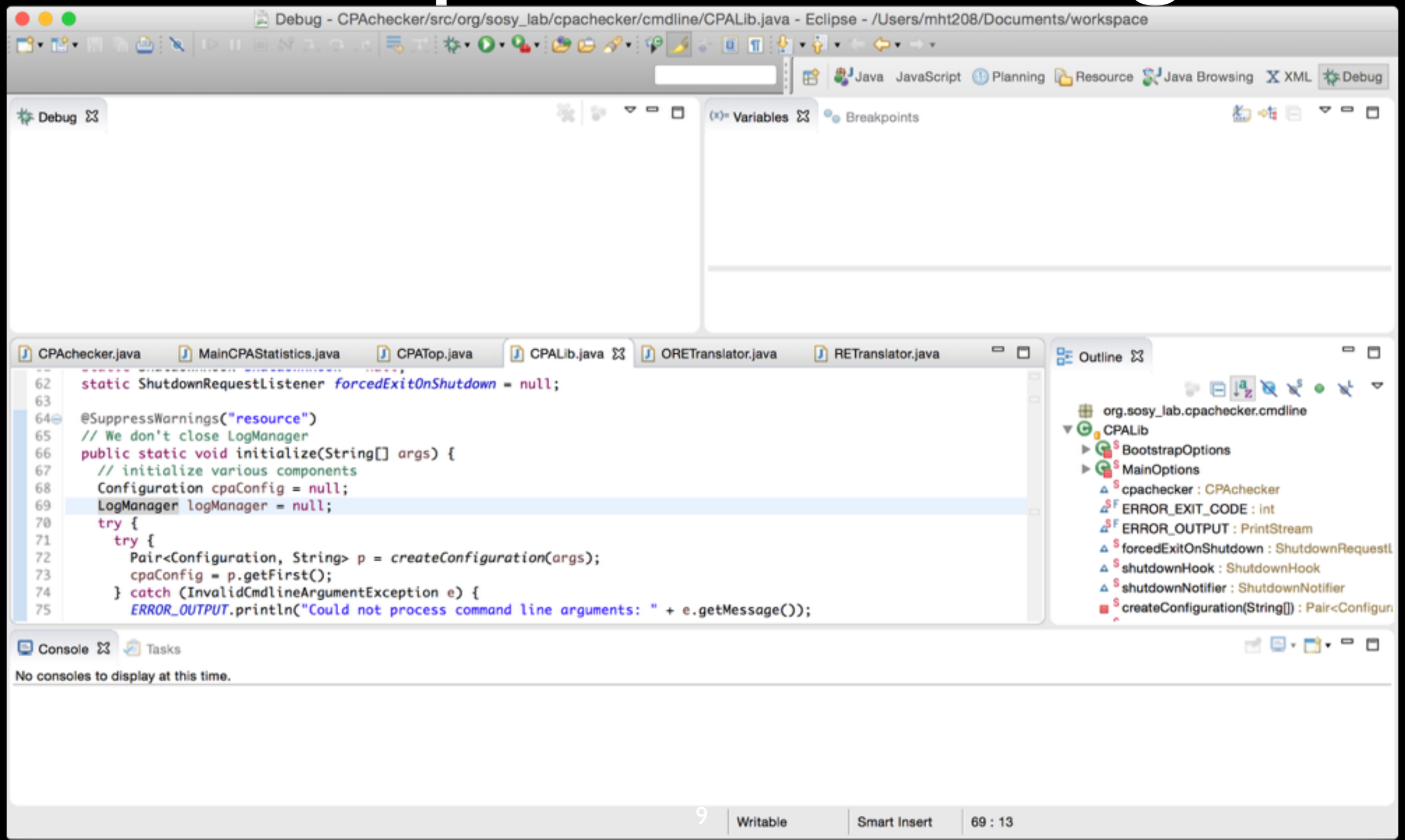
Perspective - Java



Perspective - Browsing

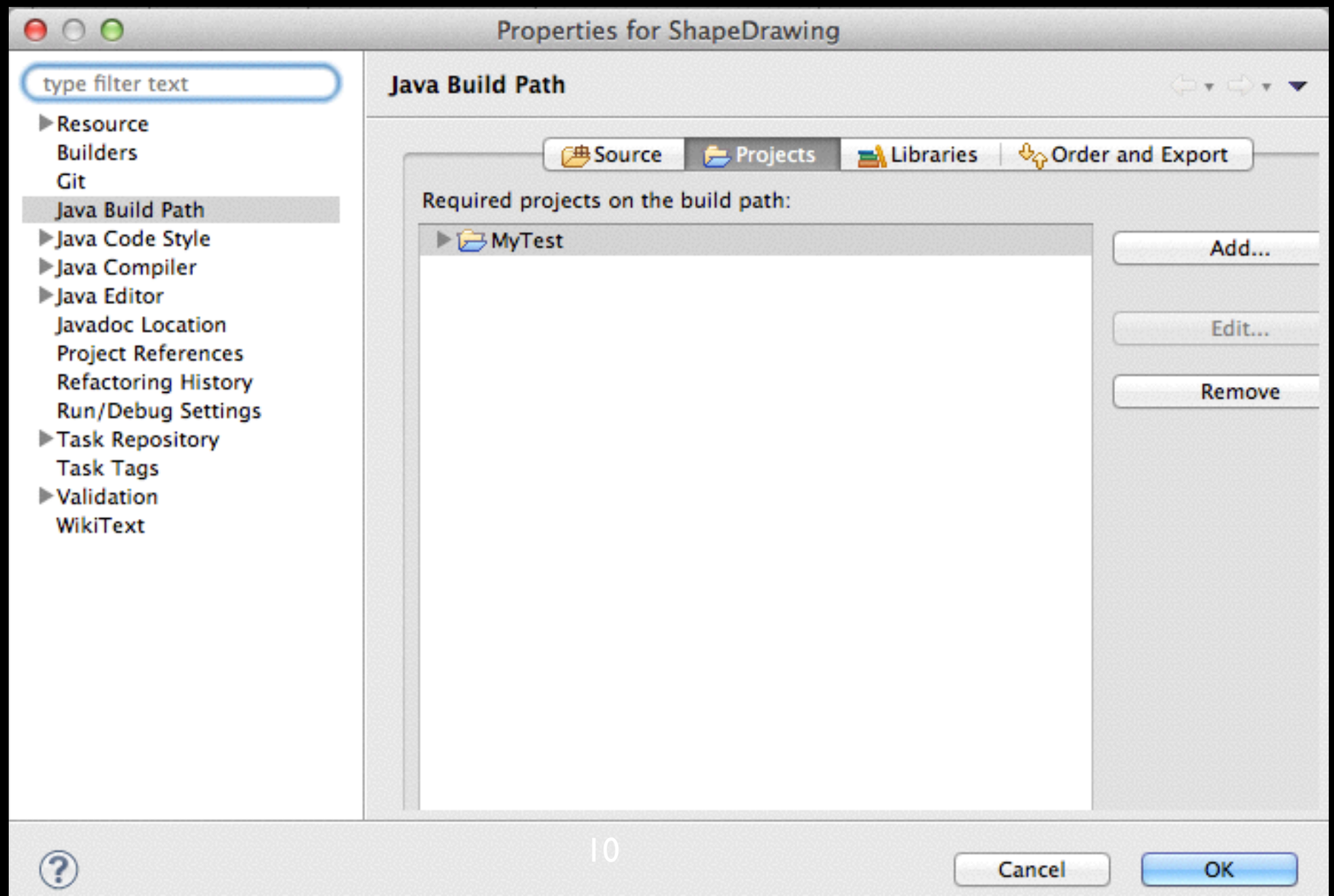


Perspective - Debug



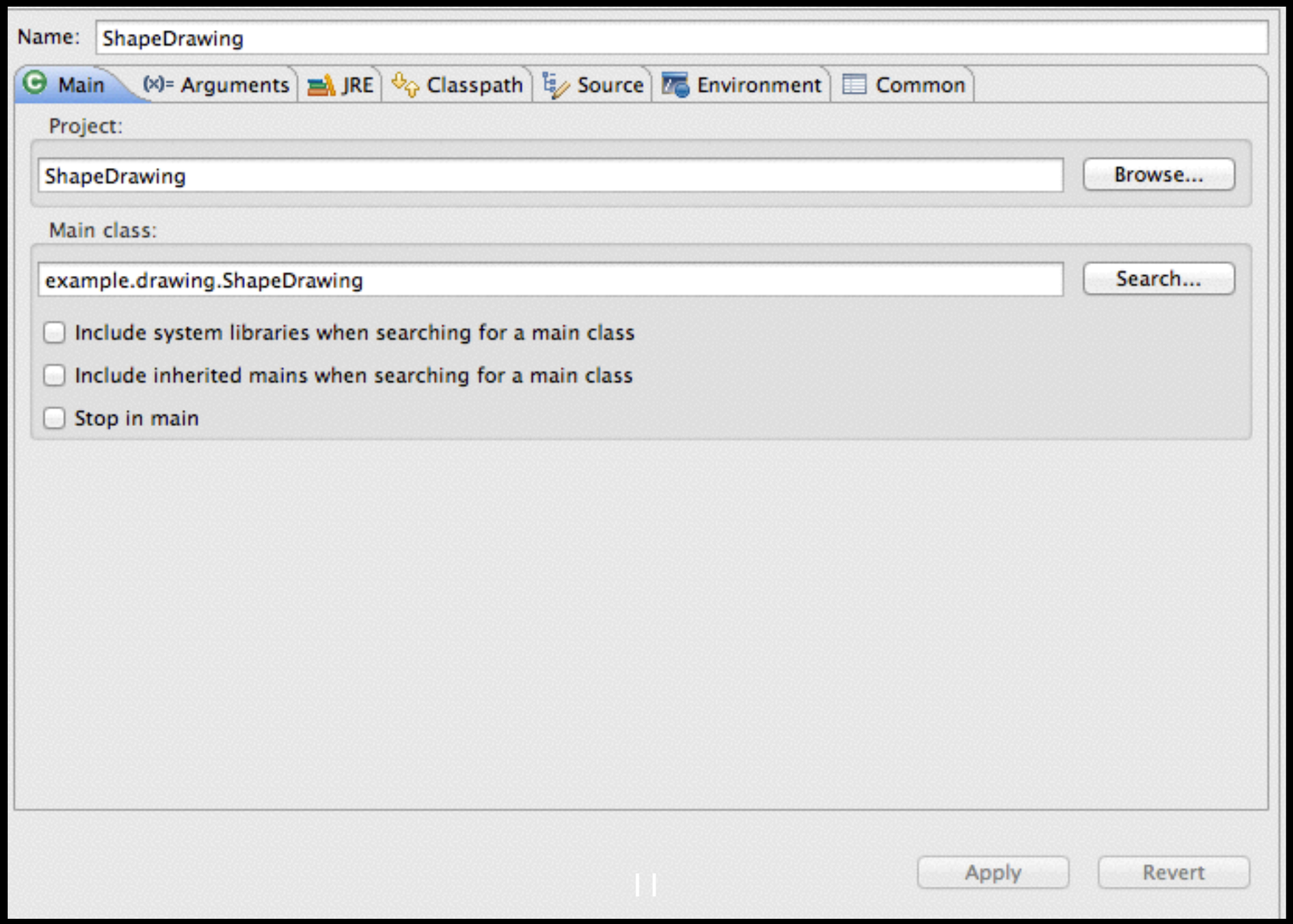
Project Reference

Project popup menu / Properties / Java Build Path / Projects / Add…



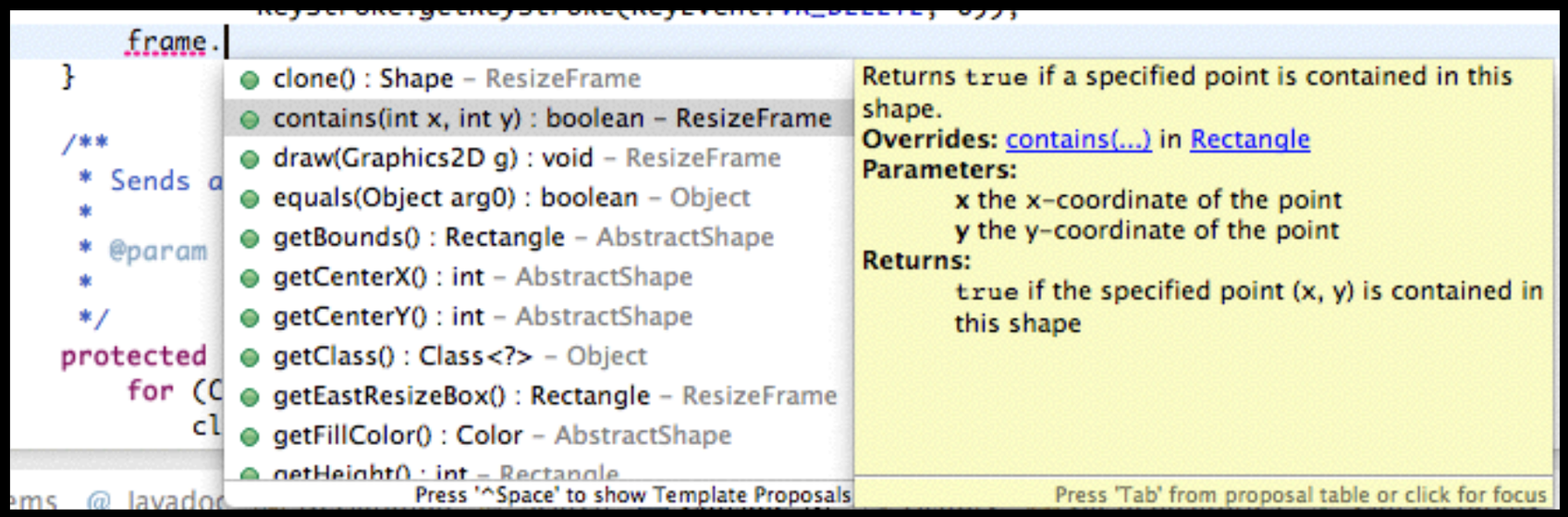
Run Your Application

Run / Run Configurations…



Java Doc

⌥⌘J Alt-Shift-J




```
/**
 * Returns {@code true} if a specified point is contained in this shape.
 *
 * @param x
 *            the x-coordinate of the point
 * @param y
 *            the y-coordinate of the point
 * @return {@code true} if the specified point (x, y) is contained in this
 *         shape
 */
public boolean contains(int x, int y);
```

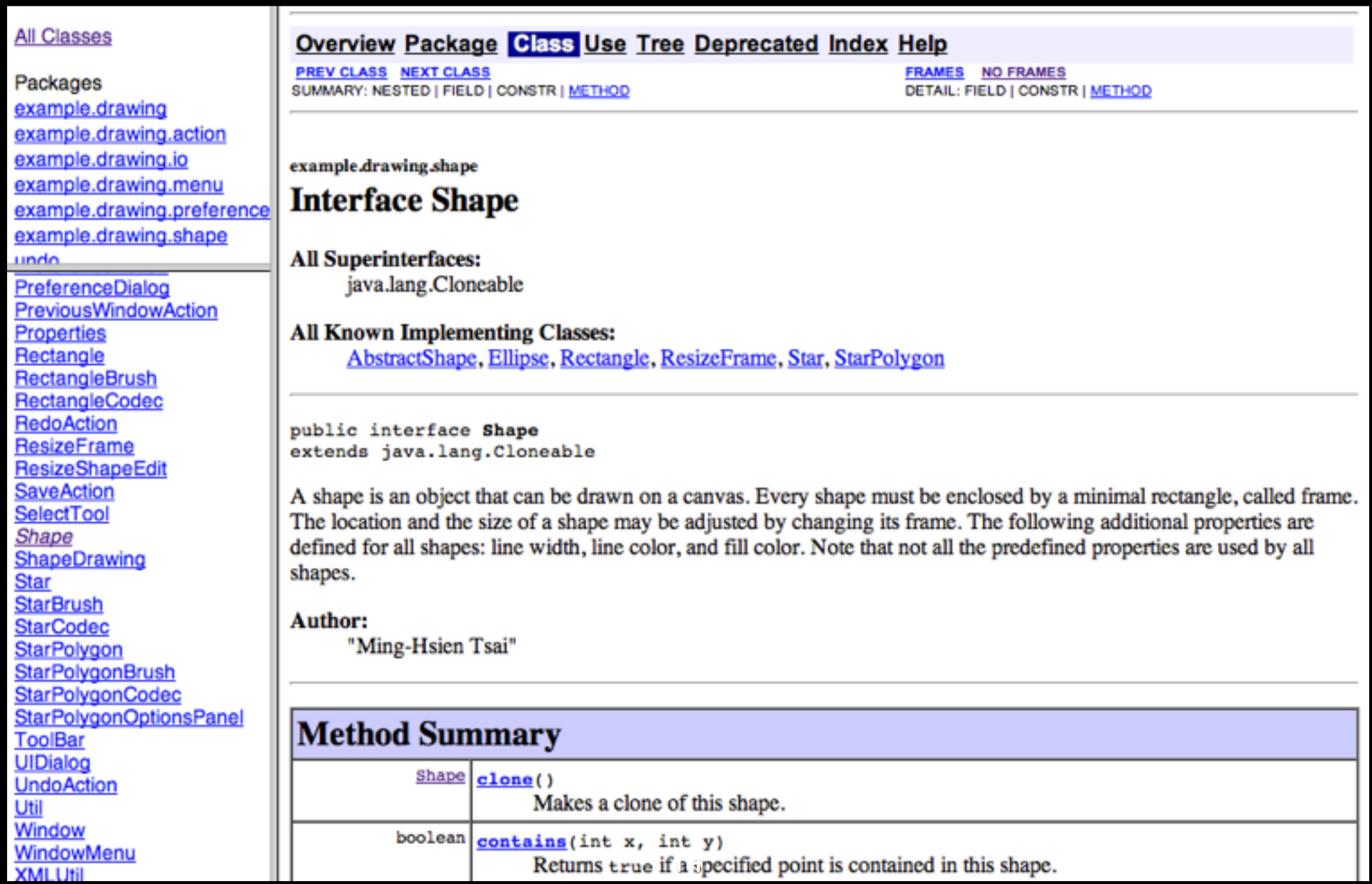
Java Doc - Tags

```
@author <NAME>
@version <VERSION>
@param <VARIABLE> <DESCRIPTION>
@return <DESCRIPTION>
@deprecated <DESCRIPTION>
@since <VERSION>
@throws <EXCEPTION> <DESCRIPTION>
@exception <EXCEPTION> <DESCRIPTION>
@see <CLASSPATH>
…
```

http://www.oracle.com/technetwork/java/javase/documentation/index-137868.html

Java Doc - Export

File / Export / Java / Javadoc



Other Documentation Generators

- Oxygen
  - C, Objective-C, C#, PHP, Java, Python, IDL (Corba, Microsoft, and UNO/OpenOffice flavors), Fortran, VHDL, Tcl
- Sphinx
  - Python, C/C++
- ScalaDoc
- ocamldoc

More generators can be found in https://en.wikipedia.org/wiki/Comparison_of_documentation_generators

Code Generation

Getters/Setters:

Source / Generate Getters and Setters…

Override/Implement:

Source / Overwrite/Implement Methods…

…

Navigation

Navigate / Open Declaration

F3

Navigate / Open Type Hierarchy

F4

Navigate / Open Call Hierarchy

^⌥H **Ctrl-Alt-H**

Search

Search / References / Workspace

⇧⌘G **Ctrl-Shift-G**

Source

Source / Format

⇧⌘F **Ctrl-Shift-F**

Source / Organize Imports

⇧⌥O **Ctrl-Shift-O**

Source / Toggle Comment

⌘/ **Ctrl-/**

Refactor

Refactor / Rename…

⌥⌘R **Alt-Shift-R**

Refactor / Move…

⌥⌘V **Alt-Shift-V**

Source / Toggle Comment

⌘/ **Ctrl-/**

Others

Quick Fix:

⌘1 **Ctrl-1**

Shortcuts reference:

⇧⌘L **Shift-Ctrl-L**

Build Tools

- GNU Make
- Apache Ant with Ivy
- Apache Maven
- Gradle

Other Languages

- Eclipse CDT for C/C++
  - http://www.eclipse.org/cdt/
- Eclispe PDT for PHP
  - http://projects.eclipse.org/projects/tools.pdt
- Eclipse JSDT for Javascript
  - http://www.eclipse.org/webtools/jsdt/
- PyDev for Python
  - http://marketplace.eclipse.org/content/pydev-python-ide-eclipse/metrics#.UkJQuxY5SfQ
- Scala IDE for Scala
  - http://scala-ide.org

Other Features

(may need third-party plugins)

- Debugging
- UML diagrams and code generation
  - UML Designer, UML to Java code generator
- Task management
  - Mylyn
- Issue tracking
  - Bugzilla, JIRA, Redmine, …

Other Features

(may need third-party plugins)

- Continuous integration
  - Eclipse Hudson
- Program verification
  - Java PathFinder, Leon, EpiSpin