

## Java with Eclipse: Setup & Getting Started

Originals of Slides and Source Code for Examples: http://courses.coreservlets.com/Course-Materials/java.html



### **Topics in This Section**

- Installing Java
- Installing and configuring Eclipse
- Importing sample projects
- Executing simple desktop programs
- Executing applets



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## **Installing Java**

### **Java Versions**

#### Java SE (Standard Edition)

- "Core" Java
  - · Java version used in this class
- Latest version is Java 7; Java 6 or 7 should be used for almost all new projects
- Naming conventions are confusing
  - Java 7 == Java 1.7 == JDK 1.7
  - Java 6 == Java 1.6 == JDK 1.6
  - Java 5 == Java 1.5 == JDK 1.5
  - Java 2, version 1.4 = Java 1.4 == JDK 1.4

#### Java EE (Enterprise Edition)

- Same core language, but adds in many libraries for Web apps and other enterprise tasks
  - Many real-life deployments start with Java SE and then get server that is bundled with Java EE libraries

### Which Java SE Version Should You Use?

### Server-Side Applications

- Use the latest Java version that your app server supports
  - JDK 1.4 1.7, depending how old your server is
- If you can choose, use JDK 1.7 (but 1.6 still popular)

#### Desktop Applications

- For best power and speed, use Java 7 (aka 1.7)
  - If you install, use JDK 1.7
- Use older only if project is old (but consider upgrading)

### Applets

- Separate Java Plug-In is required in all recent browsers
  - For intranet apps, use Java 7
  - On internet, most Java applet sites (e.g., *Yahoo! Games*) use JDK 1.4 or 1.6, but *all* require end-user installation





## Installing Eclipse

### **Installing Eclipse**

#### Overview

 Eclipse is a free open source IDE for Java. Also supports HTML, CSS, JavaScript, C++, PHP, Python, etc.

- http://eclipse.org/downloads/
- Choose "Eclipse IDE <u>for Java EE</u> Developers"
  - Latest version as of 1/2012 is Eclipse 3.7 (Indigo) . 3.7 required to use Java 7.
- Features
  - Checks your syntax as you type
  - Automatically compiles every time you save file
  - Many tools: refactoring, debugging, server integration, templates for common tasks, etc.
    - Low learning curve: beginners can use Eclipse without knowing these tools



• + Search

p2

plugins

epl-v10.html

eclipsepro

notice.htm

### **Running Eclipse**

- Unzip the downloaded file
  - Call the folder you unzip into "installDir"
- Double click eclipse.exe
  - From installDir/bin
- Click on "Workbench" icon
  - Next time you bring up Eclipse, it will

come up in workbench automatically

#### Shortcut

- Many developers put Eclipse link on their desktop

configura

<

artifacts.xml

 R-click eclipse.exe, Copy, then go to desktop, R-click, and Paste Shortcut (not just Paste!)

· ]} ► Computer ► OS (C:) ► eclipse ►

Date modified

dropins

Туре

features









## **Building Java Manually**

Customized Java EE Training: http://courses.coreservlets.com/

Java, JSF 2, PrimeFaces, Servlets, JSP, Ajax, jQuery, Spring, Hibernate, RESTful Web Services, Hadoop, Android. Developed and taught by well-known author and developer. At public venues or onsite at *your* location.





## Simple Examples

### **Installing Sample Projects**

#### Code from all tutorials is available online

- http://courses.coreservlets.com/
  - Click on Java 6 tutorial on top left of page

#### Import project into Eclipse

- Click on appropriate tutorial section
- Download ZIP file
  - The one for this section is called "intro"
- Start Eclipse and go to Workbench
- File → Import → General → Existing Projects into Workspace → Select archive file (not "Select root directory").
  - Then browse to ZIP file you downloaded, OK, Finish

#### **Basic Hello World Application** File HelloWorld.java: public class HelloWorld { public static void main(String[] args) { System.out.println("Hello, world."); } a 📂 intro 🖶 (default package) HelloWorld.java } HelloWWW.java ShowArgs.java ShowArgs2.java JRE System Library [jdk1.6.0\_15] Notes HelloWWW.html - "Application" is lingo for a stand-alone Java program - An application is a Java class that contains "main" Most Java classes do not contain "main", but only those that do can be *directly* executed



### **Basic Hello WWW Applet**

### File HelloWWW.java:

```
import java.applet.Applet;
import java.awt.*;
public class HelloWWW extends Applet {
   public void init() {
     setBackground(Color.BLACK);
     setForeground(Color.WHITE);
     setFort(new Font("SansSerif", Font.BOLD, 30));
   }
   public void paint(Graphics g) {
     g.drawString("Hello, World Wide Web.", 5, 35);
   }
```

### Basic Hello WWW Applet (Continued)

### • File HelloWWW.html:

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN"> <HTML> <HEAD> <TITLE>HelloWWW: Simple Applet Test.</TITLE> </HEAD> <BODY>

<h1>HelloWWW: Simple Applet Test.</h1>

<APPLET CODE="HelloWWW.class" WIDTH=400 HEIGHT=40>
 <B>Error! You must use a Java enabled browser.</B>
</APPLET>

</body> </html>





## Wrap-Up

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### **A Few Eclipse Tricks**

•	Making a new project
	- File $\rightarrow$ New $\rightarrow$ Project $\rightarrow$ Java $\rightarrow$ Java Project
	Choose Source/Classes in Same Folder
•	Making a new class
	- R-click project, New $\rightarrow$ Class
•	Autocompletion
	<ul> <li>Type part of a class or method name, Control-Space</li> </ul>
•	Inserting main method
	– Type the word "main", then Control-Space
•	Inserting System.out.println
	<ul> <li>Type the word "sysout", then Control-Space</li> </ul>
•	Renaming a variable or method
	- Select method or variable, R-click, Refactor $\rightarrow$ Rename
	<ul> <li>Will also change all places that refer to it</li> </ul>

### Summary

Downloading Java

 http://www.oracle.com/technetwork/java/javase/downloads/

 Bookmarking the Java API

 http://docs.oracle.com/javase/7/docs/api/

 Downloading Eclipse

 http://eclipse.org/downloads/

### Downloading sample projects

- http://courses.coreservlets.com/
  - Click on Java 6 & 7 Programming tutorial on top left
- Import with File  $\rightarrow$  Import  $\rightarrow$  Existing Projects ...

#### Executing a class that has "main"

- R-click in code, Run As  $\rightarrow$  Java Application



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# **Questions?**

JSF 2, PrimeFaces, Java 7, Ajax, jQuery, Hadoop, RESTful Web Services, Android, Spring, Hibernate, Servlets, JSP, GWT, and other Java EE training.