Java Environment

CSCI 201
Principles of Software Development

Jeffrey Miller, Ph.D.
jeffrey.miller@usc.edu
Outline

• Java Environment
• Eclipse Tutorial
History of Java

- Java was created by Sun Microsystems
  - First version 1.0 was released in 1996
- Sun Microsystems was bought by Oracle in 2010
- Java has gone through numerous major and minor releases
  - Current major version is Java 8, released in 2013 with few updates since
- Java is open source
- http://java.sun.com
Compiling

- Java has a motto of “write once, run anywhere”
  - When code is compiled, it produces byte code instead of a binary executable
  - The Java Virtual Machine (JVM) is compiled for a specific operating system, then allowing for the byte code to run on any operating system (for which there is a JVM)
  - Since the JVM is written in a native language, there may be subtle, or not-so-subtle, differences when run on different JVMs
- Java may run slightly slower than compiled native languages
Command Line

- You can write with any text editor you want and compile it from a command line that has the Java Development Kit (JDK) installed.
There are many Integrated Development Environments to use

- Eclipse
- NetBeans
- IntelliJ
- Visual J++
- Others?
Outline

• Java Environment
• Eclipse Tutorial
Downloading Eclipse

- Go to http://www.eclipse.org
Downloading Eclipse

- Click Downloads
Downloading Eclipse

- Select your OS (if not already selected) then click the version for the Eclipse IDE for Java Developers
Downloading Eclipse

- Click the green arrow next to the selected mirror
Downloading Eclipse

- Save the zip file
Downloading Eclipse

- Open the zip file and drag the “eclipse” directory to your Desktop (or another directory of your choosing)
Running Eclipse

- After the zip file finishes extracting, open the “eclipse” directory and run the eclipse executable.
Running Eclipse

- Select a workspace directory
  - The workspace directory will be the one that contains all of your projects, code, and compiled files
Creating a Project

- Go to File->New->Java Project
Create a Project

- Type a name for the Project and click Finish
  - This has nothing to do with the code, but it should be descriptive enough for you to know what code is in the project.
Create a Class

- Expand the Project by clicking the arrow next to the name of the project you just created
Create a Class

- Right-click on “src” and go to New->Class
Create a Class

- Type a name for the class and uncheck all other boxes (unless you want Eclipse to generate code for you), then click Finish.
Write Some Code

- You should now have a nearly-blank file and can begin writing code
Write Some Code

- Type the following code into the HelloCSCI201.java file:

```java
public class HelloCSCI201 {
    public static void main(String [] args) {
        System.out.println("Hello CSCI 201");
    }
}
```
Running the Code

- Click the green play button at the top to run your code
  - If your code doesn’t compile, you will have error messages at the bottom of the screen
  - If your code compiles, your output will be at the bottom of the screen