CSC 3020 – Java Programming
Using Eclipse

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Installing Eclipse

1) Navigate to page eclipse.org/downloads and select version of **Eclipse IDE for Java Developers** that is applicable to your operating system.
2) Download the zip file and extract it to a folder.
3) Navigate to the Eclipse folder and create a desktop shortcut to file **eclipse.exe**.

Uninstalling Eclipse

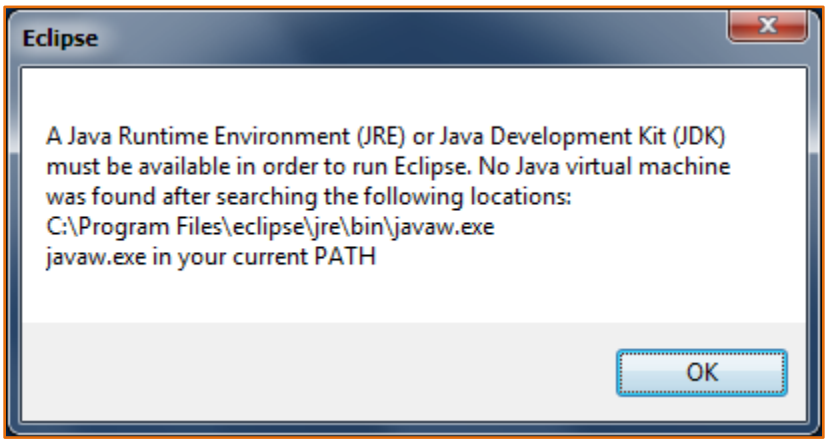
Navigate to folder **…\eclipse\java-<version>** and delete folder **java-<version>**.

Running Eclipse

When file **eclipse.exe** is run, answer "Yes" to User Account Control question "Do you want to allow the following program to make changes to this computer?"

Installing Java Runtime Environment (JRE)

● If the JRE is not installed on the computer, the following message appears after starting Eclipse:



1) Navigate to page www.oracle.com/technetwork/java/javase/downloads.

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2) Download and run the installation file for the Java Platform (JDK). The JDK includes tools for developing and testing Java programs and the JRE. Accept the defaults to complete the installation.

Checking Java Runtime Environment (JRE) version
1) Click Windows Start / Control Panel.
2) From the Control Panel, click Programs.
3) From the Control Panel, click Java.
4) From the Java Control Panel, click About.

Getting Eclipse help
- To access Eclipse help, click **Help / Help Contents**
- An Eclipse tutorial is available at http://www.vogella.com/tutorials/Eclipse/article.html.

Eclipse hierarchy
Workspace: consists of zero or more projects
    ↳ Project: represents one application
        ↳ Folders, libraries, and files

Defining a workspace
When you start Eclipse for the first time, you will be prompted for a default folder to store your Eclipse projects.
1) From the Workspace Launcher dialog, click **Browse …**
2) From the Select Workspace Directory dialog, navigate to a folder and/or create a folder, and click **OK**.
3) From the Workspace Launcher dialog, optionally click **Use this as the default …**, and click **OK**.

JRE System Library
- The JRE System Library is a set of JAR files located at:
  C:\Program Files\Java\jdkNNN\jre\lib\
- When a project is created in Eclipse, the JRE System Library is automatically included.
- On a Windows computer, environment variable Path must include folder:
  C:\Program Files\Java\jdkNNN\bin\

Typical steps for starting to write an application
1) Create an Eclipse project with a name like **App1**.

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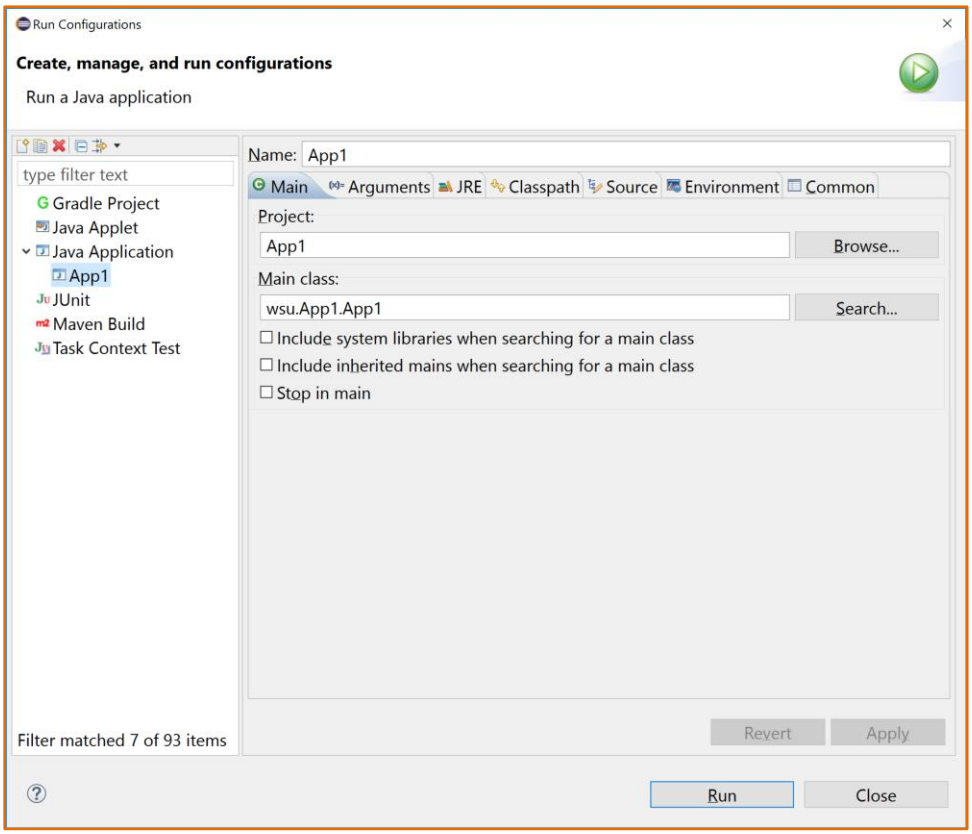
2) Create a package with a name like **wsu.App1**.
3) Create a class with a name like **App1**.
4) Copy-and-paste the Java template main or other code to the class.
5) If necessary, correct the package and class name errors.
6) If necessary, correct the project and Main class in the run configuration:



Creating an Eclipse project

1) From the Eclipse main screen, select **File / New / Java Project**.
2) From the New Java Project screen, enter a project name, and click **Finish**.

Creating a package

1) From the Eclipse main screen, right-click folder **src** and select **New / Package**.
2) From the New Java Package screen, enter a package name in the form wsu.<application-name>, and click **Finish**.

Creating a class

1) From the Eclipse main screen, right-click a package, and select **New / Class**.
2) From the New Java Class screen, enter a class name, and click **Finish**.

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Creating a class containing the main method
1) From the Eclipse main screen, right-click a package, and select **New / Class**.
2) From the New Java Class screen, enter a class name, check method stub **public static void main(…)**, and click **Finish**.

Passing arguments into an application
1) From the Eclipse main screen, select **Run / Run Configurations …**
2) From the Run Configurations screen, select the application, and tab Arguments.
3) From the Run Configurations screen, enter program arguments (one per line), and click **Run** or **Close**.

Changing the code font
1) From the Eclipse main screen, select **Window / Preferences**.
2) From the left half of the Preferences screen, select **General / Appearance / Colors and Fonts**.
3) From the right half of the Preferences screen, select **Java / Java Editor Text Font**, and click **Edit Default …**
4) From the Font screen, select font properties, and click **OK**.
5) From the Preferences screen, click **OK**.

Showing line numbers
1) From the Eclipse main screen, select **Window / Preferences**.
2) From the left half of the Preferences screen, select **General / Editors / Text Editors**.
3) From the right half of the Preferences screen, select **Show line numbers**.

Adding Undo and Redo buttons to the toolbar
1) Download file **undoredo_1.0.0.jar** from Blackboard to folder **Program Files\eclipse\dropins**.
2) Restart Eclipse.

Console application input cursor behavior
In a console application, Eclipse does not automatically move the input cursor to the end of a prompt. However, once you type the first character of your input, Eclipse moves the cursor to the input area.

Running the application without the debugger
● From the Eclipse main screen, press **CTRL-F11** or click

If the program has not been saved, a prompt will appear to do so.

Running the application with the debugger

● From the Eclipse main screen, press **F11** or click

If the program has not been saved, a prompt will appear to do so.

Setting breakpoints

From the blue margin on the left side of the program editor window on the line to contain the breakpoint, right-click and click **Toggle Breakpoint**.

Stepping over and stepping into while running debugger

● To step over any called method, press **F6**.
● To step into any called method, press **F5**.

Resuming execution after a breakpoint

● To resume execution after a breakpoint, press **F8** or click

Ending the debugger

● To stop the application and end the debugger, press **CTRL-F2** or click

Enabling assertions

1) From the Eclipse main screen, select **Run / Run Configurations …**
2) From the Run Configurations screen, select a Java application, and click tab **Arguments**.
3) From the VM arguments panel of the Arguments tab, enter **-ea**, and click **Close**.

Copying-and-pasting application code to a Word document

1) From the program editor window, press **CTRL-A** and press **CTRL-C**.
2) From within the Word document, press **CTRL-V**.

Printing application code

1) From the program editor window, select **File / Print …**
2) From the Print screen, click **Print**.

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Copying-and-pasting application output to a Word document
1) From the Eclipse main screen, maximize the Console window.
2) From the Console window, press **ALT-PrintScreen**.
3) From within the Word document, press **CTRL-V**.

Accessing one package from another
1) From the Eclipse main screen, right-click the project name and select **Properties …**
2) From the Properties screen, select **Java Build Path**, select tab **Projects** or **Libraries**, and click the appropriate **Add** button.
3) From the applicable selection screen, navigate and select the project or library, and click **OK**.
4) From the Properties screen, click **OK**.

Creating a runnable jar file
1) From the Eclipse main screen, right-click the project name and select **Export …**
2) From the Export screen, select **Java / Runnable JAR file** and click **Next**.
3) From the Runnable JAR File Export screen, select an export destination (folder and file name), and click **Finish**.

Running a runnable jar file
1) Open a command window and navigate to the folder containing the jar file.
2) From the command window prompt, enter command **java -jar <JAR-file-name>.jar**

Installing JFreeChart library
1) Download the JFreeChart library from sourceforge.net/projects/jfreechart/files/.
2) Unzip downloaded file **jfreechart-1.0.nn.zip**.
3) Create or open the Eclipse project that will use the JFreeChart library.
4) From the Eclipse main screen, select **Project / Properties**.
5) From the Properties screen, select **Java Build Path**, tab **Libraries**, and button **Add External JARs …**
6) From the JAR selection screen, navigate to file **jfreechart-1.0.nn.jar** and click **Open**.
7) From the JAR selection screen, navigate to file **jcommon-1.0.nn.jar** and click **Open**.
8) From the Properties screen, click **OK**.

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