Using Eclipse

What is Eclipse?

- The Eclipse Platform is an open source IDE (Integrated Development Environment), created by IBM for developing Java programs.
- Eclipse is now maintained by the Eclipse Foundation, not IBM.
- A free copy can be downloaded at:
 - http://www.eclipse.org/

IDE Workbench

- Eclipse is based on a flexible "WorkBench" concept.
- The workbench is where all the IDE features come together in a common set of icons, menus, and views.



Projects

- A Project enables you to operate in the Eclipse WorkBench
- Before you can create any Java programs, you must first create a Project

Creating Your Project

• First - Select: File>New>Java Project

- (Or Click the Java Project Icon)

Java - Eclipse	New Java Project	
File Edit Source Refactor Navigate Search Project Run Windov	Create a Java Project Enter a project name.	Quick Access R Java
	Project name: Image: Use gefault location Location: C:\Users\Mark\workspace JRE Image: Use an execution engironment JRE: JavaSE-1.7 Image: Use a project specific JRE: jre7 Image: Use default JRE (currently 'jre7') Configure JREs Project layout Use project folder as root for sources and class files Image: Greate separate folders for sources and class files Configure default Working sets Add project to working sets Image: Working sets: Image: Select	An outline is not available.
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Creating Your Project (cont'd)

- Next: Enter PACE as the Project Name
- Select "Use default JRE ..."
- Select "Use project folder as root ..."
- Click Finish

. ₩ @ • 29 - / • •	Create a Java Project Create a Java project in the workspace or in an external location.
	Project name: PACE
	✓ Use <u>d</u> efault location
	Location: C:\Users\Mark\workspace\PACE Browse
	JRE
	◎ Use an execution environment JRE: JavaSE-1.7 👻
	© Use a project specific JRE: jre7 ▼
	Use default JRE (currently 'jre7') <u>Configure JREs</u>
	Project layout Image: Second state of the second state
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Packages

- Packages help you organize your Java source code
- Packages are like folders for your Java code
- Before we can enter our Java code, we have to create a package to hold our code

Create Your Package

• Option 1:

– File > New > Package

- Option 2:
 - Right Click on the PACE
 Project Name
 - Select: New > Package

• Option 3:

Click the Package ICON in the toolbar just below the menubar



Create Your Package (cont'd)

- Enter a package name that represents your program
 - Start with a lowercase
 - No spaces or special symbols
 - If you use multiple words, capitalize each additional word
 - Put Pkg at the end of your package name

Example: helloWorldPkg

• Click Finish when done

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Classes

- Classes are where the work of your program is done
- Typically, you'll have a separate class for each logical component of your program

Example: a **Climate Control** system might have classes for:

- Thermometer
- Thermostat
- Cooling system
- Heating system
- For most of our early programs we will only create one class for the main program
- For our final Spring project, we will create a program with multiple classes

Creating a Class

• Option 1:

- Click on your package name
- Select: File>New> Class
- Option 2:
 - Right Click on your package name
 - Select: New > Class

- Option 3:
 - Click the "New Class" ICON in the toolbar just below the menubar



Java Class Create a new Java	class.	C
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Modifiers:	 ● <u>public</u>	ected
Superclass:	java.lang.Object	Brows <u>e</u>
Interfaces:		<u>A</u> dd
		Remove
Which method stul	os would you like to create?	
	public static void main(String[] args)	
	 Constructors from superclass Inherited abstract methods 	
Do you want to add	I comments? (Configure templates and default value	here)
	<u>Generate comments</u>	
?	Einish	Cancel

Creating a Class

- Enter a Class Name that represents your program
 - Start with an uppercase
 - No spaces or special symbols
 - If you use multiple words,
 capitalize each additional word

Example: HelloWorld

- Select the checkbox next to "public static void main"
- Click **Finish** when done

Create a new Java	class.		9
Source fol <u>d</u> er:	PACE		Br <u>o</u> wse
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Modifiers:	② public ○ package ○ private □ abstract □ final □ static □	protected	
<u>S</u> uperclass:	java.lang.Object		Brows <u>e</u>
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Which method stul	bs would you like to create?		
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Saving your code

 Notice the top of your editor tab where your class name is shown. The "*" indicates it has not been saved.



• Press **CTRL-S** to save your file. **CTRL-S** saves your file and compiles it in one step.

Running your Program

• From the menubar, select: Run> Run As> Java Application.

 After the first time, you can simply click the **Run icon** in the toolbar just below the menubar to run it again

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Check your Output in the Console



displayed and inputs are accepted

Exporting your Java Code

- **Export** enables you to save your Java code to a file in the filesystem
- In industry, typically you would export your code to a JAVA Archive (JAR) file
- This enables you to then distribute your code, along with all resources and images, to other users
- In our class, we will use a standard archive (ZIP) file

Exporting your Java Code

• Option 1:

- Click on your package name
- Select: File > Export ...

- Option 2:
 - Right Click on your package name
 - Select: Export ...

Export	
or Export resources to an archive file on the local file system.	
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ms <a> <a> <u>Back</u> <u>Hext</u> >	Cancel

Exporting your Java Code (Cont'd)

- In the Export window, under General, select
 Archive File
- Click Next

🖨 Export	×
Select Export resources to an archive file on the local file system.	凸
Select an export destination:	
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General Ant Buildfiles Archive File Breakpoints File System Preferences EJB EJB DZEE Java Plug-in Development Company Web Web Web Services	
? < Back Next > Finish	Cancel

Exporting your Java Code (Cont'd)

Be sure the checkboxes for your class files are selected as well as the checkbox for your package

- Click Browse and locate the entry for your thumbdrive in the resulting window, then open the thumbdrive and enter a filename. When you click Open, the drive and filename will appear in this window
- Click **Finish** when done



Exporting your Java Code (Cont'd)

- When you clicked **Browse** in the prior window, the window below appears and will enable you to locate your **Removable thumbdrive**.
- Double-click the thumbdrive icon, then enter a
 File name in which to export your class
- Click **Open** when done
- You will return to the prior window

Export to Archi	ive File						? 🔀
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Importing your Java Code

- **Import** enables you to retrieve your prior work from your thumbdrive and load it into Eclipse
- First, create a **PACE** Project using the procedures previously reviewed

Importing your Java Code (Cont'd)

- Option 1:
 - Click on the PACE
 Project name
 - Select: File > Import ...

- Option 2:
 - Right Click on the PACE
 Project name
 - Select: Import ...

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Importing your Java Code (Cont'd)

- Next, under the General category, click
 Archive File
- Click Next



Importing your Java Code (Cont'd)

- Click **Browse** to locate the file you previously exported to your
 Thumbdrive
- Make sure your code will be imported into the PACE project folder
- e Import Archive file Import the contents of an archive file in zip or tar format from the local file system. From archive file: C:\PACE\Comp Sci\Instructor Thumb Drive\HelloWorld.zip Browse... 🗉 🔽 🗁 👖 Filter Types... Select All Deselect All Into folder: PACE Browse... Overwrite existing resources without warning ? Finish < Back Next > Cancel
- Click **Finish** when done

Importing your Java Code (cont'd)

- After importing your package, you will typically see a **red X** in the left margin indicating a problem with the package definition
- Click the red X
- In the resulting window that appears, choose the 1st option -Move <classname>.java to <packageName>

