

## Just a little about Java

In today's recitation, we look at a "class" called First that contains two "methods":

1. A procedure main, which does not return a value.
2. A function radius, which does return a value.

We will see how to write this class in the IDE (Integrated Development Environment) Eclipse and how to execute the program –by executing a call on method main.

**THURSDAY'S LECTURE INTRODUCES OBJECTS AND CLASSES CAREFULLY**

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```

/** Class houses a static procedure main and a static procedure
 * for the area of a circle */
public class First {
    /** Print out "hello World and */
    public static void main(String[] args) {
        System.out.println("Hello World");
        System.out.println("Area of circle with radius 5 is " +
            radius(5));
    }

    /** Return the area of a circle with radius r */
    public static double radius(double r) {
        return Math.PI * r * r;
    }
}

```

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## Download and install Java

Course website tells you how:

<http://www.cs.cornell.edu/courses/CS2110/2014fa/resources.html#Java>

**JRE:** Java Runtime Environment. A java program is compiled into the *Java Virtual Machine Language*, An "interpreter" interprets and actually runs your program.

**JDK:** Java Development Kit. Contains, among other things, the program that *compiles* a Java program.

Downloading and installing the JDK also installs the JRE.

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## Download and install Eclipse

Eclipse: The IDE (Integrated Development Environment we use in this course to write, debug, run Java programs.

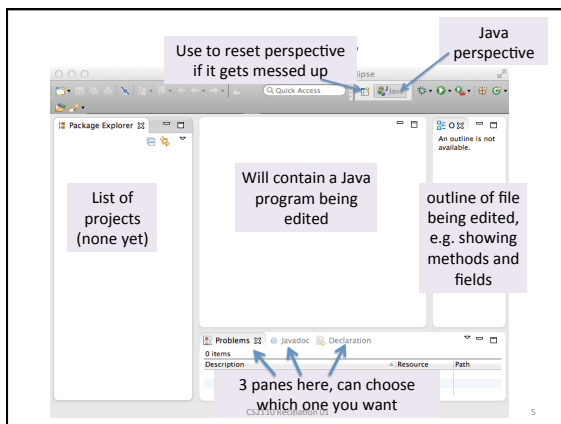
Course website tells you how to install:

<http://www.cs.cornell.edu/courses/CS2110/2014fa/resources.html>

and scroll down.

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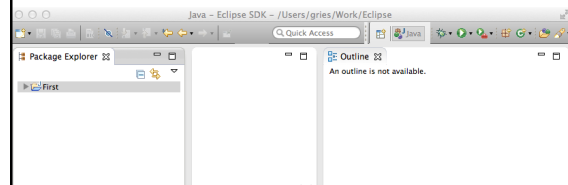
## Add a project

Use menu item **File -> New -> Java project**.

Give it a name, **First**.

**Note:** You get to say where the project files go. We suggest putting them in the default place that Eclipse suggests.

**Note:** Always start a new program in a new project!



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### Add class First

Use menu item **File -> New -> First**.  
 Give it a name, **First**.  
 Click button **Finish**

The screenshot shows the Eclipse IDE with the 'New Class' wizard open. The class name 'First' is entered in the 'Class name' field. The 'Finish' button is highlighted. The background shows the project structure with 'First.java' added to the 'src' folder.

### Put declarations into class Circle

Copy the declarations of components from slide 2 into class **circle** in the middle pane.

The screenshot shows the Eclipse IDE with 'Circle.java' open in the editor. The code from the previous slide is being pasted into the file. The Outline view on the right shows the class structure.

### Running the program

Use menu item **Run -> Run**. It executes method **main**.

The screenshot shows the Eclipse IDE with the program running. The console output displays 'Hello World' and 'Area of circle with radius 5 is 78.53981633974483'. The 'Run' button in the toolbar is highlighted.

### Add a .java file by dragging to left column

You may be asked: copy or to link to original?  
**ALWAYS COPY.**  
 So changes don't mess up original

The screenshot shows the Eclipse IDE with a file being dragged from the file explorer to the project structure. A red arrow points to the file being dragged. A text box explains that the file should be copied.