Step 0: Find your partner from last time, at least one person should have a laptop.

Step 1: Open the RectangleExercise project in Eclipse. (If you don’t have the code, it’s here: http://bit.ly/1MeJDnR)

Step 2: We start by making some modifications to Rectangle.java

a. Make a new instance variable called color, it will be a char. Initialize it to ‘w’ in its declaration.

b. Make all instance variables private.

c. Add accessors and mutators for all instance variables.

d. Add a second, 3-arg constructor that takes a color, height and length.

e. Add two static, final constants called DEFAULT_HEIGHT and DEFAULT_LENGTH of type int. Initialize both to 5.

f. Add a third constructor that takes no arguments and initializes the values of the instance variables width and height to the values of the two static variables from step d. (Hint: use the ‘this’ keyword to reuse another constructor.)

g. Change the draw method to print the ‘color’ character in the body of your rectangle, like so.

********
*   C   *
*       *
********

Step 3: Finally, we make some additions to TestRectangle.java. In the main method...

a. Run your existing TestRectangle, note that it still functions just fine. Even the draw method. Encapsulation!

b. Create a second rectangle with the default width and length and the color ‘r’ and execute its draw method.

c. Create an array of 10 randomly sized rectangles. Print their areas.

d. Sort the array of rectangles according to their areas using selection sort.
   - You can find the code for selection sort in the code from lecture 9 here http://bit.ly/1OR5bO6
   - Copy the doSelectionSort method into your program.
   - Modify the code work on Rectangle objects.

e. Print the areas of the sorted array of rectangles.

When you have this ready, raise your hand and show me the result!

Bonus:

Add static variables and methods to track the number of rectangles created by your program. Then in TestRectangle, write a loop that creates 10 rectangles and then prints the result of your static method that returns the count.