

COMP 110 Introduction to Programming, Summer II, 2008
Recitation on Method and Class, Jul 18, 2008
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I.

```
public class MethodF
{
    public static void main(String[] args)
    {
        int i, j;
        i = 1;

        i = f(3);
        System.out.println("f(3) = " + i);

        System.out.println("f(4) = " + f(4));

        j = 2;
        System.out.println("f(j) = " + f(j));

        System.out.println("f(3)+f(4) = " + (f(3)+f(4)));

        System.out.println("f(f(2)) = " + f(f(2)));
    }

    public static int f(int x)
    {
        return 2*x+1;
    }
}
```

a. Predicate the output of this program. Use pen and paper only.

b. Try this program in jGrasp. Verify your results.

II.

a. Write and use a method that determines the larger of two double values.

```
// Method header
public static double larger ( double x, double y)
{
    // Method body
    if(x > y)
        return x;
    else
        return y;
}
```

b. Write a program so that it prompts the user to input two doubles. Your program outputs the larger number. You must use the method *larger* you have written.

```
public class TestLarger
{
    public static void main(String[] args)
    {

        // Method header
        public static double larger ( double x, double y)
        {
            // Method body
            if(x > y)
                return x;
            else
                return y;
        }
    }
}
```

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III.

```
public class TestRectangle
{
    public static void main(String [] args)
    {
        Rectangle r1, r2;
        int width;

        r1 = new Rectangle(3, 5);
        r1.print();
        System.out.println("r1: area="+r1.computeArea());
        System.out.println("r1: perimeter="+r1.computePerimeter());

        r1.setWidth(9);
        r1.print();

        r2 = new Rectangle();
        r2.print();

        width = r1.getWidth();
        r2.setWidth(width);
        r2.setLength(3);
        r2.print();
    }
}
```

a. Predicate the output of this program. Explain why. The class Rectangle can be downloaded from: <http://www.cs.unc.edu/~zlj/comp110/Program/Rectangle.java>.

b. Try this program in your computer. Verify your results.

- You need to save `TestRectangle.java` and `Rectangle.java` in the same
- Compile **both** files
- Run `TestRectangle.java`. You cannot run `Rectangle` since there is no main method in the class `Rectangle`.

c. Add a new method **Mass** in the class `Rectangle`

- The method is a value-returning method;
- The method has one parameter, the density (ρ);
- Given the density (ρ), the method computes the mass of the rectangle and returns the result. (Mass = density * Length * Width)
- Compile **both** files before you run your program