Introduction to Computer Science
Lab 2 – Writing Programs

Name _____ Section _____ Score _____

Part 1: *Compiling and Running Programs*

Frequently in these labs you will be asked to compile a sample program. Below is a copy of a Java program that displays a drawing. Copy and paste it into your compiler's text editor. Save it as `Art.java`.

```
/**
    Displays an 'art' drawing
*/
public class Art
{
     public static void main(String[] argv)
     {
      String s1 = " *   *   *   *   *   * ";
      String s2 = "   *   *   *   *   *   ";
      String s3 = "_____________________________________\n";
      String s4 =
         "_____________________________________________________________\n";
      System.out.print(s4 + s1 + s3 + s2 + s3);
      System.out.print(s1 + s3 + s2 + s3);
      System.out.print(s1 + s3 + s2 + s3);
      System.out.print(s1 + s3 + s2 + s3);
      System.out.print(s4 + s4 + s4 + s4 + s4);
   }
}
```

Once you have typed in (or pasted in) a program, you need to *compile* it to create an executable file. Using the IDE (JGrasp or Eclipse) compile `Art.java`. Next, execute the program

1. Describe what happened when the program executed.

Part 2: *Writing Simple Programs*

Your initial Java programs will be contained entirely in one file. There are some elements that all the programs will share because of the requirements of the Java language. When

you build a program, your compiler looks for code of the form:

```
public class ClassName
{
  public static void main(String[] args)
  {
    /*
    your work goes here
  */
  }
}
```

The textbook has a program that prints the message `Hello, World!` on the screen.

Type in a program that displays the following information:

- Your name
- Your lab instructor's name
- The days and times the lab portion of the class

For example:

```
      Name: Jack Smith
      Lab instructor: Ms. Jane Doe
      Lab schedule: Monday 1:10 – 2:00 p.m.
```

Compile and run your program. **Print it out and attach it with this sheet when you turn in your lab.** Don't forget the header you used in lab 1 (minus the copyright line).

Part 3: *Detecting Syntax and Logic Errors*

There are numerous opportunities for errors in any program, often in places that seem too simple to require close attention.

```
public class Cube
{
  public static void main()
  {
    double height = 3.0; \\ inches
    double cubeVolume = height * height * height;
    double surfaceArea = 8 * height
    System.out.print("Volume = "
    System.out.println(cubeVolume);
    System.out.print("Surface area = );
    System.out.println(surfaceArea);
}
```

2. What do you think the following program is designed to do?

3. Will it work as shown? If not, what problems can you identify?

4. Copy and paste the program into your IDE. Compile the program. What were the results? (Supply the specific error messages that the compiler reported.)

5. Fix the syntax errors and rerun the program. What were the results?

6. The program has one logic error. What is it?

7. Fix it and rerun the program. What were the results now?

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