Assignment 1 (100 points)
CS 113 Spring 2015

Due Date: See Syllabus
Name & UCID & Section Number: Please write your name, UCID, and section number on the submission (**5 points**)

The following program reads the numbers input and displays them:

```
1    // Copy the numbers input until 0.0 is read
2    import java.util.*;  // for class Scanner
3    public class Copy {
4       public static void  main(String[] args) {
5           Scanner stdin = new Scanner(System.in);
6           System.out.println("Ready to copy!\n" +
7                              "Enter 0.0 when done!");
8           double num;
9           num = stdin.nextDouble();
10          while(num != 0.0) {
11              System.out.printf("%.2f\n", num);
12              num = stdin.nextDouble();
13          }
14          System.out.println("Goodbye!");
15          System.exit(0);
16      }
17   }
```

Your assignment consists of three parts (**TOTAL: 95 points**):

1. Explain how the above program operates by briefly explaining each of the 17 lines – number the explanations (34 points – each line 2 points).
2. Compile and run the above program with the list of numbers shown below and **submit** the program and its output (16 points)
3. Modify the above program to also print
    a. Count of numbers input (15 points for correctly modifying the program)
    b. The total numbers in the input (15 points for correctly modifying the program)
    c. The average value of the numbers in the input (15 points for correctly modifying the program)

    Use the number list shown below. You need to submit the modified program along with its output.

Note: To submit the output, copy the output to a text file and print the text file.

Notes /Hints:

- Part 2 of Assignment
    - You will need to store the above program in a file named `Copy.java` before you can compile it and run it.
- Part 3 of Assignment
    - Your program will need to add 2 variables, say `n` and `total` (of types `int` and `double`, respectively) that keep a running count of the number of values read and the total up to that point.
    - Use the format items `%d` and `%.2f` to print integer (`int`) and floating-point numbers (`double`) values, respectively.
    - Both `n` and `total` start with zero initial values and have to be updated after each number is read.
    - The average can computed using the final values of `n` and `total`.

Use the following Input data

```
2.0
3.0
11.0
-4.0
6.0
8.0
0.0
```

Sample input/output for part 3 of assignment (numbers in bold/red are supplied by the user)

```
Ready to copy!
Enter 0 when done!
2.0
2.00
3.0
3.00
-4.0
-4.00
0.0
Count of numbers read = 3
Total value of numbers read = 1.00
Average value of numbers read = 0.33

Goodbye!
```