CS-200-1: Programming I, Fall 2014
Northeastern Illinois University
Homework #5
Due: Wednesday, October 15th by 2:50 p.m.

Assignment Specifications: Read all instructions carefully!
Make sure the following are in a .zip file - Do **NOT** submit files individually to D2L!!

- ☐ Your source code (the .java files).
- ☐ Your output in .txt file(s).
- ☐ Make sure your name and assignment number are in the .txt file and the .java file(s) (as comments for the .java files).
- ☐ Turn your homework in to D2L before class (no late homework will be accepted - see syllabus for policies).

Problem #1

- Trace through (i.e. look at one line at a time) the .java program written out below.
- Determine what is printed out to the console. In a .txt file (named Homework5_P1.txt), put the output (i.e. what is printed out to the console) exactly as it would appear in the console.
- You may use jGrasp to help you as you trace through this.
- Put the Homework5_P1.txt file into a folder named Homework5.

```
public class HW5Tracing
{
    public static void main(String[] args)
    {
        int width = 7;
        for (int row = 1; row <= width; row++)
        {
            int maxChar = width - row;
            int maxNum = row;

            for (int column = 1; column <= maxChar; column++)
            {
                if (column % 2 == 1)
                    S.O.P("_");
                else
                    S.O.P("o");
            }

            for (int column = 1; column <= maxNum; column++)
            {
                S.O.P(row);
            }
            S.O.P.L();
        }
    }
}
```

Problem #2

- Create a .java file named AverageTemperature.java.
- Write a program that asks the user to enter a temperature in fahrenheit (this can be a decimal and can be positive or negative).
- The program should continue to ask the user to enter a temperature until the user enters 999.
- The program should output the average temperature. Display the average as a decimal. Be careful of integer division!
- Your output should match the sample output provided below.
- Put the AverageTemperature.java file into the Homework5 folder.

```
Please enter a temperature in fahrenheit or 999 to quit: 30
Please enter a temperature in fahrenheit or 999 to quit: -12
Please enter a temperature in fahrenheit or 999 to quit: 22
Please enter a temperature in fahrenheit or 999 to quit: -3
Please enter a temperature in fahrenheit or 999 to quit: 999
The average temperature is 9.25
```

```
Please enter a temperature in fahrenheit or 999 to quit: 999
No average calculated.
```

Problem #3

- Create a .java file named OpenTriangle.java.
- Write a program that asks the user to enter the height of a triangle (greater than 1).
- The program should create an open triangle that has a base width equal to the height.
- Your output should match the sample output provided below.
- Put the OpenTriangle.java file into the Homework5 folder.

```
Enter a triangle height greater than 1: 5
*
* *
*   *
*     *
* * * * *
```

```
Enter a triangle height greater than 1: 2
*
* *
```

```
Enter a triangle height greater than 1: 3
*
* *
* * *
```

Problem #4

- Create a .java file named ReverseWords.java.
- Write a program that prompts the user to enter a string.
- The program should print out the reverse of each word in the string on its own line, starting with the first word in the string.
- Do not use any String methods other than `charAt()`
- Your output should match the sample output below.
- Put the ReverseWords.java file into the Homework5 folder.

```
Enter a string: apple orchard
elppa
drahcro
```

```
Enter a string: howdy
ydwoh
```

```
Enter a string: The leaves are falling
ehT
sevael
era
gnillaf
```