6.04 Assignment Instructions

Instructions: Write a program to calculate the average category, pressure, and wind speed of all Atlantic Hurricanes which have occurred from 1980 - 2006. Also tally the number of storms in each category.

1. Create a new project 6.04 Hurricane Data in the Mod06 Assignments folder.
2. Be sure you have downloaded the Hurricanes1.java file to the newly created folder.
3. Print a copy of the 6.04 Virtual Lecture Notes you previously downloaded to the Mod06 Documents Folder.
4. As a warm up for this assignment analyze the code for the Hurricanes1 class line by-line and perform a desk check. Have this available for the next oral quiz.

5. Create a new class called Hurricanes2 in the Mod06 Assignments folder.
6. You will need the hurcdata2.txt file that you downloaded to the 6.04 Assignments project folder.
7. Examine the hurcdata2.txt file in a text editor so you know what information it contains. The wind speed is given in knots, not miles per hour.
8. Write your program in functional units to do one task at a time. Use for-each loops and traditional for loops where they are appropriate.
9. Your program should read each column of data into a separate one dimensional array. Think carefully about how to read multiple data items during one loop iteration. (There is no need to use a two dimensional array for this assignment.)
10. Calculate three averages: Category, Speed, and Pressure. Remember that the Saphir-Simpson Hurricane Scale is in miles per hour, not knots.
11. Determine the maximum and minimum values for the Category, Speed, and Pressure. Do not use Java's **max()** or **min()** methods. Think about how you would go through a list of numbers keeping track of which one is largest or smallest, substituting if you find a number bigger or smaller than the last ones. Use the **Integer.MIN_VALUE** and **Integer.MAX_VALUE** constants to help you find the maximum and minimum values.
12. Print the results in a well formatted, user-friendly fashion.
13. Write the summary statistics to a new text file called Summary.txt.

If you are interested, you can find information about storms after 2006 at the National Oceanographic and Atmospheric Administration web site.

Expected Output: When your program runs correctly, you should see something similar to the following screen shot. Due to the amount of information, only the top and bottom of the output generated is provided

```
                    Hurricanes 1980 - 2006

Year     Hurricane    Category     Pressure (mb)     Wind Speed (mph)
=========================================================================
1980      Allen           3            945                115
1983      Alicia          3            962                115
1984      Diana           3            949                115

2006      Helene          3            954                126
2006      Isaac           1            985                 86
=========================================================================
Average                   2            963                104
Maximum                   5           1002                172
Minimum                   1            882                 74

Number of Category 1: 26
Number of Category 2: 11
Number of Category 3: 14
Number of Category 4:  4
Number of Category 5:  4
```