COP 3330 Suggested Exercises for Week 3

Strings

1) Write a program that prompts the user to enter 10 words (letters only) and prints out the one that comes last **lexicographically.**

2) Edit the first exercise so that it prints out the string that comes last **alphabetically.**

3) Ask the user to enter a string and a pattern to search for in the string. Have your program calculate the number of appearances of the pattern in the string. Two different appearances may overlap. For example, the pattern "aaa" appears in "baaaaa", three times, once starting at index 1, a second time starting at index 2 and the last time starting at index 3.

4) Write a program that takes in the user's first and last names and creates a single string object that stores their name in the format last comma first. For example, if they enter "Anne" and "Bridges", create a string object that stores "Bridges, Anne". For practice, explicitly call the concat method.

5) Write a version of the popular kids game Hangman. Think about how you want to use the replace method (carefully!)

Quiz 3 Review

6) Write a program that asks the user the total number of ounces of water they've drank in a day and converts that to pounds and ounces. (A pound is 16 ounces.) The converted answer should have the number ounces printed to be in between 0 and 15.

7) The arithmetic mean of 3 positive real numbers, a, b and c is $\frac{a+b+c}{3}$. The geometric mean of the same 3 numbers is $\sqrt[3]{abc}$. The harmonic mean of the same three numbers is $\frac{3}{\frac{1}{a}+\frac{1}{b}+\frac{1}{c}}$. Write a program that asks the user to enter a, b and c and then prints out both of these means. Make sure to use the Math Class when appropriate.

8) Write a program that simulates rolling a pair of standard six sided dice 1,000,000 times and records the number of times a sum of 12 is rolled and the number of times a sum of 1 is rolled, and displays these values to the screen.

9) Write a program that asks the user to enter a String and prints out the sum of its letter values. You may assume the String only has letters and that the letter value of 'A'/'a' is 0, the letter value of 'B'/'b' is 1, ..., 'Z'/'z' is 25. For example, the string "Cat" has the value of 21, since 'C' is worth 2, 'a' is worth 0 and 't' is worth 19.

10) Write a program that asks the user to enter a positive integer with upto 18 digits. Read the number in as a String, not a long. Then, convert this String to a long, printing out the value of the long variable. (It's very easy to get this to look like it's working if you are only running the code, but one has to look at the code to see how everything is stored to see if the exercise was completed appropriately or not.)