# Junior Knights - Course 2 Week 4 Assignment: Strings, Frequency Arrays

#### Assignment A: Letter frequencies in files

Take several of your papers from school and copy them into a text file (in notepad.) Run the program freq.py or freq.c on the program, scaling the output to print out the percentage of each letter out of all the alphabetic characters. (Make sure to count both lower and uppercase letters.) See if your results correspond to what you can find online to be the general frequency of letters in the English language. Summarize your results in a Word document.

### **Program B:Weather Frequencies**

Write a program to read in weather files shown in class last week (with the -1 termination). Your program should calculate the number of days with each temperature, for each degree. (Thus, count each average daily temperature from 75.0 through 75.9 as a temperature of 75, for example.) Assume that the valid temperatures range from -50 to 150 when you set up your frequency array. Print to an output file the number of days with each temperature, leaving out temperatures whihe occured for 0 days. Format the output file as you wish.

### **Program C:Weather Frequencies Extended**

Add to Program B so that a scaled bar graph is printed out. In the output however, have a bar for each temperature in between the minimum and maximum temperature achieved, inclusive. (Thus, some of these bars might be 0.) Output one star per percent of days with each temperature. For example, if 5% of days had a temperature of 73, you should output five stars for the row for temperature 73.

# Program D: Alphabetic Sorter

Write a program that prompts the user to enter an initial word, all lower case. This word will be used to "split" the next 10 words the user enters into 2 lists. Count how many of the ten subsequent words come before the initial word alphabetically and count how many of the ten subsequent words come afer the initial word alphabetically. You may assume these ten words are unique and not equal to the initial word.

Sample Run Enter your initial word. coffee Enter 10 more words. jeans tea chocolate table bear alphabet breakfast milk billboard acorn You entered 6 words that come before coffee. You entered 4 words that come after coffee.

# **Deliverables**

Please email to Gabriel (<u>khotchner@knights.ucf.edu</u>) the following files:

1) A word document with your results for the first assignment. Make sure to include a table of your frequencies, a table of the frequencies of typical English and your analysis.

2) weatherfreq.c or weatherfreq.py for your solution to program two.

3) weatherfreq2.c or weatherfreq2.py for your solution to program three.

4) alpasorter.c or alphasorter.py for your solution to program four.