Assignment 5: Reading and Programming Project due 10/9

Reading Assignment

Read Sections 6.1, Array Basics, and the subsections of Chapter 6 on pages 400-411 of the textbook completing self-test exercises.

Programming Assignment

This assignment consists of one project TextStats that is designed to emphasize the use of arrays, string processing and loops.

Programming Project

TextStats: Compute Text Statistics due 11:00 p.m. on Wed, 10/9 worth 10 points, 4 points extra credit

In this assignment you will be processing strings of text. The user will be inputting text line by line, until they enter the word STOP. Your program must compute how many words of length 1 were entered, how many words of length 2 were entered, and so on until (and including) 10-character words, and finally, the number of words of length 11 or higher. The input will consist of letters, white space characters ' ', and punctuation characters ',' and '.'. Notice that a punctuation character is not considered to be part of a word even if it immediately precedes of follows a word.

For extra credit, also compute how many of each of 26 characters of English alphabet were used in the text.

When the user indicates the end of the text by inputing the word STOP on a blank line, your program must print out the text statistics in the form shown in the following sample interaction, and terminate.

This program computes input text statistics.
Enter text with no other punctuation symbols but . and , Enter the word STOP on a blank line to stop.
This is just a simple test.
ZZZZZZZZZZZZZZZZZZZZZZZZ
STOP
Printing Word-Length Statistics
1:1
2:1
4:3
6:1
11:1
Printing Character Statistics
Notice that the program should not print statistic values that are 0. Note again that the character statistics part is for extra credit only and you should work on it after you have completed and tested the program without it. (You must do it without using a giant conditional over 26 cases to get extra credit.)

You must use a static method in your program. I suggest that you create a method that takes in a one-line string and the array(s) that contain the word-length (and maybe character) counts and updates these arrays according to the content of the string.

Note also that partial credit (up to 4 points) will be given to programs that correctly compute the text that contains only one word on each line, e.g.

This program computes input text statistics.
Enter text with no other punctuation symbols but . and ,
line by line. Enter the word STOP on a blank line to stop.
one
two
three
four
STOP
Printing Word-Length Statistics
3:2
4:1
5:1
Printing Character Statistics
E:3
F:1
H:1
N:1
O:3
R:2
T:2
U:1
W:1
Happy hacking!