

CS 211 Introduction to Programming
Fall 2019

Programming Assignment 5

(Assigned: September 19, 2019; Due: September 26, 2019)

*The goal of this assignment is to write a program that handles values of type **char** and performs character I/O, by the member function **get** described in Section 6.3 of the textbook.*

Write a C++ program that reads a line of text entered by the user. The line must be read one character at a time and, as each character is read, certain properties of the character observed are remembered for later reporting. After the line is completely read in, the user must be given a choice of these options:

1. Display length of message
2. Display numbers of each vowel (upper and lower case counted together)
3. Display numbers of upper and lower case letters
4. Quit

The result of the user's selection must be displayed, and the menu repeated, until 4 for Quit is chosen.

Notes:

- The name of your source file must be: **pa5.cpp**
- Read in the text entered by user using **cin.get** in a loop something like this:

```
do
{
    cin.get(next_char);
    // check properties of next_char and update counters
} while (next_char != '\n');
```

*The function **cin.get(next_char)** is used instead of **cin >> next_char** to make sure spaces are not skipped over, and are treated like any other character.*

- In counting the numbers of vowels, both upper and lower case letters should be counted together (e.g. for “Edible egg” the count for ‘e’ should be 3).
- Make sure that you do not count the newline (‘\n’) character, found at the end of the input line, while computing the length of the message.

- A typical sample run of your program should look like (output **blue**, input **red**) :

```

Enter a line: Eucalyptus is evergreen.
-----
Available choices:
    1. Display length of message
    2. Display numbers of vowels
    3. Display numbers of upper and lower case letters
    4. Quit
Enter the number of your choice: 2

Vowel counts:
    A's: 1    E's: 5    I's: 1    O's: 0    U's: 2
-----
Available choices:
    1. Display length of message
    2. Display numbers of vowels
    3. Display numbers of upper and lower case letters
    4. Quit
Enter the number of your choice: 1

Your message contained 24 character(s).
-----
Available choices:
    1. Display length of message
    2. Display numbers of vowels
    3. Display numbers of upper and lower case letters
    4. Quit
Enter the number of your choice: 3

Number of letters: upper case 1, lower case 20.
-----
Available choices:
    1. Display length of message
    2. Display numbers of vowels
    3. Display numbers of upper and lower case letters
    4. Quit
Enter the number of your choice: 4

```

Assignment Submission Instructions:

Submit just your **pa5.cpp** file via Blackboard. Please do not submit any other file contained in your Visual Studio 2019 project for this assignment.

Grading Rubric:

Your program submission will be graded according to the following rubric:

The name of the submitted program source file is pa5.cpp (not pa5.c or Pa5.cpp or PA5.cpp etc.)	1
The first two lines (student's name, and student's WSU ID) of the required comments at the top of the program are included	1
The variable identifier names used are descriptive (single letter names for loop counters are OK)	1
A good indentation scheme is used throughout the program	2
The program compiles and links with no errors or warnings	5
The program works correctly for the input line "Aardvark"	5
The program works correctly for the input line "GIANT sequoia"	5
The program works correctly for the empty input line ""	5
TOTAL	25