

Lab 10 Strings

Question 1

Write a program to read a string and count the number of characters and the number of vowels ('a', 'e', 'i', 'o', 'u') in the string. For the counting of vowels, you should consider both uppercase and lowercase versions of the characters.

Hint:

1. You may use `cin >>` to read the string to a char array.
2. You may use the function `strlen()` in `<cstring>` to count the number of characters in the string
3. You may need to define a counter (initialized to 0) and write a for-loop to examine each character in the string (until the null character '\0' is encountered). If the character is vowel, update the count.

Sample input and output:

Example 1	Example 2
<u>Easter</u> The number of characters is: 6 The number of vowels is: 3	<u>Hello</u> The number of characters is: 5 The number of vowels is: 2
Example 3	Example 4
<u>AEIOU</u> The number of characters is: 5 The number of vowels is: 5	<u>City</u> The number of characters is: 4 The number of vowels is: 1

Question 2

Download `convert.cpp`. Modify it to convert all lowercase letters in a string to uppercase letters, and convert all uppercase letters to lowercase letters. The input string may contain multiple words. You can use `cin.getline()` function in `<cstring>` to read the string to a char array.

Sample input and output:

<i>Example 1</i>	<i>Example 2</i>
<u>HeLLO</u> hEllo	<u>CityU</u> cITYu
<i>Example 3</i>	<i>Example 4</i>
<u>Course 2311</u> cOURSE 2311	<u>a Survey</u> A sURVEY