

Tutorial 10 Strings

1a) Write a program to read a string and count the number of characters in the string. Name your program `string_len.cpp`. You may assume the maximum length of the string is 20 (that is, you need to define a char array with size at least 21 elements).

You may use `cin>>` to read the string to a char array and use the function `strlen()` in `<cstring>` to count the number of characters in the string.

After you get it works, let's rewrite the code again *without* using `strlen()`

Hint: Strings always end with the '\0' character

Example input and output

Easter
6

Question: Can your program handle strings with more than one word (e.g. the string "Easter Holiday")? Why?

b) Modify your program in part a) to handle strings with more than one words by using the `cin.getline()` function to read the string.

2) Modify your program in question 1 such that it counts the number of vowels ('a', 'e', 'i', 'o', 'u') in a string. You should consider both uppercase and lowercase versions of the characters. Name your program `countVowels.cpp`.

Hint: You may need to define a counter (initialized to 0) and write a for-loop to examine each character in the string (until the character '\0' is encountered). If the character is vowel, update the count.

Example input and output

Easter
3

3) Download `toUpper.cpp` and modify it to convert all lowercase letters to uppercase letters. You may test if a character `c` is lowercase by the following condition:

```
if ('a' <= c && c <= 'z') .....
```

Also, you may convert a lowercase letter `c` to uppercase by the following statement;

```
c = c + 'A' - 'a';
```

Example input and output

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4) Download `testVowelFunction.cpp` and define the following function.

```
int getVowelCount (char s[]);
```

The function should accept an input string `s` and return the count of vowels in the string.

Also, write a statement to call the function you define with the input string.

The program should produce the same output as question 2.