CS2006 C++ Lab Exercises
Week 7

C-Strings and Strings:

1. Write a function that returns an integer and accepts a pointer to a C-string as an argument. The function should count the number of characters in the string and return that number. Demonstrate the function in a simple program that asks the user to input a string, passes it to the function, and then displays the function's return value.

2. Write a function that accepts a pointer to a C-string as an argument and displays its contents backward. For instance, if the string argument is "Gravity" the function should display "ytivarG". Demonstrate the function in a program that asks the user to input a string and then passes it to a function.

3. Write a function that accepts a pointer to a C-string as an argument and returns the number of words contained in the string. For instance if the string argument is "Four score and seven years ago" the function should return the number 6. Demonstrate the function in a program that asks the user to input a string and then passes it to the function. The number of words in the string should be displayed on the screen. Also, include an overloaded version of this function that accepts a string class object as its argument.

4. Write a function that accepts a pointer to a C-string as an argument. The function should count the number of vowels appearing in the string and return that number. Write another function that accepts a pointer to a C-string as its argument. This function should count the number of consonants appearing in the string and return that number.

   Demonstrate these two functions in a program that performs the following steps:
   1. The user is asked to enter a string
   2. The program displays the following menu:
      A) Count the number of vowels in the string
      B) Count the number of consonants in the string
      C) Count both vowels and consonants in the string
      D) Enter another string
      E) Exit the program
   3. The program performs the operation selected by the user and repeats until the user selects E to exit the program.

5. Write a program that asks the user for the user's first, middle and last names. The names should be stored in three different character arrays. The program should then store, in a fourth array, the name arranged in the following manner: The last name followed by a comma and a space, followed by the first name and a space,

followed by the middle name. For example, if the user entered “Carol Lynn Smith”, it should store “Smith, Carol Lynn” in the fourth array. Display the contents of the fourth array on the screen.

6. Write a function that accepts a pointer to a C-string as its argument. The function should return the character that appears most frequently in the string. Demonstrate the function in a complete program.

7. Write a program that reads a string from the user containing a date in the form mm/dd/yyyy. It should print the date in the form March 12, 2012.