Bonus Assignment #1

1) Write a program the returns the three first prime numbers in an array if they exist. The user will enter the size and the integer elements of the array.
    a. Input: 1 4 5 6 7 3 11 9 2, output: 1 5 7
    b. Input: 2 6 9 12 15, output: 2

2) Write a function that accepts an int array and the array's size as arguments. The function will create a new array that is twice the size of the argument array. The elements of the argument array will be copied to the new array and the unused elements will be initialized with -1. The function will return a pointer to the new array.
    a. Input: 1 2 3 4, output: 1 2 3 4 -1 -1 -1 -1
    b. Input: 1 2 3 4 5 5, output: 1 2 3 4 5 5 -1 -1 -1 -1 -1

3) Write a program that accepts a char array and its length as inputs. The array could contain letters and digits only. You have to implement a function that accepts a pointer to a char array and its size as arguments. The function will display the total of digits, vowels and consonants.
    a. Input: a b 3 4 e e 1, output: 3 digits, 1 consonants and 3 vowels.
    b. Input: a b b a b, output: 0 digits, 3 consonants and 2 vowels

4) Write a program that accepts an integer array and its size as inputs. You have to implement a function that returns the total of integers divisible by 3, the total of integers divisible by 5 and the total of integers divisible by 2.
    a. Input: 1 3 5 6 9 10 11, output: 2 numbers divisible by 3, 2 numbers divisible by 5 and 2 numbers divisible by 2.
    b. Input: 7 14 5 2 3 10 11, output: 1 numbers divisible by 3, 2 numbers divisible by 5 and 3 numbers divisible by 2.

5) Write a program that accepts a char array and its size as inputs. You have to implement a function that accepts a char pointer to an array and array's length as arguments. The function will return the characters that don't have duplicates.
    a. Input: a a b a c d d, output: b c
    b. Input: a b b d 1 1 2 d b, output: a 2

6) Write a program that accepts an array of characters and its length as inputs. You have to implement a function that displays the total of capital case letters and the total of lower case letters.
    a. Input: a a B c d E, output: 4 lower case letters and 2 capital case letters.
    b. Input: A B C D E, output: 0 lower case letters and 5 capital case letters.

7) Write a program that shifts the elements of a character array of length n by d elements to the right (d<=n). The result will be saved in a new array that has a length=2*n and the empty spaces will be filled by $.
    a. Input: a a b d e, shift by 3 elements, output: $ $ $ a a b d e $ $
    b. Input: a b c 4, shift by 2 elements, output: $ $ a b c 4 $ $

8) Write a program that replaces digit elements of a character array by %.
    a. Input: a a 1 3 b d d, output: a a % % b d d
    b. Input: 1 2 4 5 d d s, output: % % % % d d s

9) Write a program that replaces a lower case letter by its corresponding capital case one and vice versa.
    a. Input : a a B d D e, output: A A b D d E
    b. Input: A B d E F G, output: a b D e f g

10) Write a program that returns the shortest and longest strings of an array of string elements.
    a. Input: work university replace three two, output: shortest strings are: two and longest strings are: university
    b. Input: three seven six two five be to, output: shortest strings are: be, to and longest strings are: three, seven