1) Read EdX Chapters 7 and 9: all sections; watch the videos
http://users.ece.utexas.edu/~valvano/Volume1/E-Book/

The purpose of this homework is get more practice with arrays in C programming which will be the primary subject of Exam 2

In this homework we will look at basics of arrays and revisit the for-loop as a natural fit for traversing an array. We will also look at subroutines and parameter passing.

Download and unzip HW4.zip. You can run this in the simulator and observe the output in a UART#1 window. Write a function that counts the number of instances of letter in a string. The strings are null-terminated. All strings are 11 characters long (12 bytes including null.) Complete the implementation of the function Count, and test it using the following Keil project in HW4. You may use pointer or index syntax to access data from the string. Take a screenshot of the Keil debugger showing your code and the output results of running your code. Show this printed page to your TA at the start of class. You are expected to write the function Count. It is not necessary that you understand the rest of the code. What you need to know is what the Count function is supposed to count the number of occurrences of letter in string. This main program is an example of functional debugging; it defines a set of input parameters, calls your function, and evaluates the equivalence of your output to the expected output.

```c
struct countTestCase{
    unsigned char Letter;        // Letter for which to search
    unsigned char Buffer[12];    // String in which to search
    uint16_t CorrectCount; // proper result of Count()
};
typedef const struct countTestCase countTestCaseType;

countTestCaseType countTests[9]={
    { 'r', "Gerstlauer ", 2},
    { 'b', "Bill Bard ", 0},
    { ' ', "Jon Valvano", 1},    // note: space is a valid character
    { 'a', "Yerraballi ", 2},
    { 's', "Mississippi", 4},
    { 'i', "Mississippi", 4},
    { 'm', "Mississippi", 0},
    { '2', "21212121212", 6},
    { '1', "11111111111", 11}
};

uint16_t Count(unsigned char letter, const unsigned char string[12]);

int main(void){
    uint16_t i,result;
    uint16_t errors=0;
    UART_Init();              // initialize UART
    printf("HW5, Assignment 5.2 \n");
    for (i = 0; i < 9; i++){
        result = Count(countTests[i].Letter,countTests[i].Buffer);
        if (result != countTests[i].CorrectCount){
            errors++;
        }
    }
}
```

Homework 4 Due: Thursday 7/17 @ start of lab 2:00pm
printf("i=%d, your result=%d, correct=%d\n",i,result,
countTests[i].CorrectCount);

}

if (errors==0){
    printf("Program works");
} else {
    printf("Does not work");
}
return 0;

Uint16_t Count(unsigned char letter, const unsigned char string[12]){  
    return 0;  // remove this line and add your solution here
}