LAB 5
ENGR 214

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1. Write a C program that determines the maximum value in a user-entered list.

```
CLanguage > ENGR214_C_Lab > L5 > C L5_Q1.c > ...
1    /*//////////////////////////////////////////////
2    //   Title:         L5_Q1.c
3    //   Author:        Ryan L.
4    //   Description:   C program that determines the maximum value in a user-entered list
5    *///////////////////////////////////////////////
6    #include <stdio.h>
7
8    int main(){
9        // Declare variables (test case: )
10       const int NUM_ELEMENTS = 3;
11       int userVals[NUM_ELEMENTS];
12       int maxVal = 0;
13       int i;
14
15       // Initialize variables
16          // cycles through the user-entered list and saves it to the array
17       printf("Enter %d integers: ", NUM_ELEMENTS);
18       for (i = 0; i < NUM_ELEMENTS; i++){
19           scanf("%d", &userVals[i]);
20       }
21
22       //Work
23          // cycles through the array and compares each value to the current maxVal
24       for(i = 0; i < NUM_ELEMENTS; i++){
25           if (userVals[i] > maxVal){
26               // if the current value is greater than the current maxVal, it becomes the new maxVal
27               maxVal = userVals[i];
28           }
29       }
30       //Output
31       printf("The maximum value is %d\n", maxVal);
32       return 0;
33   }
```

```
PROBLEMS 2    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

uagesLearnt\CLanguage\ENGR214_C_Lab\L5\" ; if ($?) { gcc L5_Q1.c -o L5_Q1 } ; if ($?) { .\L5_Q1 }
Enter 3 integers: 12 2 4
The maximum value is 12
PS C:\Users\ryanc\Documents\Code\LangLearnt\MyLanguagesLearnt\CLanguage\ENGR214_C_Lab\L5> cd "c:\Users\ryan
uagesLearnt\CLanguage\ENGR214_C_Lab\L5\" ; if ($?) { gcc L5_Q1.c -o L5_Q1 } ; if ($?) { .\L5_Q1 }
Enter 3 integers: 1 -2 4
The maximum value is 4
```

2. Write a program in C that efficiently reads user-inputted values and determines the middle value if the input is within the specified limit of 9 values.

```c
/*///////////////////////////////////////////////
//    Title:          L5_Q2.c
//    Author:         Ryan L.
//    Description:    programnthat efficiently reads user-inputted values and determines the middle value
*///////////////////////////////////////////////
#include <stdio.h>
int main(){
    // Declare variables
    const int NUM_ELEMENTS = 9;
    int userValues[NUM_ELEMENTS];
    int currValue, midIndex, i;

    // Initialize variables
        // cycles through the user-entered list and saves it to the array
    printf("Enter %d integers: ", NUM_ELEMENTS);
    scanf("%d", &currValue);
    while((currValue >= 0) && (i < NUM_ELEMENTS)){
        userValues[i] = currValue;
        i++;
        scanf("%d", &currValue);
    }

    //if too many numbers are entered the program will stop
    if(i>NUM_ELEMENTS){
        printf("Too many numbers");

    } else {
        //if the number of values entered is odd, the middle value is the value at index i/2
        midIndex = i/2 ;
        printf("Middle item: %d\n", userValues[midIndex]);
    }
    return 0;
}
```

CLanguage > ENGR214_C_Lab > L5 > C L5_Q2.c > ⊘ main()

PROBLEMS 2   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

PS C:\Users\ryanc\Documents\Code\LangLearnt\MyLanguagesLearnt\CLanguage\ENGR214_C_Lab\L5> cd "c:\Users\ryanc\Docum
uagesLearnt\CLanguage\ENGR214_C_Lab\L5\" ; if ($?) { gcc L5_Q2.c -o L5_Q2 } ; if ($?) { .\L5_Q2 }
Enter 9 integers: 2 3 4 8 11 -1
Middle item: 4

3. Write a C program to Capitalize the First and Last Letters of Each Word of a String.

```c
/*////////////////////////////////////////////////
//    Title:          L5_Q3.c
//    Author:         Ryan L.
//    Description:    C program to Capitalize the First and Last Letters of Each Word of a String.
*/////////////////////////////////////////////////
#include <stdio.h>
#include <conio.h>
#include <ctype.h>
#include <string.h>

int main(){
    // Declare variables (test case: )
    char str[100] = "this is a test string";
    int length;
    // Initialize variables
    length = strlen(str);

    //Work
    for (int i = 0; i < length; i++){
        if (i == 0 || i == length - 1){
            str[i] = toupper(str[i]);
        }
        if (str[i] == ' '){
            str[i-1] = toupper(str[i-1]);
            str[i+1] = toupper(str[i+1]);
        }
    }
    printf("%s", str);
    return 0;
}
```

PROBLEMS 2   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

PS C:\Users\ryanc\Documents\Code\LangLearnt\MyLanguagesLearnt\CLanguage\ENGR214_C_Lab\L5> cd "c:\Users\ryan
uagesLearnt\CLanguage\ENGR214_C_Lab\L5\" ; if ($?) { gcc L5_Q3.c -o L5_Q3 } ; if ($?) { .\L5_Q3 }
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