EE1910 Lab 5: Code Composer - Functions

Objectives

- Create a pair of user driven programs in C

Prelab **student check off**

- Review the resistor color code slides rom lab week 2 ☐
- Review the resistor basics slides ☐

Assignment

Part1: Create an MSP432 program that reads input from the user and prints the value of a resistor. Inputs will be read one at a time and assume a 4 band resistor configuration. Only the value (no tolerance) will be calculated. Input format:

Please input the 1st band color:

k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w -white:

(note: chars not #s)

~~You must use a function to decode the character input to an integer value~~

See the example below ☐

Part 2: Create a console program that reads input from the user and prints the value of a parallel and series combination of 3 resistors. Inputs will be read all at once and assume a no comma format (e.g. 1000).

Input format: *Please input the three resistor values separated by spaces.*

~~You must use two functions to calculate the parallel and series values~~

See the example below ☐

Check Off

- Demo and document your color code program 50%
- Demo and document your resistor combination program 50%

Checkoff due by 4:00 pm Friday of the lab week (in-person or via Teams chat)

Submit (in the box): flow diagram(2) and code(2) - due 4:00 pm, Friday of the lab week.

Special Note: - when reading in a char using scanf - add a space before the %c

```
scanf(" %c", &foo);        // read in a char and place it in the variable foo
```

You will need to use the pow function from the math.h library

pow(base, exponent) evaluates as base^{exponent}

pow(10,3) evaluates to $10^3 = 1000$

pow(10,foo) evaluates to $10^{foo} = 10000$ if foo = 4

```
Lab_MSP_Project:CIO
[CORTEX_M4_0]  !! Lab 5 program !!
Please enter the first resistor band value
k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w - white:
r
Please enter the second resistor band value
k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w - white:
y
Please enter the third resistor band value
k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w - white:
g
The resistance is 2400000 Ohms

Please enter the first resistor band value
k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w - white:
o
Please enter the second resistor band value
k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w - white:
l
Please enter the third resistor band value
k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w - white:
b
The resistance is 360 Ohms

Please enter the first resistor band value
k - black, b - brown, r - red, o - orange, y - yellow, g - green, l - blue, v - violet, e - grey, w - white:
```

```
Lab_Cons_Project.exe [C/C++ Application] Z:\msoe_current\21_Q2_EE1910\Workspace_
 !! Lab 5, Part 2 program !!
Please enter the three resistor values separated by a space
 200 200 200
The series resistance is 600.000000 Ohms
The parallel resistance is 66.666664 Ohms


Please enter the three resistor values separated by a space
100 200 300
The series resistance is 600.000000 Ohms
The parallel resistance is 54.545456 Ohms


Please enter the three resistor values separated by a space
```