C Programming Project Proposal
Calculation of resistance from colour codes.

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The program should be able to accept user input for four band and five band resistors and calculate the resistance then give an appropriate output.

It will be based on the simple rules for ditermination of resistance from coluor codes.

The following are the colours that can be accepted in the program and their respective values.

Color	Digit	Multiplier	Tolerance
Black	0	$10^0 = 1$	
Brown	1	$10^1 = 10$	±1%
Red	2	$10^2 = 100$	±2%
Orange	3	$10^3 = 1,000$	
Yellow	4	$10^4 = 10,000$	
Green	5	$10^5 = 100,000$	
Blue	6	$10^6 = 1,000,000$	
Violet	7	$10^7 = 10,000,000$	
Gray	8	$10^8 = 100,000,000$	
White	9	$10^9 = 1,000,000,000$	
Silver		$10^{-2} = 0.01$	±10%
Gold		$10^{-1} = 0.1$	±5%
No band	---	---------	±20%

For a 4 band resistor calculation of resistance is as follows
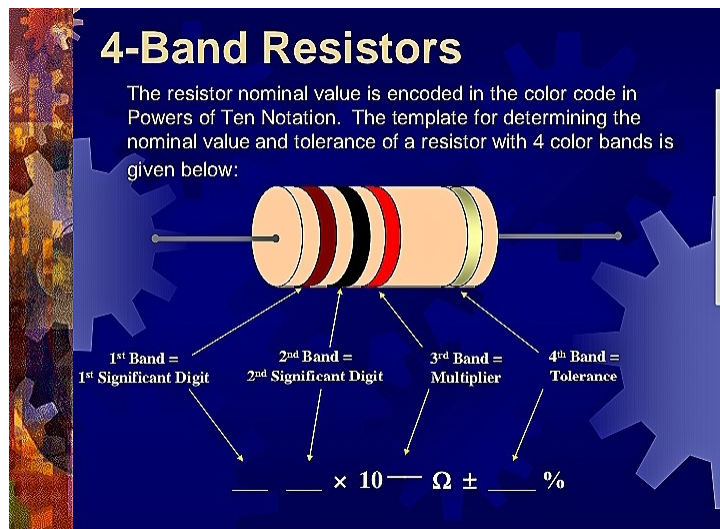
For a 5 band resistor calculation of resistance is as follows.
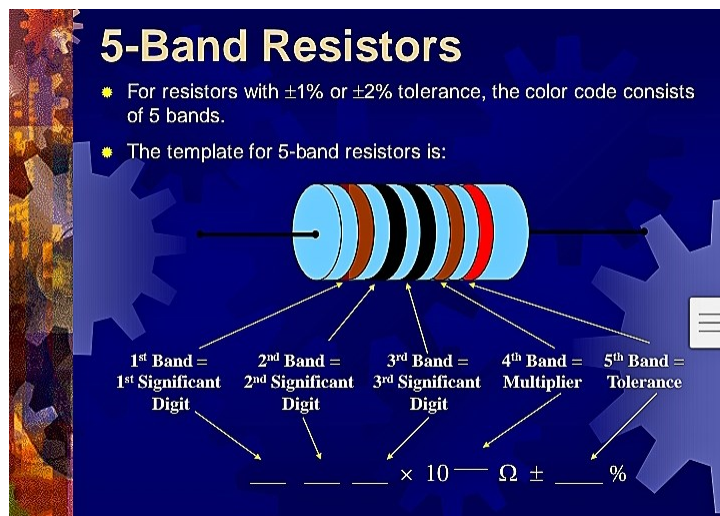
The program will use appropriate functions to calculation the resistance from the user's input .

1.Problem Statement.

The problem is to develop a program that calculates the resistance of a resistor based on its color bands. Resistors are electronic components that are used to resist the flow of electric current in a circuit. The resistance value of a resistor is indicated by its color bands, which are arranged in a specific order. The proposed program will take as input the color bands of a resistor and output the resistance value in ohms.

2.Objectives.

The objectives of this project are:

-To develop a C program that calculates the resistance of a resistor based on its color bands
-To provide an easy-to-use interface for the user to input the color bands of a resistor
-To validate the user input and provide error messages if necessary
-To output the resistance value of the resistor in ohms
-To test the program with various inputs and ensure the correctness of the output

3.Methodology.

The proposed program will use the following methodology:

-The user will be prompted to input the color bands of the resistor
-The program will validate the user input and provide error messages if necessary
-The program will then calculate the resistance value of the resistor based on the color bands using a lookup table or algorithm
-The calculated resistance value will be output in ohms

4.Scope.

The proposed program will be able to calculate the resistance of a resistor with up to 5 color bands. The program will support both 4-band and 5-band resistors. The program will also validate the user input to ensure that the input is valid.

We intend to employ knowledge on.
  -If statementz
  -While loops
  -Declaration of functions
  -Declaration of variables
  -Promoting user inputs
  -Returning output
  -Handling errors.

5.Deliverables.

The following are the deliverables of this project:

-A C program that calculates the resistance of a resistor based on its color bands
-A user manual that explains how to use the program and provides examples

-A testing document that outlines the test cases used to validate the program and the results of the tests

6.Timeline.

The proposed timeline for this project is as follows:

-Week 1: Research and design
-Week 2-3: Implementation and testing
-Week 4: User manual and final testing
-Week 5: Final documentation and submission

7.Conclusion.

The proposed program will provide an easy-to-use interface for calculating the resistance of a resistor based on its color bands. The program will be tested with various inputs to ensure its correctness and accuracy. The deliverables of this project will be a C program, a user manual, and a testing document. The proposed timeline for this project is 5-6 weeks, and there is no budget required.