Project Development Paper
C. A. Ybarra
CSC 414
17 November 2020

Contents

1.0 Introduction.

The purpose of this program is to take user input to provide the rating information for a resistor based on its color code. The user will be given the option to access a menu containing a list of colors. If the user chooses not to access the menu, the program will close. If the user chooses to access the menu, the user will be given instructions to choose a color from the menu corresponding with band on the resistor. As each of the bands has been assigned a color, a text message will appear on the screen informing the user of the resistor rating information, based on the color selections provided by the user.

2.0 References

(1) S. Gibilisco, "B Resistor Color Codes", in *Beginner's Guide to Reading Schematics, 4th Edition*, USA: McGraw-Hill Education, 2018, pp195-197.

3.0 Requirements

1. The program shall provide the user a choice to access the main menu.
2. The main menu shall provide options representing of each possible color that may be identified on a resistor.
3. The program shall provide a numerical representation of the value of the resistor being evaluated, based on the user input.
4. The program shall provide the tolerance information of the resistor being evaluated, based on the user input.
5. The program shall provide a value representing the change in resistance that is possible during the first 1000 hours of use, based on the user input.

4.0 Design

This design will utilize the following resources and tactics to achieve the intended purpose:

1. Basic repetition loops to capture the physical description of each color band located on the resistor.
2. If statements to ensure proper response for each color identified on the resistor.
3. Pre-defined and user-defined functions, to simplify and modularize operations to keep the program neat and easy to read.
4. Use of self-identifying variables and commenting less obvious functions and variables, to prevent confusion and to facilitate ease of maintenance.
5. Use of basic math operations to evaluate and provide accurate resistor information.

5.0 Test plan

Appendix

i Test results document with findings for initial build.

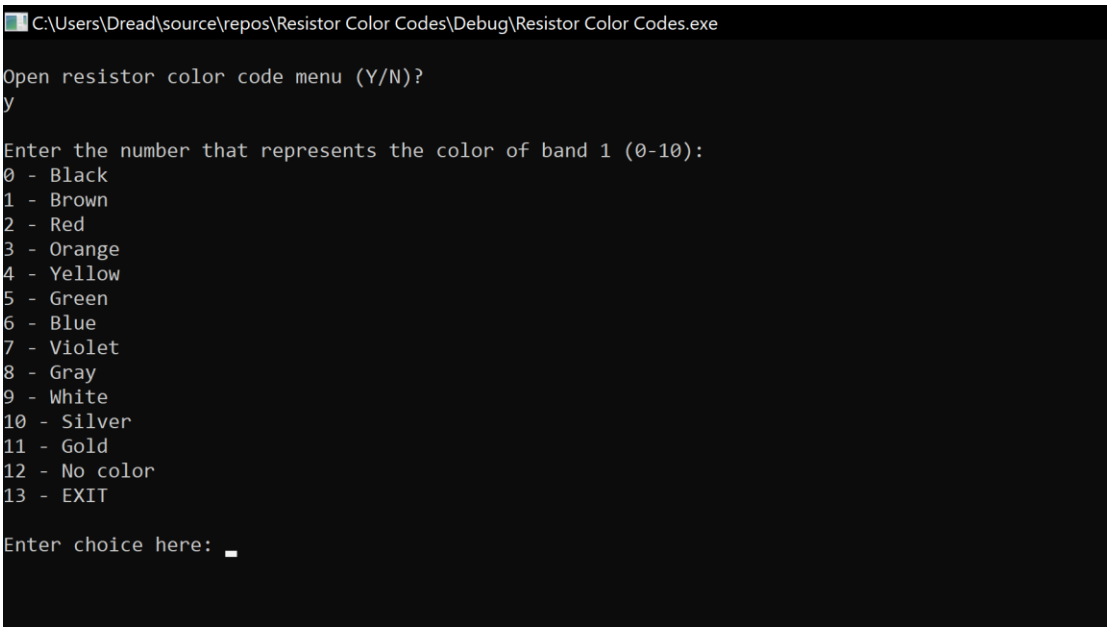
Test Results for Project Development Paper

C. A. Ybarra

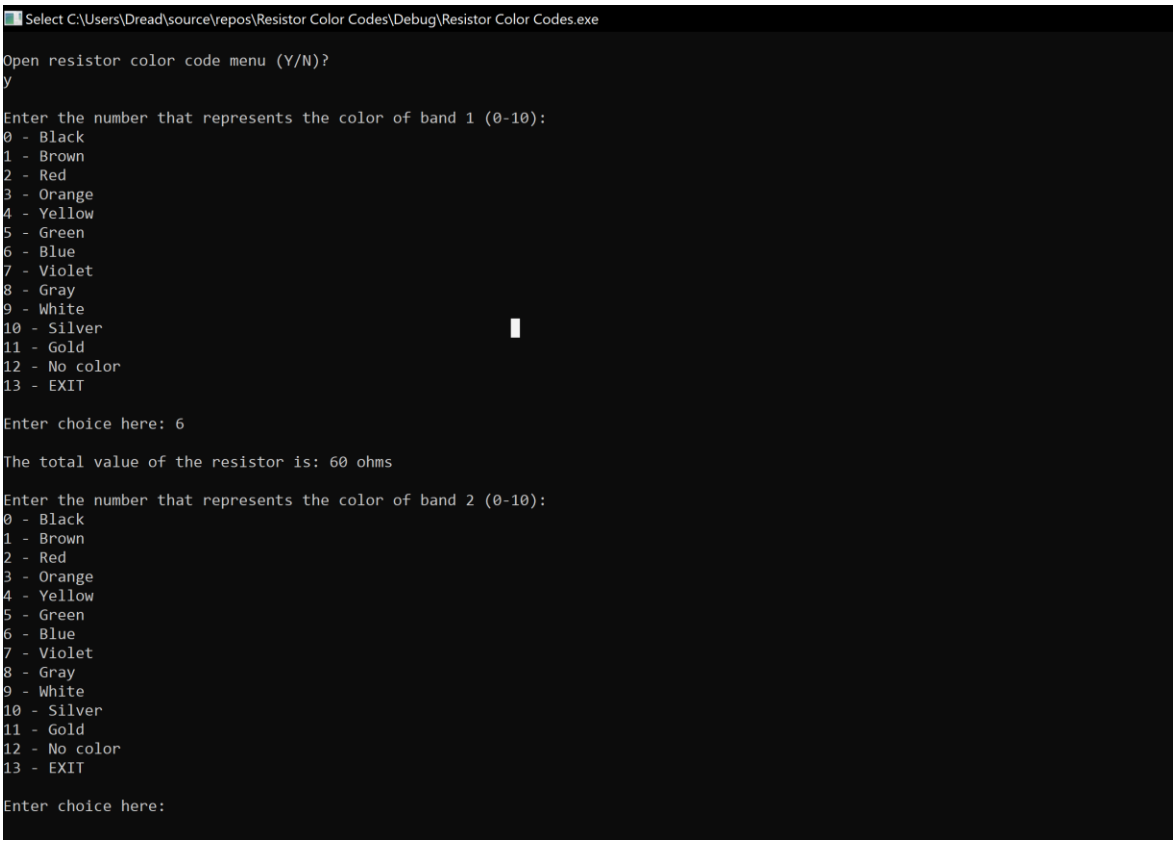
CSC 414

17 November 2020

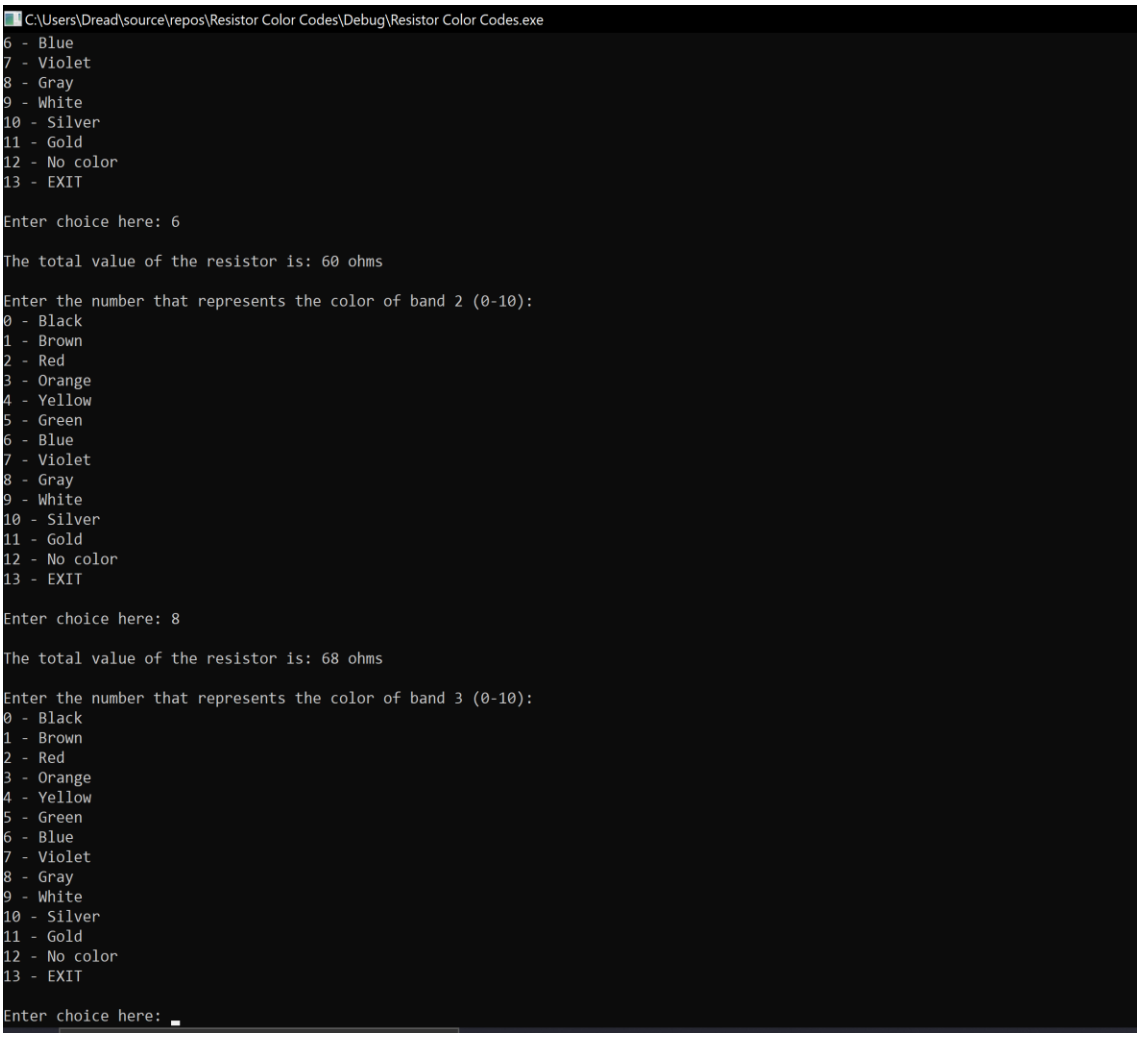
1. Test: Menu access test, to view menu and select option 1.
   Result: (1) Typing 'y' opens menu as expected.



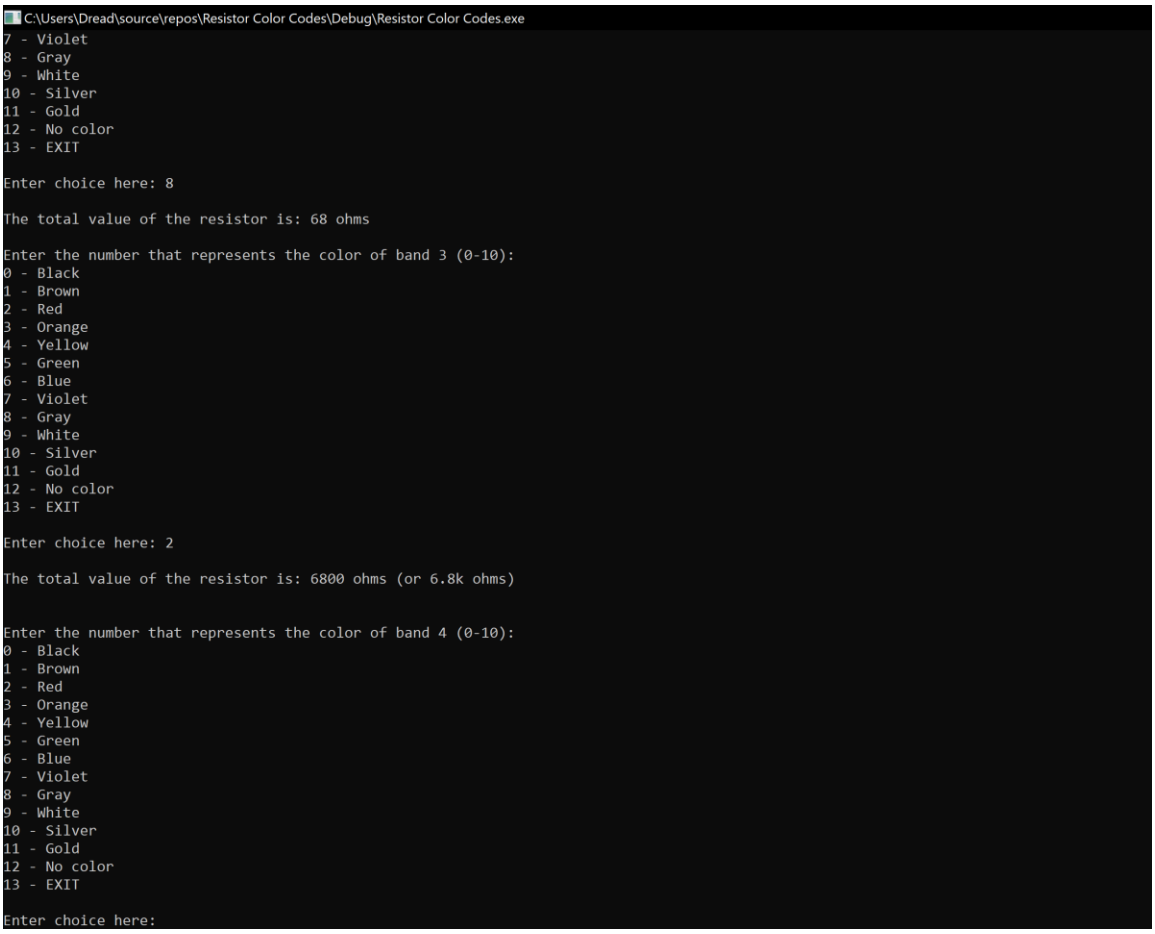
2. Test: Menu access test, to view menu and select option 6.
Result: (1) Option 6 is selected to identify the color of the first band, and the current total resistance is shown. The menu then refreshes offering the user an opportunity to assign a color to the second band on the resistor. As expected.
Feedback: Consider modification that would allow the total resistance to be displayed only after all input has been received and totaled.



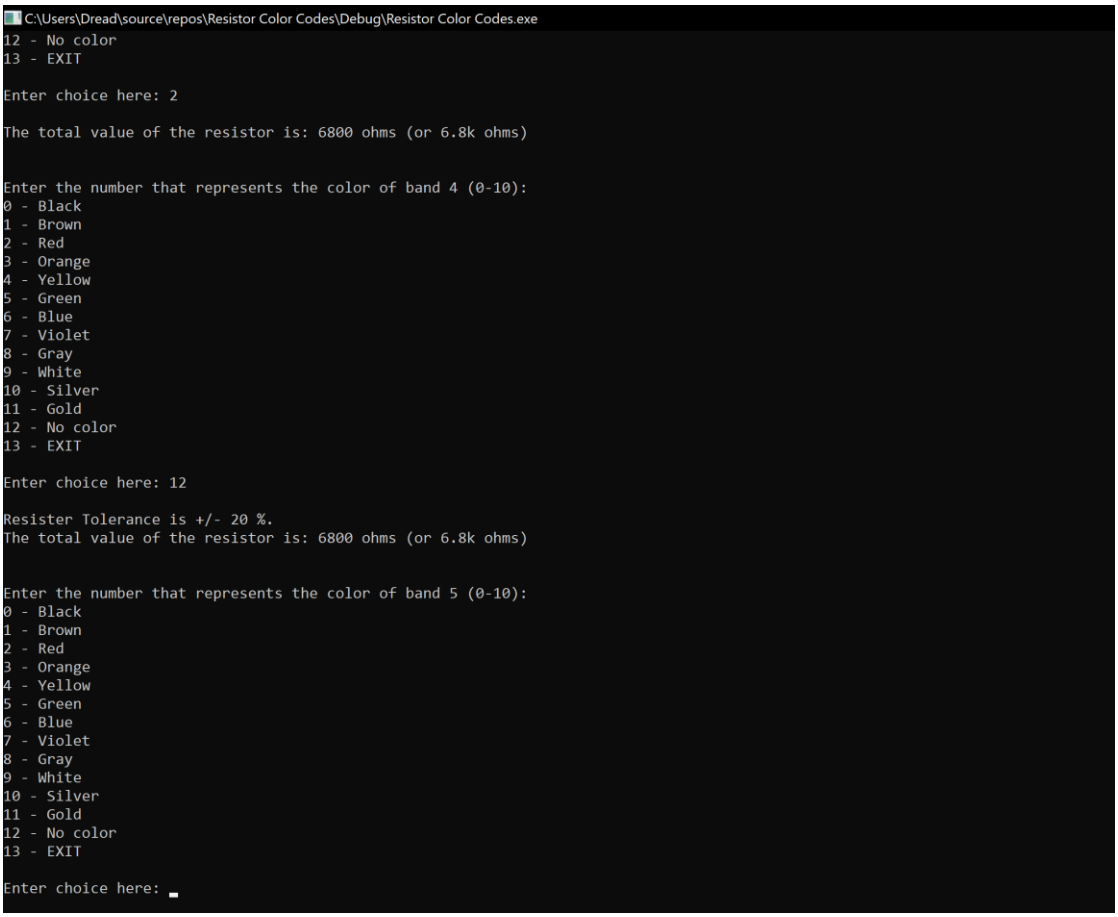
3. Test: Menu access test, to view menu and select option 8.
Result: (1) Option 8 is selected to identify the color of the second band, and the current total resistance is shown. The menu then refreshes offering the user an opportunity to assign a color to the third band on the resistor. As expected.
Feedback: Consider modification that would allow the total resistance to be displayed only after all input has been received and totaled.



4. Test: Menu access test, to view menu and select option 2.
Result: (1) Option 2 is selected to identify the color of the third band, and the current total resistance is shown. The menu then refreshes offering the user an opportunity to assign a color to the fourth band on the resistor. As expected.
Feedback: Consider modification that would allow the total resistance to be displayed only after all input has been received and totaled.



5. Test: Menu access test, to view menu and select option 12.
Result: (1) Option 12 is selected to identify the color of the fourth band, and the tolerance is shown with the current total resistance. The menu then refreshes offering the user an opportunity to assign a color to the fifth band on the resistor. As expected.
Feedback: Consider modification that would allow the tolerance to be displayed with the total resistance only after all input has been received and totaled.



6. Test: Menu access test, to view menu and select option 4.
Result: (1) Option 4 is selected to identify the color of the fifth band, and the change of resistance is shown with the current total resistance. The menu then refreshes offering the user an opportunity to exit the menu, or start all over again. As expected.
Feedback: Consider modification that would allow the change of resistance to be displayed with the total resistance only after all input has been received and totaled.