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Project 1

Mastermind

Directions

Mastermind is ultimate game of logic. The game starts with a computer generating four random colors. Begin by trying to guess the correct pattern. After each guess you will be hinted on the number of colors that were correct and in the right position. You will also be hinted on the number of colors that you entered that were correct but in the wrong spot. In this game you will be given 7 tries to get the correct sequence. Good luck!

Pseudocode

Main

1. Declare Variables
2. Create 4 variables to convert random colors input to integer
3. Create an array variable for the random numbers/colors generated
4. Create an array variable for the users guesses
5. Create a variable that inputs users decision to play again
6. Create a variable to count number of user guesses and initialize it to zero
7. Call function to display instructions and begin program.
8. Call RNG function to generate the correct sequence
9. Range the random numbers 1-5
10. Assign each random number to the array “Correct”
11. Convert each random number to a character labeled as a color with the function
12. Call function call to output for user to start guessing
13. Input each user guesses into array “Guess”
14. Call function determine how many are correct
15. Call function to determine how many are the right color but in wrong position
16. Break out if user wins
17. Create a counter for user guesses
18. Add 1 to counter after each user guess input
19. Limit user guesses to 7
20. Determine if user wins
21. If user loses output correct sequence
22. Prompt user to play again
23. Exit Stage Right

Functions

1. Create a function to display instructions
2. Create a function to get user input
3. Prompt user to enter guesses and convert lower case entries to uppercase
4. Create a function with a switch menu to convert inputs to characters

a. Return each character

1. Create a function to check which guesses are correct color and in correct position
2. Create another function to determine if color is correct but in wrong position

Project Summary

The project took about a week and a half and was rather difficult for me. From my previous knowledge of taking this course last semester, I assumed using a couple of arrays would be best for my code even though we haven’t covered them yet. I also implemented everything we have covered so far.

* Data types int, bool ,char etc
* Void functions and functions that return data
* Arrays were also implemented
* Static casting to other data types
* ASCII table was implemented to convert uppercase to lowercase inputs
* Random function
* Time function
* If statements and if else statements
* Counter controlled loops
* Do while loops
* While loops
* Switch statement
* Modulus function

The code and flow chart were submitted separately inside the folder.