Project 1

Title:

Mastermind

Course:

CSC-7

Section:

45012

Due Date:

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Author:

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Mastermind Explained:

This project was done to remake the mastermind game, which is a codebreaking game. In the game you are to guess a code of 4-8 colors. This project utilizes letters instead of colors due to the c++ implementation, and it allows you to specify the parameters of the code such as it being 4-8 letters long, taking from a pool of 6-8 letters, and allowing duplicate letters to appear. You are given 10 guesses to find the code, and after each guess you receive info on how many of the letters were right but in the wrong spot and how many were right and in the right spot. Using this info you can eventually deduce what the code is.

Program Length:

The program contains 229 lines of code. It holds 7 functions including main.

Program functionality:

The program starts in main and declares a random seed for the random number and then calls the menu function.

The menu function outputs information on the game and prompts the user if they want to start a new game, this can run on as long as the user wants to continue. If they want to continue, it calls the game function.

The game function handles the games operations, it declares all the variables that store info on the game session. It will first call the setting function to initialize the pool of letters, the length of the code, and whether or not duplciates are allowed. The game function will then initialize the guess array and call the genCode function to generate a code for the game based on the settings parameters. Once the code is generated, the game function will run a loop that lasts until there are no moves left or the player cracks the code, outputting the board and calling the getGuess function to get the player's guess, and the checkGuess function to see the results of their guess. The board will output how many right letters with wrong spots and how many right letters with right spots the player got for each guess. Once this loop is over, the game function will end with outputting the final board and a message depending on the win condition.