Mastermind

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Table of Contents

**Introduction**

Title: Mastermind

Mastermind is a basic code-breaking game. The game was originally created for two players, but throughout time people have played Mastermind by themselves. This game can be played by people from ages eight and up. The game was created in the process of developing security applications. This game requires a lot of logic, and the level of difficulty is fairly decent. The game consists on breaking a 5-color code in less than twelve attempts. The code is randomly generated and is capable of creating more than 1000 distinct codes. The way the player has to decipher the code requires a lot of thinking which inspired me to write the code of this game.

**How the Mastermind works**

**Objective of the Game**

Break the 5-color code in twelve attempts or less.

**Rules of the Game**

Mastermind can be a single player game or a multi-player game.

Single player rules:

1. Input a 5-color code guess with respect to its shortcuts. (Ex.: for Red input ‘r’ or ‘R’).
2. Keep repeating the first step until you manage to decipher the code.
   1. Hints will be given every time you input a new 5-color code guess.

Multi-player rules:

1. The first player has to input a 5-color code guess with respect to its shortcuts. (Ex.: for Red input ‘r’ or ‘R’).
   1. Hints will be given every time you input a new 5-color code guess.
2. If the first player didn’t guess the code correctly, then the second player has the chance to guess the 5-color code.
3. Keep repeating steps 1 and 2 until someone wins, or no one manages to decipher the code in twelve attempts (cumulative).

**Summary**

When I wrote this program, I tried to make it as simple as possible. My main goal was to make the code readable, and user friendly. At the beginning, I wrote the program as easy as possible. My first goal was to make it work, but when I finished it and had accomplished my goal the program looked very messy. I created many versions of Mastermind, and every time I tried implementing something new to the code. My second version of my Mastermind, I transformed most of the original code into functions. For my third version, I changed many variables and created various arrays. …. This program took me 3-4 days to complete it. Even though, I believe that are a lot of things I can improve on. This program helped me learn to use arrays and to be creative with my coding.

**Pseudocode**