CSC 110: Introduction to Computer Programming, Project 4 - 25 pts

Project Goals:

- Utilize control structures.
- Practice incorporating graphics into programming.
- Experience with maintenance/improvement step in development.
- Have some FUN!!!

Mastermind Game

Write code to play the game of Mastermind against the computer (computer should generate code, then user works to guess the code).

Part 1-The Game:

Functional game that user plays against the computer, using string input and output (for example ggrb = Green, Green, Red, Blue as input and 1BK 2WH means 1 black and 2 white as output). Use at least six colors for the code. Ask for information about game rules or search online for description of game play. The program should terminate after 8 (or 10) turns, or when the code is discovered, and should inform the player of the secret code and whether they were victorious or not. **[10 pts]**

Part 2-GUI:

Incorporate a GUI (Graphical User Interface) for both the input and the output of the game. Half the points in this part are for generating the game board, the other half for incorporating it with the playing of the game in **Part 1.** Search for *Mastermind Game Images* to see examples of both on-line and physical game boards-particulars are up to you but boards should be functional for game play. **[10 pts]**

Part 3-Maintenance & Improvements:

Add modifications/improvements to your code. The specifics are up to you, but could include improved or special graphics (YOU WIN!!! Confetti!!), ability to play additional games, 1-player or 2-player options, choose the number of turns, choose the length of the code, add additional colors, add an option to restrict/allow duplicates, etc. **[5 pts]**

Project should be submitted as a .py file on Canvas. (If GUI is not incorporated into Part 1, then you will need to submit two separate files).

Please go online or ask if you have questions about the rules for the game.