Project: Mastermind Game

Requirement Analysis:

Description:

Mastermind is a code-breaking game for two players. Game is played between two players, one is codemaker and codebreaker. CodeMaker sets the code while codebreaker breaks that code with minimum possible number of guesses.

Rules:

- The two players decide in advance how many games they will play, which must be an even number.
- One player becomes the *codemaker*, the other the *codebreaker*.
- The codemaker chooses a pattern of four code pieces. Duplicates are allowed, so the player could even choose four code pieces of the same color.
- The codebreaker tries to guess the pattern, in both order and color, **within twelve turns.**
- Each guess is made by placing a row of code pieces on the decoding board.
- Once placed, the codemaker provides feedback by placing from zero to four key codes in the small holes of the row with the guess. A code 'X' is placed for each code pieces from the guess which is correct in both color and position. A code '0' the existence of a correct color code piece placed in the wrong position.
- If there are duplicate colors in the guess, they cannot all be awarded a key code unless they correspond to the same number of duplicate colors in the hidden code.
- Once feedback is provided, another guess is made; guesses and feedback continue to alternate until either the codebreaker guesses correctly, or twelve incorrect guesses are made.
- The codemaker gets one point for each guess a codebreaker makes. An extra point is earned by the codemaker if the codebreaker doesn't guess the pattern exactly in the last guess. The winner is the one who has the most points after the agreed-upon number of games is played.