

## **Python Task 1**

### **Mastermind Game**

#### **Rules of the game (2 Player Version):**

1. One player writes down a secret 4-digit number.
2. Then, the other player tries to guess the number.
3. After each guess, the person that has written down the secret number, tells them how many digits are correct and in the right position and how many digits are correct but in the wrong place.
4. Players keep making guesses until they are able to guess the 4 digit number correctly.
5. There can be a limit the number of guesses the 2nd player can have.

#### **Your Task - Design the above game in python with the following specifications**

1. The program should generate a random 4 digit number at the start
2. The player starts with 20 points
3. On each turn, the program asks for a number from the user.
4. After taking input, the program displays the digits that are correct and in the right position and how many digits are correct but in the wrong place. Also display the which digits are in correct position
5. Program ends when
  - a. The numbers of guesses reaches a number (Say 10) or
  - b. The player guesses the number correctly
6. For each correct guess +5 points are given and for each incorrect guess -2 points are given.
7. On completion, Score for the user should be displayed and options to play again should be provided.

#### **Notes:**

- Program must be fully function based
- Code should not be plagiarized

## Example Program Run

**\*\* Assume Random Number Generated is 1234 \*\***

Guess a Number : 2349 (Player Input)

Output -

3 digits : [2, 3, 4] guessed correctly. 3 in the wrong position.

Turns remaining - 9

Guess a Number : 1235 (Player Input)

Output -

3 digits : [1, 2, 3] guessed correctly. 3 in the correct position.

Turns remaining - 8

Guess a Number : 1234 (Player Input)

Output -

All Digits in the Correct Place.

You have won the game!!

Your Score : 21

Do you want to play again?