Mastermind Game

Please implement a mastermind game, which can be played by a user "against" the computer. This is a game where a player tries to guess the number combinations. At the end of each attempt to guess the 4 number combinations, the computer will provide feedback whether the player had guess a number correctly, or/and a number and digit correctly. A player must guess the right number combinations within 10 attempts to win the game.

Game rules

- At the start of the game the computer will randomly select a pattern of four different numbers from a total of 8 different numbers.
- A player will have 10 attempts to guess the number combinations
- At the end of each guess, computer will provide one of the following response as feedback:
    - The player had guess a correct number
    - The player had guessed a correct number and its correct location
    - The player's guess was incorrect

Example Run:
Game initializes and selects "0 1 3 5"
Player guesses "2 2 4 6", game responds "all incorrect"
Player guesses "0 2 4 6", game responds "1 correct number and 1 correct location"
Player guesses "2 2 1 1", game responds "1 correct number and 0 correct location"
Player guesses "0 1 5 6", game responds "3 correct numbers and 2 correct location"

…

**Note that the computer's feedback should not reveal which number the player guessed correctly

User Interface

Any type of user interface is acceptable (command line, mobile app, web page etc) but the player must have a way of interacting with your game including:

- Ability to guess the combinations of 4 numbers
- Ability to view the history of guesses and their feedback
- The number of guesses remaining is displayed

Implementation

- Use Random generator API (https://www.random.org/clients/http/api/) to randomly select 4 numbers from 0 ~ 7 (Duplicate numbers are allowed)
- You can choose whichever combination of programming languages, tools, frameworks, and libraries you find appropriate within reason (e.g. you can't use a game framework that implements Mastermind)

API Integration

Please use Random Number Generator API to generate the number combinations.

Integer Generator API

https://www.random.org/integers

Method	Response	Example
GET	A plain text response, with one integer per line. (if **col** parameter is set to 1 and **format** is set to plain)	0 3 1 2

Parameters
Use the following values to make a call to the API (https://www.random.org/clients/http/api/) Although it's not required, you may want to implement the code generator using the recommended parameter values for simplicity.

URL Parameter	Recommended Value	Purpose
num	4	Number of integers requested
min	0	The smallest value returned
max	7	The largest value returned
col	1	Number of columns used to display the returned values
base	10	Use base 10 system
format	plain	Returns response in a plain text.

rnd	new	Generate a new random numbers

Extension

Apart from the above requirements, everything else is up to you. We also encourage you to think of these requirements as a starting point, and just use your creativity/imagination to expand the game in any way that you want to showcase your talents and passion for programming. Sample extension ideas include:
- Add support to give hints
- Add a configurable "difficulty level" and adjust the number of numbers that are used
- Extend to multi-player
- Keep track of scores
- Add a timer for the entire game, or each guess attempts
- Anything else that you come up with to make the game more fun/interesting that demonstrates your backend potential!

Submission

Please make sure your project contains a README.md. This README should explain how an interviewer could run your code, document your thought process and/or code structure, and describe any creative extensions attempted or implemented. There is no prescribed format for the README, but it should be clear and unambiguous in listing all the steps in building, running, and playing the game you built (you should make no assumptions about what software the interviewer has, and err on the side of being explicit). Your interviewers will be engineers, so you can assume a certain level of technical ability as relates to installing what your project requires. Please create a new public repository in Github and provide the link to your recruiter with **REACH@linkedin.com** copied

If submitting through Github is not an option for you, please reach out to your recruiter for an alternative solution.