Question 1 - Tic Tac Toe

Problem Statement

1. Program a game of Tic -Tac- Toe in Python. The game is played on a three by three board.
2. The game will only be **text output** based, i.e. no GUI will be shown to the user. Instead, it will use print statements to display the position of a particular player, end results etc.
3. There are only **2 players** in the game and no spectators are allowed.
4. The program should set up the game by asking for the names of the players. Player one should be assigned an 'X' as their marker, player two should be assigned the 'O'.
5. Each player has a marker. One player has an 'X', the other an 'O'.
6. The game consists of 2 modes: **Auto mode and manual mode**.

   For auto mode, a player will type **mark** and a random number will be generated imitating the computer's chance by generating a number between 1-9 (excluding the places occupied by the other player).
7. For a manual mode, instead of entering mark, players can enter **any number between 1 and 9** and that particular number will imitate their chance.
8. You are free to use any data structure to present the board and take input from players accordingly. (Do mention the input format).
9. Players alternate turns to place their marker on the board. The first player to get three in a row either diagonally, horizontally, or vertically, wins the games.
10. In the event all squares are taken on the board without a winner then it is a tie.
11. After the game has been completed, the program should congratulate the winner by name.

12. The players should then have the option to play again or quit to exit the game.
13. If any player enters "quit" during the game, the game ends and the other player wins automatically.
14. You may not assume that any input the user provides you is initially valid.

Concepts required:

- List, Tuple, Dictionary
- OOPS
- Random number generation
- Iterations, conditional statements and functions

Libraries allowed:

- Random
  Use this link to know more about random number generators.

That's it. You are not allowed to use any other library for this assignment.
So now hop in and get ready to turn your ideas to code.

Evaluation will be done on the basis of **completion of project**, **code quality**, **handling of test cases** etc.

Try to keep your code as structured as possible. Use of classes, objects and functions is definitely a plus point.

Feel free to reach out to your POD Leads for any clarification.

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