**Name: Sundas Shoukat**

**Roll No. 057**

**Section: BSDS-3A**

**Tic Tac Toe Game in Python**

**Introduction**

This project is about the famous game **Tic Tac Toe**. It is a two-player game where one player uses **X** and the other player uses **O**. The game is played on a **3 by 3 board** and the goal is to make a straight line (row, column, or diagonal).  
In this Python program, both players play turn by turn until someone wins or the game ends in a draw.

**How the Program Works**

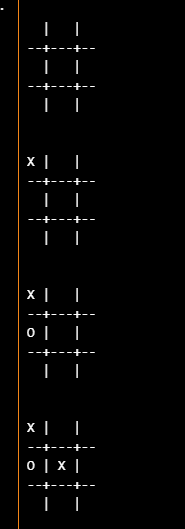
1. **Board Setup**  
   At the start, the board is empty. We use a list of 9 spaces to represent the 9 boxes of the Tic Tac Toe board.
2. **Showing the Board**  
   A function is made to display the board in 3 rows and 3 columns. This helps players to see their moves clearly after every turn.
3. **Player Turns**  
   The game starts with player **X**. Each player is asked to enter a number from **0 to 8** which shows the position on the board.
   * 0 means top-left corner
   * 8 means bottom-right corner
4. **Placing Marks**  
   If the chosen position is empty, the program puts **X** or **O** in that place. If the position is already used, then ask player to try again.
5. **Checking Winner**  
   After every move, the program checks if the player has won.  
   A player wins if:
   * They fill any row with the same symbol.
   * They fill any column with the same symbol.
   * They fill any diagonal with the same symbol.
6. **Changing Turn**  
   If no winner is found, the turn changes to the other player.  
   For example, if it was X turn, then next it will be O turn.
7. **Draw Condition**  
   If all 9 boxes are filled and no player wins, then the game ends with a draw.

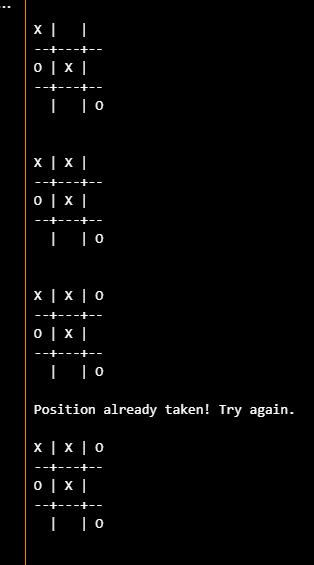
**Why This Program Works**

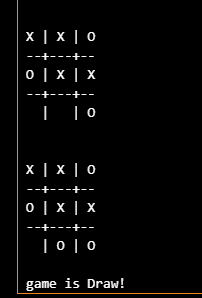
This program works because it follows the real rules of Tic Tac Toe:

* It shows the board to the players.
* It takes input from the players step by step.
* It checks after every move if anyone has won.
* It allows players to play fairly by not letting them overwrite already used places.
* It gives correct result in the end (win or draw).

**Tic Tac Toe game output**

****

****

****