Tic-Tac-Toe Python Project Report

Introduction

The game of Tic-Tac-Toe is an example of a simple task which can be programmed in Python by a beginner.

Atypical Loops, Functions, Conditional statements and Lists are the main features of Python language that are illustrated in the project to have a working game.

Project Overview

Tic-Tac-Toe is a classic game played on a 3×3 grid between two players. Player X and Player O take turns

We first prompt the users to select the grid positions on 3×3 by entering numbers between 1 and 9. The cell is then put in

The board is updated after every input, and the program verifies a player's win.

Core Concepts Used

1. Lists: The 3×3 board is a list of 9 elements.

2. Functions: Employ to show the board and find the winners.

3. Conditionals: Ensure that moves are legit, identify winners, and take care of games that end in a draw.

4. Loops: There can be a maximum of 9 turns, thus the game may loop 9 times. Someone may also win before that.

After the game is initialized, the board is empty. The players decide which numbered position is going to be their move. The

The Program assures the move is legal, and hence the board is updated. It checks all possible winning combinations.

If none of the combinations satisfy the winning condition and the board is full, the result is a draw.

Logic to Win

The program checks eight different sequences of cells that might bring victory:

- Three rows

- Three columns

- Two diagonals

- i.e., any three cells which contain the same symbol, X or O, are sufficient to declare that player the winner.

Conclusion

This Tic Tac Toe project is a demonstration of how simple concepts can be used to create a

working game which solves the problem. It is a good pool of exercises for programming novices and may be developed further

by adding features like AI player, GUI, scoreboard, etc.