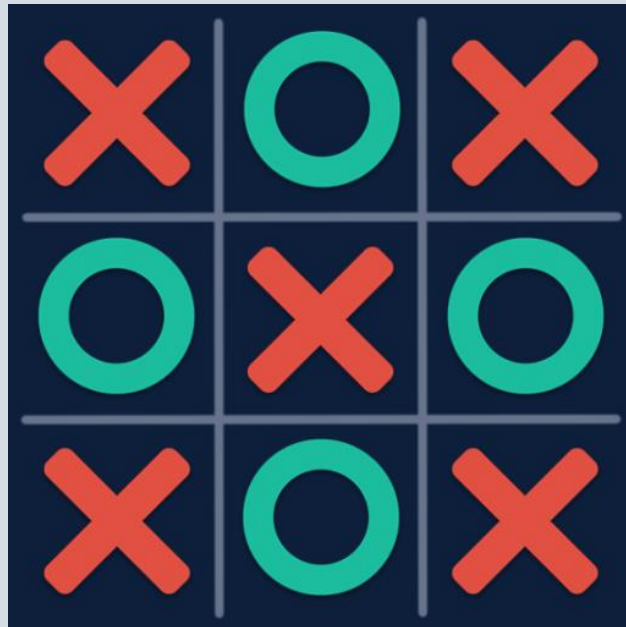


Machine Learning

MINOR PROJECT

TIC TAC TOE GAME



Sandeep Talla

9381763068

sandeeptalla3333@gmail.com

Abstraction

The Tic-Tac-Toe Game implementation is a python based project that recreates the classic game of Tic-Tac-Toe, also known as known as “Noughts and Crosses.”

This project provides a digital platform for two players to engage in the timeless game, taking turns to place their symbols (“X” or “O”) on a 3x3 grid.

Introduction

In the digital age, classic board games like Tic Tac Toe have found a new home on our screens. This project presents a digital adaptation of the timeless Tic-Toc-Toe, also known as “X” or “O” game.

The primary aim of this project was to develop a user-friendly, interactive game. The objective is to achieve before a winning combination of symbols either horizontally, vertically, or diagonally before the opponent or to reach a draw if the grid is fully occupied.

Implementation

The project was written using basic functionality of python language code like Iterations, Functions, Exception Handling, etc.....

Python Code

```

Welcome  Tic-Tac-Toe-Project.py
Tic-Tac-Toe-Project.py
1  print("-----: Tic Tac Toe Game :-----")
2
3  board = []
4
5  for i in range(9):
6      board.append(" ")
7
8  # print(board)
9
10 def struct_board():
11     print(" "+ board[0] + " | " + board[1] + " | " + board[2] )
12     print("---|---|---")
13     print(" "+ board[3] + " | " + board[4] + " | " + board[5] )
14     print("---|---|---")
15     print(" "+ board[6] + " | " + board[7] + " | " + board[8] )
16
17 # struct_board()
18
19 def player_win(player):
20     for i in range(0, 9, 3):
21         if board[i] == board[i+1] == board[i+2] == player:
22             return True
23
24     for i in range(3):
25         if board[i] == board[i+1] == board[i+2] == player:
26             return True
27
28     if board[0] == board[4] == board[8] == player:
29         return True
30     if board[2] == board[4] == board[6] == player:
31         return True
32
33     return False
34
```

```

34
35 # player = "X"
36
37 player = input("Choose your symbol (X or O) : ").upper()
38
39 while player not in ("X", "O"):
40     print("Please enter valid input..!")
41     player = input("Choose your symbol (X or O) : ").upper()
42
43 opponent = "X" if player == "O" else "O"
44
45
46 print("\n Tic Tac Teo Board Structure..! \n")
47 # struct_board()
48
49 while True:
50
51
52     struct_board()
53
54     move = input(f"Player {player}, Enter Your move (1-9) : ")
55
56     try:
57         move = int(move)
58
59         if move < 1 and move > 9 or board[move-1] != " ":
60             print("Plase enter valid move..!")
61             # return True
62             continue
63
64     except ValueError:
65         print("Invalid input, Please try to entered input (1-9)")
66
67     board[move-1] = player
68
69     if player_win(player):
70         struct_board()
71         print(f"The game was ended succesfully, Player {player} wins the game..!")
72         break
73
74     if " " not in board:
75         struct_board()
76         print("The game was drawn by effects of users..!")
77         break
78
79     # player = "O" if player == "X" else "X"
80     player, opponent = opponent, player
81
82
83
84
85

```

Code Explanation

- The code implementation starts with game board initialization as a 3x3 grid filled with empty spaces.
- Then after we see **struct_board()** is used to display the current state of the board on the console. It prints each row of the board with vertical bars "|" separating the cells and horizontal lines "-" for separation between rows.
- The **player_win()** function checks if a player won the game or not. By examining the rows, columns and diagonals. It returns **True** if the player won the game otherwise **False**.
- After taking user input the **main loop (While)** was executed continuously until there is a winner or a tie. In each iteration, it displays the current state of the board, gets the current player's input, updates the board with the player's move, and checks for a win or a tie. If

there's a win or tie, the game loop exits, and the result is displayed.

Result

The image shows the output of the game. The player X won the game.

```
-----: Tic Tac Toe Game :-----
Choose your symbol (X or O) : x

Tic Tac Teo Board Structure..!

  |  |  |
--|--|--
  |  |  |
--|--|--
  |  |  |
Player X, Enter Your move (1-9) : 1
  X  |  |
--|--|--
  |  |  |
--|--|--
  |  |  |
Player O, Enter Your move (1-9) : 2
  X  | O |
--|--|--
  |  |  |
--|--|--
  |  |  |
Player X, Enter Your move (1-9) : 5
  X  | O |
--|--|--
  |  X  |
--|--|--
  |  |  |
Player O, Enter Your move (1-9) : 3
  X  | O | O
--|--|--
  |  X  |
--|--|--
  |  |  |
Player X, Enter Your move (1-9) : 9
  X  | O | O
--|--|--
  |  X  |
--|--|--
  |  |  X
The game was ended succesfully, Player X wins the game..!
```

Thank You