

Program 12

Tic Tac Toe Problem

AIM :

To Create a python program to find a solution to the tic tac toe problem

PROGRAM :

```
import os
import time

board = [' ',' ',' ',' ',' ',' ',' ',' ',' ',' ']
player = 1

# Win Flags
Win = 1
Draw = -1
Running = 0
Stop = 1

Game = Running
Mark = 'X'

def DrawBoard():
    print(" %c | %c | %c " % (board[1], board[2], board[3]))
    print("____|____|____")
    print(" %c | %c | %c " % (board[4], board[5], board[6]))
    print("____|____|____")
    print(" %c | %c | %c " % (board[7], board[8], board[9]))
    print(" | | ")

def CheckPosition(x):
    if board[x] == ' ':
        return True
    else:
        return False

def CheckWin():
    global Game

    if board[1] == board[2] and board[2] == board[3] and board[1] != ' ':
        Game = Win
    elif board[4] == board[5] and board[5] == board[6] and board[4] != ' ':
        Game = Win
    elif board[7] == board[8] and board[8] == board[9] and board[7] != ' ':
```

```

        Game = Win
    elif board[1] == board[4] and board[4] == board[7] and board[1] != ' ':
        Game = Win
    elif board[2] == board[5] and board[5] == board[8] and board[2] != ' ':
        Game = Win
    elif board[3] == board[6] and board[6] == board[9] and board[3] != ' ':
        Game = Win
    elif board[1] == board[5] and board[5] == board[9] and board[5] != ' ':
        Game = Win
    elif board[3] == board[5] and board[5] == board[7] and board[5] != ' ':
        Game = Win
    elif board[1] != ' ' and board[2] != ' ' and board[3] != ' ' and \
        board[4] != ' ' and board[5] != ' ' and board[6] != ' ' and \
        board[7] != ' ' and board[8] != ' ' and board[9] != ' ':
        Game = Draw
    else:
        Game = Running

print("Tic-Tac-Toe Game Designed By Sourabh Somani")
print("Player 1 [X] --- Player 2 [O]\n")
print()
print()
print("Please Wait...")
time.sleep(3)

while Game == Running:
    os.system('cls')
    DrawBoard()

    if player % 2 != 0:
        print("Player 1's chance")
        Mark = 'X'
    else:
        print("Player 2's chance")
        Mark = 'O'

    choice = int(input("Enter the position between [1-9] where you want to mark: "))
    if CheckPosition(choice):
        board[choice] = Mark
        player += 1
        CheckWin()

    os.system('cls')
    DrawBoard()

    if Game == Draw:
        print("Game Draw")

```

```
elif Game == Win:
    player -= 1
    if player % 2 != 0:
        print("Player 1 Won")
    else:
        print("Player 2 Won")
```

OUTPUT:

```
Player 1's chance
Enter the position between [1-9] where you want to mark: 4
X | O | 
|  |  | 
X |  | 
|  |  | 
|  |  | 
X | O | 
|  |  | 
X |  | 
|  |  | 
|  |  | 
Player 2's chance
Enter the position between [1-9] where you want to mark: 3
X | O | O
|  |  | 
X |  | 
|  |  | 
|  |  | 
X | O | O
|  |  | 
X |  | 
|  |  | 
|  |  | 
Player 1's chance
Enter the position between [1-9] where you want to mark: 7
X | O | O
|  |  | 
X |  | 
|  |  | 
X |  | 
|  |  | 
|  |  | 
Player 1 Won
>>>
```

RESULT:

The Program has successfully been executed.