

MINOR PROJECT

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Project: Tic-Tac-Toe Game

The game is designed using python. It is a two player game. It uses functions and loops. And executed in all possible scenarios.

Code:

#basically prints the the layout of the board(3 by 3)

```
def p_board(board):
    print("-----")
    for i in range(3):
        print("|", end=" ")
        for j in range(3):
            print(board[i][j], end=" ")
            print("|", end=" ")
        print("\n-----")
    print("\n")
```

#Checks for the sequence of 3

```
def c_winner(board):
    #check rows for sequence
```

```

for i in range(3):
    if board[i][0] == board[i][1] == board[i][2] != " ":
        return board[i][0]
#check columns for sequence
for j in range(3):
    if board[0][j] == board[1][j] == board[2][j] != " ":
        return board[0][j]
#check diagonals for sequence
if board[0][0] == board[1][1] == board[2][2] != " ":
    return board[0][0]
if board[0][2] == board[1][1] == board[2][0] != " ":
    return board[0][2]
return None

```

#Checks weater the board is filled with moves or not

```

def is_board_full(board):
    for i in range(3):
        for j in range(3):
            if board[i][j] == " ":
                return False
    return True

```

```
def start():
```

```
    board = [[" ", " ", " "],  
              [" ", " ", " "],  
              [" ", " ", " "]]
```

```
    c_player = "1"
```

```
    while True:
```

```
        p_board(board)
```

```
        print("Player", c_player)
```

```
        row = int(input("Enter the row (1-3): "))
```

```
        col = int(input("Enter the column (1-3): "))
```

```
        row-=1
```

```
        col-=1
```

```
        print("\n")
```

```
        if(row>2 or col>2):
```

```
            print("invalid move. Try again.\n")
```

```
            continue
```

```
        else:
```

```
            if board[row][col] == " ":
```

```
                if c_player=="1":
```

```
                    board[row][col] = "X"
```

```
                else:
```

```
                    board[row][col] = "O"
```

```
else:
```

```
    print("Invalid move. Try again.\n")
```

```
    continue
```

```
winner = c_winner(board)
```

```
if winner:
```

```
    p_board(board)
```

```
    print("Player", c_player, "wins!")
```

```
    break
```

```
if is_board_full(board):
```

```
    p_board(board)
```

```
    print("It's a tie!")
```

```
    break
```

```
c_player = "2" if c_player == "1" else "1"
```

```
start()
```

Output:

Example were Player 1 wins!

```
IDLE Shell 3.11.4
File Edit Shell Debug Options Window Help

Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\chara\OneDrive\Desktop\pro2.py

-----
| | | |
-----
| | | |
-----
| | | |
-----

Player 1
Enter the row (1-3): 2
Enter the column (1-3): 2

-----
| | | |
-----
| | X |
-----
| | | |
-----

Player 2
Enter the row (1-3): 1
Enter the column (1-3): 1

-----
| O | | |
-----
| | X | |
-----
| | | |
-----

Player 1
Enter the row (1-3): 2
Enter the column (1-3): 3

-----
| O | | |
-----
| | X | X |
-----
| | | |
-----

Player 2
Enter the row (1-3): 2
Enter the column (1-3): 1
```

```

-----
| O |   |   |
-----
| O | X | X |
-----
|   |   |   |
-----

```

Player 1
Enter the row (1-3): 3
Enter the column (1-3): 1

```

-----
| O |   |   |
-----
| O | X | X |
-----
| X |   |   |
-----

```

Player 2
Enter the row (1-3): 1
Enter the column (1-3): 3

```

-----
| O |   | O |
-----
| O | X | X |
-----
| X |   |   |
-----

```

Player 1
Enter the row (1-3): 3
Enter the column (1-3): 2

```

-----
| O |   | O |
-----
| O | X | X |
-----
| X | X |   |
-----

```

Player 2
Enter the row (1-3): 3
Enter the column (1-3): 3

```
-----  
| O |   | O |  
-----  
| O | X | X |  
-----  
| X | X | O |  
-----
```

Player 1
Enter the row (1-3): 2
Enter the column (1-3): 1

Invalid move. Try again.

```
-----  
| O |   | O |  
-----  
| O | X | X |  
-----  
| X | X | O |  
-----
```

Player 1
Enter the row (1-3): 1
Enter the column (1-3): 2

```
-----  
| O | X | O |  
-----  
| O | X | X |  
-----  
| X | X | O |  
-----
```

Player 1 wins!

>>>

Another example where both Tie!

```
IDLE Shell 3.11.4
File Edit Shell Debug Options Window Help

-----
| | | |
-----
| | | |
-----
| | | |
-----

Player 1
Enter the row (1-3): 2
Enter the column (1-3): 2

-----
| | | |
-----
| | X | |
-----
| | | |
-----

Player 2
Enter the row (1-3): 1
Enter the column (1-3): 1

-----
| O | | |
-----
| | X | |
-----
| | | |
-----

Player 1
Enter the row (1-3): 1
Enter the column (1-3): 2

-----
| O | X | |
-----
| | X | |
-----
| | | |
-----

Player 2
Enter the row (1-3): 3
Enter the column (1-3): 2
```



```

-----
| O | X |   |
-----
|   | X |   |
-----
|   | O |   |
-----

```

Player 1
Enter the row (1-3): 3
Enter the column (1-3): 1

```

-----
| O | X |   |
-----
|   | X |   |
-----
| X | O |   |
-----

```

Player 2
Enter the row (1-3): 1
Enter the column (1-3): 3

```

-----
| O | X | O |
-----
|   | X |   |
-----
| X | O |   |
-----

```

Player 1
Enter the row (1-3): 2
Enter the column (1-3): 1

```

-----
| O | X | O |
-----
| X | X |   |
-----
| X | O |   |
-----

```

Player 2
Enter the row (1-3): 2
Enter the column (1-3): 3

```
-----  
| O | X | O |  
-----  
| X | X | O |  
-----  
| X | O |   |  
-----
```

Player 1
Enter the row (1-3): 3
Enter the column (1-3): 3

```
-----  
| O | X | O |  
-----  
| X | X | O |  
-----  
| X | O | X |  
-----
```

It's a tie!
