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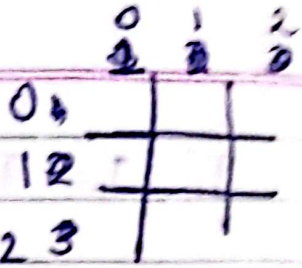


1) Construct a 3x3 Matrix

2) Every player plays alternatively until one player gets a horizontal, diagonal or vertical filled with the same symbol.

3) Once a player gets 3 in a sequence they win, the computer must find the most optimal place to put the symbol to block the sequence

4) Once a player gets a sequence they win otherwise if all the places are occupied then it results in a tie.

if the A.I wins the toss it starts

row = random.randint(0,3)
col = random.randint(0,3)

placing in the random place
now subtract (row-1)[col-1] . this will show the position occupied

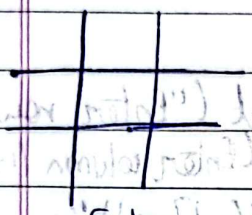
AI moves in priorities:
1) To check if it can win
2) To check if player can win and block.

```
import random

def print_board(board):
    for row in board:
        print("|".join(row))
        print("-" * 9)

def check_winner(board):
    for i in range(3):
        if board[i][0] == board[i][1] == board[i][2] != " ":
            return board[i][0]
        if board[0][i] == board[1][i] == board[2][i] != " ":
            return board[0][i]
    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]

def is_board_full(board):
    return all(cell != " " for row in board for cell in row)

def ai_move(board):
    for i in range(3):
        for j in range(3):
            if board[i][j] == " ":
                board[i][j] = "X"
                if check_winner(board) == "X":
                    board[i][j] = "O"
                    return
```

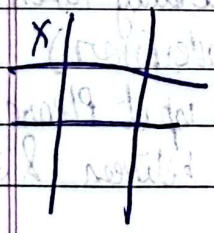
```
def play_game():
    board = [[" " for _ in range(3)] for _ in range(3)]
    print("Welcome to Tic Tac Toe")
    print_board(board)

    while True:
        while True:
            try:
                row = int(input("Enter row (1-3): "
                col = int(input("Enter column (1-3): ")) -
                if board[row][col] == " ":
                    board[row][col] = "X"
                else:
                    print("Cell already taken!")
            except (ValueError, IndexError):
                print("Invalid input. Please enter
                    numbers between 1 & 3!")

        print_board(board)

        if check_winner(board) == "X":
            print("You Win!")

        if is_board_full(board):
            print("It's a draw")
            break

        print("AI's turn")
        ai_move(board)
        print_board(board)

        if check_winner(board) == "O":
```

```
print("AI wins")
if is_board_full(board):
    print("Its a draw!")
```

Output:



Enter row(1,3): 1
Enter column(1,3): 1



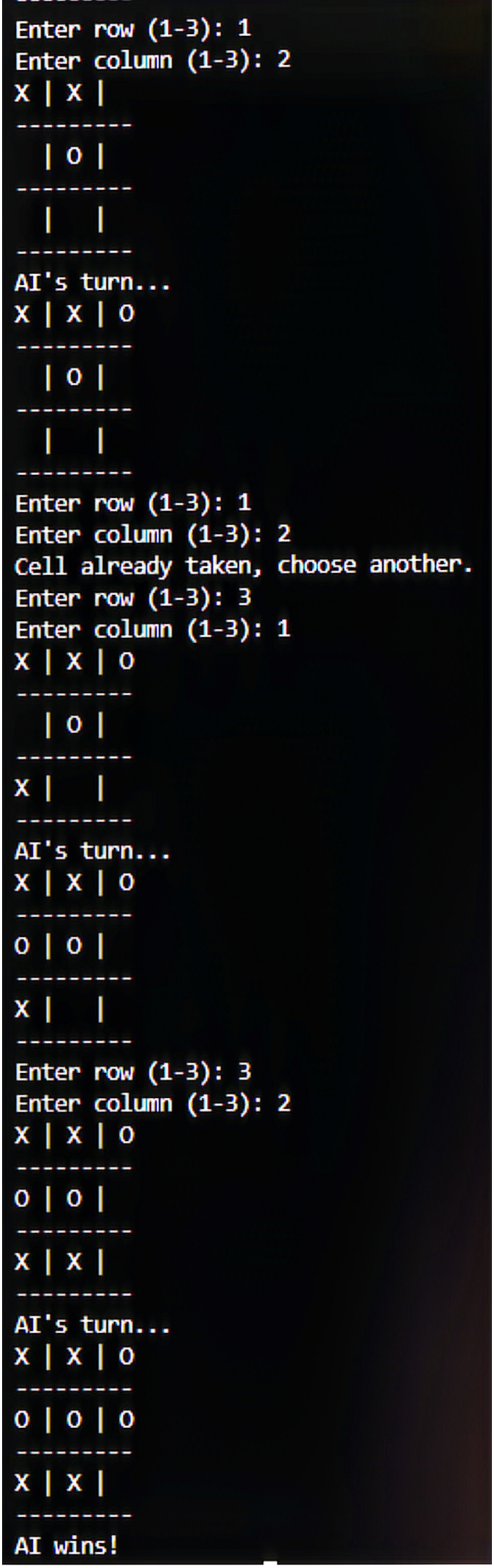
AI's Turn:

.
.
.

AI's turn...

X	X	O
O	O	O
X	X	

AI Wins


Enter row (1-3): 1
Enter column (1-3): 2
X | X |

| O |

| |

AI's turn...
X | X | O

| O |

| |

Enter row (1-3): 1
Enter column (1-3): 2
Cell already taken, choose another.
Enter row (1-3): 3
Enter column (1-3): 1
X | X | O

| O |

X | |

AI's turn...
X | X | O

O | O |

X | |

Enter row (1-3): 3
Enter column (1-3): 2
X | X | O

O | O |

X | X |

AI's turn...
X | X | O

O | O | O

X | X |

AI wins!