**TIC-TAC-TOE USING PYTHON**

**SUPRATIM NAG-CSE-AIML/22/57**

**AI ASSIGNMENT**

**SOURCE CODE:**

# Tic-Tac-Toe Game in Python

# Function to print the Tic-Tac-Toe board

def print\_board(board):

    for row in board:

        print("|".join(row))

        print("-" \* 5)

# Function to check if a player has won

def check\_win(board, player):

    # Check rows, columns, and diagonals for a win

    for row in board:

        if all([cell == player for cell in row]):

            return True

    for col in range(3):

        if all([board[row][col] == player for row in range(3)]):

            return True

    if all([board[i][i] == player for i in range(3)]) or all([board[i][2 - i] == player for i in range(3)]):

        return True

    return False

# Function to check if the board is full (draw)

def check\_draw(board):

    return all([cell != ' ' for row in board for cell in row])

# Function to play the Tic-Tac-Toe game

def play\_game():

    # Initialize the board

    board = [[' ' for \_ in range(3)] for \_ in range(3)]

    current\_player = 'X'  # X will start the game

    while True:

        print\_board(board)

        row = int(input(f"Player {current\_player}, enter the row (0, 1, 2): "))

        col = int(input(f"Player {current\_player}, enter the column (0, 1, 2): "))

        # Check if the move is valid

        if board[row][col] == ' ':

            board[row][col] = current\_player

        else:

            print("This position is already taken. Try again.")

            continue

        # Check for a win or a draw

        if check\_win(board, current\_player):

            print\_board(board)

            print(f"Player {current\_player} wins!")

            break

        elif check\_draw(board):

            print\_board(board)

            print("It's a draw!")

            break

        # Switch players

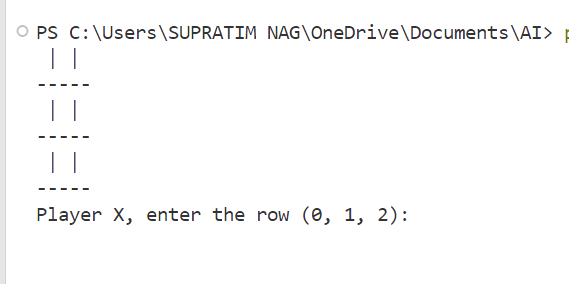
        current\_player = 'O' if current\_player == 'X' else 'X'

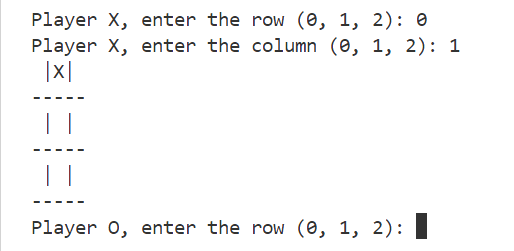
# Start the game

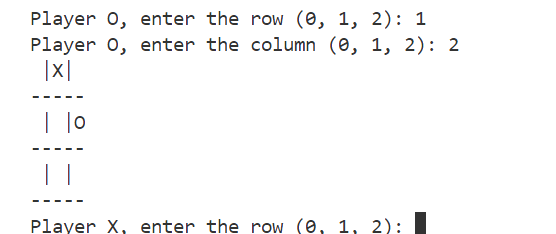
if \_\_name\_\_ == "\_\_main\_\_":

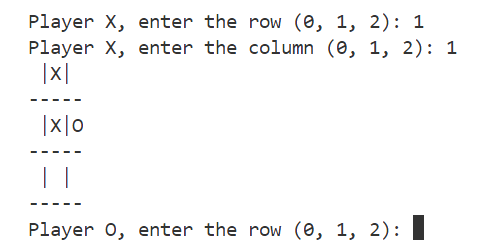
    play\_game()

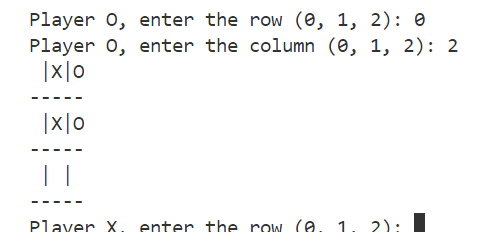
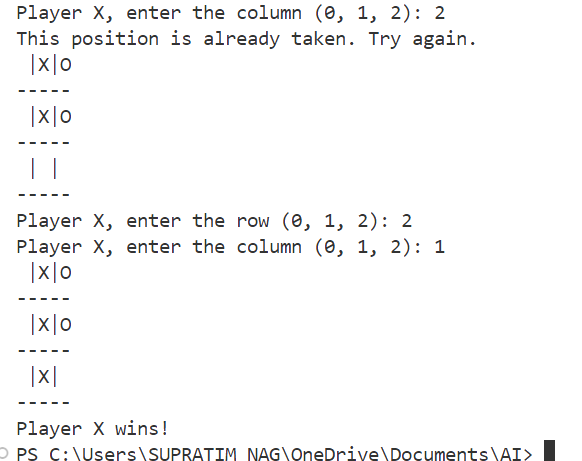
**OUTPUT:**

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