

Assignment 6

CODE:

```
# Set up the game board as a list
```

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

```
# Define a function to print the game board
```

```
def print_board():  
    print(board[0] + " | " + board[1] + " | " + board[2])  
    print(board[3] + " | " + board[4] + " | " + board[5])  
    print(board[6] + " | " + board[7] + " | " + board[8])
```

```
# Define a function to handle a player's turn
```

```
def take_turn(player):  
    print(player + "'s turn.")  
    position = input("Choose a position from 1-9: ")  
    while position not in ["1", "2", "3", "4", "5", "6", "7", "8", "9"]:  
        position = input("Invalid input. Choose a position from 1-9: ")  
    position = int(position) - 1  
    while board[position] != "-":  
        position = int(input("Position already taken. Choose a different position: ")) - 1  
    board[position] = player  
    print_board()
```

```
# Define a function to check if the game is over
```

```
def check_game_over():  
    # Check for a win  
    if (board[0] == board[1] == board[2] != "-") or \  
        (board[3] == board[4] == board[5] != "-") or \  
        (board[6] == board[7] == board[8] != "-") or \  
        (board[0] == board[3] == board[6] != "-") or \  
        (board[1] == board[4] == board[7] != "-") or \  
        (board[2] == board[5] == board[8] != "-") or \  
        (board[0] == board[4] == board[8] != "-") or \  
        (board[2] == board[4] == board[6] != "-"):  
        return "win"  
    # Check for a tie  
    elif "-" not in board:  
        return "tie"
```

```

# Game is not over
else:
    return "play"

# Define the main game loop
def play_game():
    print_board()
    current_player = "X"
    game_over = False
    while not game_over:
        take_turn(current_player)
        game_result = check_game_over()
        if game_result == "win":
            print(current_player + " wins!")
            game_over = True
        elif game_result == "tie":
            print("It's a tie!")
            game_over = True
        else:
            # Switch to the other player
            current_player = "O" if current_player == "X" else "X"

# Start the game
play_game()

```

OUTPUT:

```

- | - | -
- | - | -
- | - | -
X's turn.
Choose a position from 1-9: 3
- | - | X
- | - | -
- | - | -
O's turn.
Choose a position from 1-9: 2
- | O | X
- | - | -
- | - | -
X's turn.
Choose a position from 1-9: 1

```

X | O | X

- | - | -

- | - | -

O's turn.

Choose a position from 1-9: 8

X | O | X

- | - | -

- | O | -

X's turn.

Choose a position from 1-9: 7

X | O | X

- | - | -

X | O | -

O's turn.

Choose a position from 1-9: 5

X | O | X

- | O | -

X | O | -

O wins!