Tic Tac Toe

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Link to Repository : https://github.com/cinnamon0606/Project-TicTacToe

Source Code : https://geekflare.com/tic-tac-toe-python-code/

create a board

In [60]:

```
board = ["-", "-", "-",
         "-", "-", "-",
         "-", "-", "-"]
currentPlayer = "X"
winner = None
gameRunning = True
```

print the board

In [61]:

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

take player input from 1 to 9

In [62]:

```
def playerInput(board):
    inp = int(input("Select a spot 1-9: "))
    if board[inp-1] == "-":
        board[inp-1] = currentPlayer
    else:
        print("Player is already at that spot.")
```

check for win or tie

In [63]:

```
#Set all the ways to win
###Horizontal
def checkHorizontal(board):
    global winner
    if board[0] == board[1] == board[2] and board[0] != "-":
        winner = board[0]
        return True
    elif board[3] == board[4] == board[5] and board[3] != "-":
        winner = board[3]
        return True
    elif board[6] == board[7] == board[8] and board[6] != "-":
        winner = board[6]
        return True
###Vertical
def checkRow(board):
    global winner
    if board[0] == board[3] == board[6] and board[0] != "-":
        winner = board[0]
        return True
    elif board[1] == board[4] == board[7] and board[1] != "-":
        winner = board[1]
        return True
    elif board[2] == board[5] == board[8] and board[2] != "-":
        winner = board[3]
        return True

###Diagonal
def checkDiag(board):
    global winner
    if board[0] == board[4] == board[8] and board[0] != "-":
        winner = board[0]
        return True
    elif board[2] == board[4] == board[6] and board[4] != "-":
        winner = board[2]
        return True


def checkIfWin(board):
    global gameRunning
    if checkHorizontle(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False

    elif checkRow(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False

    elif checkDiag(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False


def checkIfTie(board):
    global gameRunning
    if "-" not in board:
        printBoard(board)
        print("It is a tie!")
        gameRunning = False
```

switch player

In [64]:

```
##if current player is X the switch to O if not then player is still X
def switchPlayer():
    global currentPlayer
    if currentPlayer == "X":
        currentPlayer = "O"
    else:
        currentPlayer = "X"
```

check for win or tie again

In [65]:

```
while gameRunning:
    printBoard(board)
    playerInput(board)
    checkIfWin(board)
    checkIfTie(board)
    switchPlayer()
```

```
- | - | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 1
X | - | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 2
X | O | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 3
X | O | X
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 5
X | O | X
---------
- | O | -
---------
- | - | -
Select a spot 1-9: 4
X | O | X
---------
X | O | -
---------
- | - | -
Select a spot 1-9: 8
X | O | X
---------
X | O | -
---------
- | O | -
The winner is O!
```

Final Testing

In [66]:

```
board = ["-", "-", "-",
         "-", "-", "-",
         "-", "-", "-"]
currentPlayer = "X"
winner = None
gameRunning = True

def printBoard(board):
    print(board[0] + " | " + board[1] + " | " + board[2])
    print("---------")
    print(board[3] + " | " + board[4] + " | " + board[5])
    print("---------")
    print(board[6] + " | " + board[7] + " | " + board[8])
def playerInput(board):
    inp = int(input("Select a spot 1-9: "))
    if board[inp-1] == "-":
        board[inp-1] = currentPlayer
    else:
        print("Player is already at that spot.")
##Set all the ways to win
###Horizontal
def checkHorizontal(board):
    global winner
    if board[0] == board[1] == board[2] and board[0] != "-":
        winner = board[0]
        return True
    elif board[3] == board[4] == board[5] and board[3] != "-":
        winner = board[3]
        return True
    elif board[6] == board[7] == board[8] and board[6] != "-":
        winner = board[6]
        return True
###Vertical
def checkRow(board):
    global winner
    if board[0] == board[3] == board[6] and board[0] != "-":
        winner = board[0]
        return True
    elif board[1] == board[4] == board[7] and board[1] != "-":
        winner = board[1]
        return True
    elif board[2] == board[5] == board[8] and board[2] != "-":
        winner = board[3]
        return True

###Diagonal
def checkDiag(board):
    global winner
    if board[0] == board[4] == board[8] and board[0] != "-":
        winner = board[0]
        return True
    elif board[2] == board[4] == board[6] and board[4] != "-":
        winner = board[2]
        return True


def checkIfWin(board):
    global gameRunning
    if checkHorizontle(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False

    elif checkRow(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False

    elif checkDiag(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False


def checkIfTie(board):
    global gameRunning
    if "-" not in board:
        printBoard(board)
        print("It is a tie!")
        gameRunning = False

##if current player is X the switch to O if not then player is still X
def switchPlayer():
    global currentPlayer
    if currentPlayer == "X":
        currentPlayer = "O"
    else:
        currentPlayer = "X"

while gameRunning:
    printBoard(board)
    playerInput(board)
    checkIfWin(board)
    checkIfTie(board)
    switchPlayer()
```

```
- | - | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 1
X | - | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 4
X | - | -
---------
O | - | -
---------
- | - | -
Select a spot 1-9: 2
X | X | -
---------
O | - | -
---------
- | - | -
Select a spot 1-9: 5
X | X | -
---------
O | O | -
---------
- | - | -
Select a spot 1-9: 3
X | X | X
---------
O | O | -
---------
- | - | -
The winner is X!
```

In [68]:

```
board = ["-", "-", "-",
         "-", "-", "-",
         "-", "-", "-"]
currentPlayer = "X"
winner = None
gameRunning = True

def printBoard(board):
    print(board[0] + " | " + board[1] + " | " + board[2])
    print("---------")
    print(board[3] + " | " + board[4] + " | " + board[5])
    print("---------")
    print(board[6] + " | " + board[7] + " | " + board[8])
def playerInput(board):
    inp = int(input("Select a spot 1-9: "))
    if board[inp-1] == "-":
        board[inp-1] = currentPlayer
    else:
        print("Player is already at that spot.")
##Set all the ways to win
###Horizontal
def checkHorizontal(board):
    global winner
    if board[0] == board[1] == board[2] and board[0] != "-":
        winner = board[0]
        return True
    elif board[3] == board[4] == board[5] and board[3] != "-":
        winner = board[3]
        return True
    elif board[6] == board[7] == board[8] and board[6] != "-":
        winner = board[6]
        return True
###Vertical
def checkRow(board):
    global winner
    if board[0] == board[3] == board[6] and board[0] != "-":
        winner = board[0]
        return True
    elif board[1] == board[4] == board[7] and board[1] != "-":
        winner = board[1]
        return True
    elif board[2] == board[5] == board[8] and board[2] != "-":
        winner = board[3]
        return True

###Diagonal
def checkDiag(board):
    global winner
    if board[0] == board[4] == board[8] and board[0] != "-":
        winner = board[0]
        return True
    elif board[2] == board[4] == board[6] and board[4] != "-":
        winner = board[2]
        return True


def checkIfWin(board):
    global gameRunning
    if checkHorizontle(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False

    elif checkRow(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False

    elif checkDiag(board):
        printBoard(board)
        print(f"The winner is {winner}!")
        gameRunning = False


def checkIfTie(board):
    global gameRunning
    if "-" not in board:
        printBoard(board)
        print("It is a tie!")
        gameRunning = False

##if current player is X the switch to O if not then player is still X
def switchPlayer():
    global currentPlayer
    if currentPlayer == "X":
        currentPlayer = "O"
    else:
        currentPlayer = "X"

while gameRunning:
    printBoard(board)
    playerInput(board)
    checkIfWin(board)
    checkIfTie(board)
    switchPlayer()
```

```
- | - | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 1
X | - | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 2
X | O | -
---------
- | - | -
---------
- | - | -
Select a spot 1-9: 4
X | O | -
---------
X | - | -
---------
- | - | -
Select a spot 1-9: 7
X | O | -
---------
X | - | -
---------
O | - | -
Select a spot 1-9: 3
X | O | X
---------
X | - | -
---------
O | - | -
Select a spot 1-9: 5
X | O | X
---------
X | O | -
---------
O | - | -
Select a spot 1-9: 8
X | O | X
---------
X | O | -
---------
O | X | -
Select a spot 1-9: 6
X | O | X
---------
X | O | O
---------
O | X | -
Select a spot 1-9: 9
X | O | X
---------
X | O | O
---------
O | X | X
It is a tie!
```