

Day 2 - A Tic-Tac-Toe Game in Python

Tic-Tac-Toe is a simple 2-player game where each player takes turns marking a square on a 3x3 grid with their X or O. The player who succeeds in placing three of their marks in a horizontal, vertical, or diagonal row wins the game.

The Tic-Tac-Toe Game in Python is a program that allows two players to play Tic-Tac-Toe on the command line. The program starts by printing the game board and asking player 1 to make their move by entering the row and column they want to mark. The program then updates the game board and repeats the process for player 2. The game continues until either one of the players has won or all squares on the game board are filled and the game ends in a draw.

The code for this project is as follows:

```
board = [' ' for x in range(9)]

def print_board():
    row1 = "| {} | {} | {} |".format(board[0], board[1], board[2])
    row2 = "| {} | {} | {} |".format(board[3], board[4], board[5])
    row3 = "| {} | {} | {} |".format(board[6], board[7], board[8])

    print()
    print(row1)
    print(row2)
    print(row3)
    print()

def player_move(icon):
    if icon == 'X':
        number = 1
    elif icon == 'O':
        number = 2
    print("Your turn player {}".format(number))
    choice = int(input("Enter your move (1-9): ").strip())
    if board[choice - 1] == ' ':
        board[choice - 1] = icon
    else:
        print()
        print("That space is already taken!")
```

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```
def is_victory(icon):
    if (board[0] == icon and board[1] == icon and board[2] == icon) or \
        (board[3] == icon and board[4] == icon and board[5] == icon) or \
        (board[6] == icon and board[7] == icon and board[8] == icon) or \
        (board[0] == icon and board[3] == icon and board[6] == icon) or \
        (board[1] == icon and board[4] == icon and board[7] == icon) or \
        (board[2] == icon and board[5] == icon and board[8] == icon) or \
        (board[0] == icon and board[4] == icon and board[8] == icon) or \
        (board[2] == icon and board[4] == icon and board[6] == icon):
        return True
    else:
        return False

def is_draw():
    if ' ' not in board:
        return True
    else:
        return False
```

```
while True:
    print_board()
    player_move('X')
    print_board()
    if is_victory('X'):
        print("X wins! Congratulations!")
        break
    elif is_draw():
        print("It's a draw!")
        break
    player_move('O')
    if is_victory('O'):
        print_board()
        print("O wins! Congratulations!")
        break
    elif is_draw():
        print("It's a draw!")
        break
```

This code implements the Tic Tac Toe game in Python using a 3x3 grid represented by a list **board**. The **print_board** function prints the current state of the board, and the **player_move** function allows a player to make a move by entering a space number (1-9) and marking it with their symbol (X or O). The **is_victory** function checks if a player has won by getting

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three symbols in a row, and the **is_draw** function checks if all spaces have been filled and the game has ended in a draw. The game continues in a loop until a

Output:

```
>python .\tictactoe.py
```

```
| | | |  
| | | |  
| | | |
```

```
Your turn player 1
```

```
Enter your move (1-9): 2
```

```
| | x | |  
| | | |  
| | | |
```

```
Your turn player 2
```

```
Enter your move (1-9): 2
```

```
That space is already taken!
```