

LAB 1 – TIC TAC TOE

CODE:

```
def print_board(board):
    for row in board:
        print(" | ".join(row))
        print("-" * 5)

def check_win(board, player):
    for row in board:
        if all(s == player for s 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

def is_full(board):
    return all(board[row][col] != '_' for row in range(3) for col in range(3))

def tic_tac_toe():
    board = [['_' for _ in range(3)]]
    current_player = 'X'

    while True:
        print_board(board)
        try:
            row, col = map(int, input(f"Player {current_player}, enter row and column (0-2): ").split())

            if row not in range(3) or col not in range(3):
                print("Invalid input! Row and column must be between 0 and 2.")
                continue

            if board[row][col] != '_':
                print("Cell already taken, try again!")
                continue

            board[row][col] = current_player

            if check_win(board, current_player):
                print_board(board)
```

```
        print(f"Player {current_player} wins!")
        break

    if is_full(board):
        print_board(board)
        print("It's a draw!")
        break

    current_player = 'O' if current_player == 'X' else 'X'

except ValueError:
    print("Invalid input! Please enter two numbers separated by
space.")

print("SIRIPURAPU MANASWI - 1BM23CS331\n")
tic_tac_toe()
```

OUTPUT:

```
SIRIPURAPU MANASWI - 1BM23CS331
```

```
_ | _ | _  
-----
```

```
_ | _ | _  
-----
```

```
_ | _ | _  
-----
```

```
Player X, enter row and column (0-2): 0 1
```

```
_ | X | _  
-----
```

```
_ | _ | _  
-----
```

```
_ | _ | _  
-----
```

```
Player O, enter row and column (0-2): 1 1
```

```
_ | X | _  
-----
```

```
_ | O | _  
-----
```

```
_ | _ | _  
-----
```

```
Player X, enter row and column (0-2): 0 2
```

```
_ | X | X  
-----
```

```
_ | O | _  
-----
```

```
_ | _ | _  
-----
```

```
Player O, enter row and column (0-2): 0 0
```

```
O | X | X  
-----
```

```
_ | O | _  
-----
```

```
_ | _ | _  
-----
```

```
Player X, enter row and column (0-2): 2 1
```

```
O | X | X  
-----
```

```
_ | O | _  
-----
```

```
_ | X | _  
-----
```

```
Player O, enter row and column (0-2): 2 2
```

```
O | X | X  
-----
```

```
_ | O | _  
-----
```

```
_ | X | O  
-----
```

```
Player O wins!
```