

2. Write the python program to solve 8-Queen problem.

Program:

```
global N
```

```
N = 4
```

```
def printSolution(board):
```

```
    for i in range(N):
```

```
        for j in range(N):
```

```
            print (board[i][j],end=' ')
```

```
        print()
```

```
def isSafe(board, row, col):
```

```
    for i in range(col):
```

```
        if board[row][i] == 1:
```

```
            return False
```

```
    for i, j in zip(range(row, -1, -1), range(col, -1, -1)):
```

```
        if board[i][j] == 1:
```

```
            return False
```

```
    for i, j in zip(range(row, N, 1), range(col, -1, -1)):
```

```
        if board[i][j] == 1:
```

```
            return False
```

```
    return True
```

```
def solveNQUtil(board, col):
```

```
    if col >= N:
```

```
        return True
```

```
    for i in range(N):
```

```
        if isSafe(board, i, col):
```

```
            board[i][col] = 1
```

```
            if solveNQUtil(board, col + 1) == True:
```

```
                return True
```

```
            board[i][col] = 0
```

```

        return False

def solveNQ():
    board = [ [0, 0, 0, 0],
               [0, 0, 0, 0],
               [0, 0, 0, 0],
               [0, 0, 0, 0]
             ]

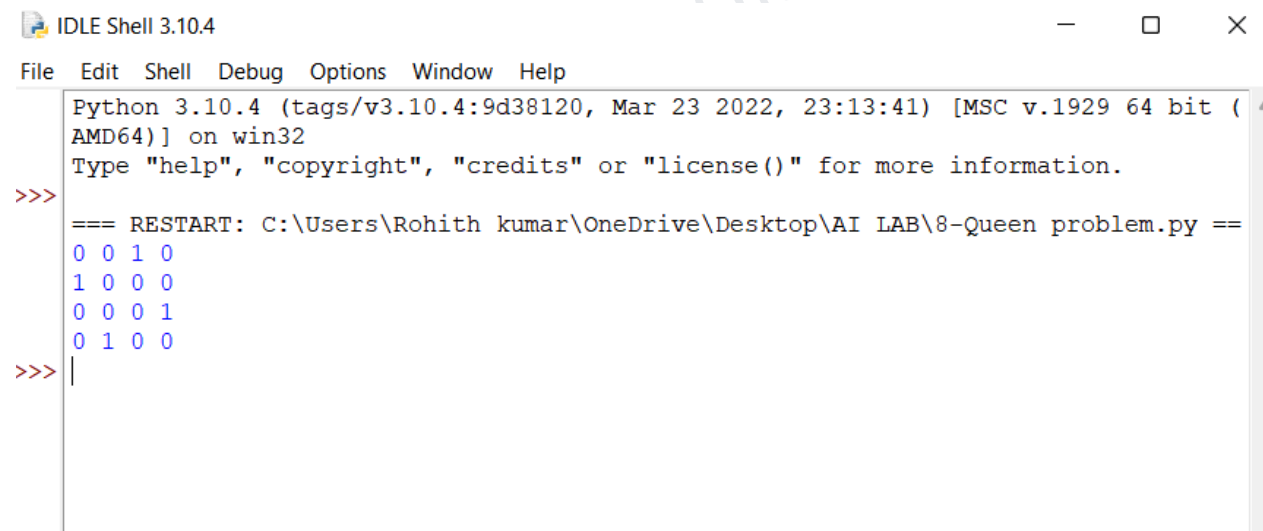
    if solveNQUtil(board, 0) == False:
        print ("Solution does not exist")
        return False

    printSolution(board)
    return True

```

solveNQ()

## OUTPUT:



The screenshot shows a Python IDLE Shell window titled "IDLE Shell 3.10.4". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell displays the following text:

```

Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=== RESTART: C:\Users\Rohith kumar\OneDrive\Desktop\AI LAB\8-Queen problem.py ===
0 0 1 0
1 0 0 0
0 0 0 1
0 1 0 0
>>>

```