Name: Esha asif
Roll no:034
Section:BSAI 4A
Subject:Programming for AI
LAB TASK 4

Code:

```
#def solve_n_queens(n):
#    def is_safe(board, row, col):
#        for i in range(row):
#            if board[i] == col or \
#                board[i] - i == col - row or \
#                board[i] + i == col + row:
#                 return False
#        return True

#    def solve(row):
#        if row == n:
#            result.append(board[:])
#            return
#        for col in range(n):
#            if is_safe(board, row, col):
#                board[row] = col
#                solve(row + 1)
```

```
#     result =[]
#     board= [-1]*n
#     solve(0)
#     for sol in result:
#         for i in sol:
#             print("."* i +"q" +"." *(n - i - 1))
#         print("\n")
# n = 8
# solve_n_queens(n)
```

HOW AND WHY:
This code is for n queen problem it's a puzzle the aim of this puzzle is to place the n queens on a chessboard the size can be different it can be n which can by any input decided by the user, 6, 8 or more in such a way that no queen can attack any other queen in any direction up, down,diagonally etc.
It starts by 1 queen placing it in a row if the spot is safe it goes on to placing the next queen and this goes on until the last queen.

OUTPUT:The output was too long and I couldn't paste the whole of it!

```
PS C:\Users\eshaa> & C:/Users/eshaa/AppDa
q.......
....q...
.......q
.....q..
..q.....
......q.
.q......
...q....


q.......
.....q..
.......q
..q.....
......q.
...q....
.q......
....q...


q.......
......q.
...q....
.....q..
.......q
.q......
....q...
..q.....


q.......
......q.
....q...
.......q
.q......
```

```
.......q
.q......
....q...
..q.....
q.......
......q.
...q....
.....q..


.......q
..q.....
q.......
.....q..
.q......
....q...
......q.
...q....


.......q
...q....
q.......
..q.....
.....q..
.q......
......q.
....q...
```

PS C:\Users\eshaa>