Exp. No:

Date:

N- Queen Problem

(' - his , - ') trois

AIM:

del "usche [kard, sow, co]). To solve the N-Queens problem by Edentifying all valid configurations or finding at least one solution, depending on requirements for i,j in zip (range (na, -1, -1), anny (w)

## ALGORITHM:

Step -1: Start

Step-2: Create an NxN board with all positions set to O.

if board [i][i] == i.

Step-3: For each column, try placing a given in each row.

Step-4: check if the position is cafe using the. issafe () function ( no queen in the same row, column, or diagonal) (1 = 1 10)

step - 5: If placing the queen is safe, mark the

Step-6 A no valid placement is found, backtrack by removing the open and try a new position.

Step-7: 24 queens are placed In all columns, prient the liboural man literphone is

Step-8: 21 no placement la possible, print solution does not exist the Charge of broad return False Step - 9: Stop

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CODE:

de Print Solution (board); for 19 in range (N): Brown it is of - prood for I am range (N): - brood ) like a may be if board [i][j]== private ]-ping and was applied

```
Print ("Q", end =")
                  else:
                     Print ('-', end = '')
              Print()
      def "ssafe (board, row, col):
                                                        : 141 A
          for in mange (col);
             hip board [now][i] = = limbriupiping how the
                  retuin False por no probangon, modern
      for i,j in zip (range (row, -1, -1), range (w1, -1,-1)):
               board [i][j] = = 1:
               return False
      for i, j in zip (range (raw, N, 1), range (col, -1,-1)):
        board [i][j] == 1:
              return False
      retur True
           SolveNQUtil (board, col):
             col >= N:
              placing the que suit nurter
           tor i range (N). 10 About many rate
            " is Safe (board, i, col):
 Sto-1: 34 America 10=C (a) Tist Smood 11 celumns , i lourist
                  if solvenoviil (board, col +1).
Step-8:31 no placement Ensutands, mint studio 1 deces
                  board [i][w]]: 0 : [lw][i] broad
            return False
          Solve Ng():
          global N
          N = 9nput ("Enter the number:")
          board = [To for. i in range (N)] for j in range (N)]
          if solve Noutil (board, 0) == Palse;
               print ("solution does not exist")
               return False
```

PrintSolution (board) return Pouc Eup. No: Date . Solve NQ() : MIA of the second of antiscopin sich themsegne of starting from a given needs and visiting at and pulls contonel que to reconfiget in when en month of the founds oban rundapion II: d gate. Enter the number: 3 patricopies on Harrison does not exist the Solution does not exist the solution of multiple of quite Fother the number: 421 mad avoid Repeat populs

RESULT:

hers been successfully executed is verified. and the output