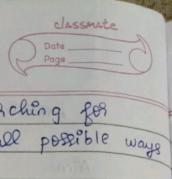
to place is queens.

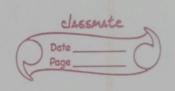
Experiment No. 1 N Queens Paoblem solutions by backlendering to find all persons

TO solve the N-Queens problem using the backtracking algorithm in Rython, where the goal is to place N queens on an NXN chassboard such that no two queens threaten each other. The program will take N as input from the uses and provide all possible solutions for placing the gueens.

- Algorithm: : (03) 3 poor 03 ? Initialize the Board Geate an NXN board initialized with zeros (o). Each cell Represents an empty sot whose a queen might be placed.
- Define the Backtracking function create a recursive function solve Queens (board, col) that attempts to place quelos on the board column by column. If the column index equals N, it means all queens are successfully placed, and we have a found a solution.
- check Safety: Create a helper function essafe (board, now, : (col) to check whether placing a queen at board [sow] [col] is safe. Ensure no other queens are on the same now, column or diagonal.
- Place the Queen: For each you in the current column, 4. check if it's safe to place a queen. If safe, place the queen and make a secussive call to place quelens in the next column.
- Backtrack: It placing a queen inviany sow of the cussent column doesn't lead to a solution, backtrack by Removing the queen and trying the next now. 199 int the solution: once all gueens are placed
- successfully, add the board configuration to the listof solution.



	Date Page
7.	Handle Multiple solution: continue seasching for
	solutions by backtracking to find all possible ways
	to place N queens.
8.	uses Input: Take input N grom the uses to determine
at 2°	the size of the board and the number of gueson
9m /	THE WORK NEW TO MAN GOOGS BEAUTY OF THE PARTY STORE IN
Y	thousand sure outer the wall and the same
91308899	take is as input from the uses and provide as
	def "ssafe(board, xow, col, N).
	# check this now on left side
	les i in sange (web):
र्विधिक हो	o'f board [20w] [?] == 1:
1.01	Actuan False Dong (6) 2870 Affin
	where a queen snight be placed.
evisi	# check upper diagonal on left lide
place	1 2 1 1 2 1 (Sange (Sow, -1, -1), sange (col, -1, -1)):
9.5	if board [i][j] ==1:
S	A Return False 11 stage XXA & many
robution.	successfully placed, and we have a found a
war bed	# check lower diagonal on left ride
	208 ?, ; in zip (Range (Row, N), Range (col, -1, +1)):
	of the oard [?][]==1: Doard [?][]==1:
	Return False 19 1111000 111000 111000
column	Fretuskietsuewer Dono Pet many and soon of
	olegels of it's safe to place a guen to safe
300	def solve Naulas (board, col, N):
	# IP all queens are placed, return True
1676	wife colient in a prison of the second
Soneland	a will set as no True. In 20th miles in 20th
	by somering the queen and taying the next sis
	# consider this column and thy placing the
-180. 99	queen in all sows one by one
	Walter a



ger i in Range (N):

if issafe (board, i, cop, N):

Place the Queen

board [P] [col] =1

Recus to place the sest of the queens if solve NQ weens (board, col+1, N):

Return True

If placing queen in board [i] [col] dosnit lead to a solution, backtrack board [i] [col] = 0

Return False

def printsolution (board, N):

for in Range (N):

ger in Range (N):

eg booad[i][j]==1:
print ("A", end="")

elle:

print (".", end =" ")

print()
print("In")

def solve Naueens Problem (N):

boold = [[o for_ in range (N)] for - in range (N)]

met selvenqueens (board, o, N):

print ("solution does not exist")

getusn False

printsolution (boasd, N)

Return True

of __name -= "__main_-":

N= ent (esput ("Ent⊗ the values of N (4, 6,8,....): "))

golve N Queens Problem (N)

