**PROJECT PROPOSAL**

**Project Title:** Solving N×N Queens puzzle game using Graph Techniques

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**Project Description:**The N×N Queens puzzle is the problem of placing N queens on a N×N chessboard in such a manner that no two queens threaten each other, keeping in consideration, that a queen can move vertically, horizontally and diagonally. Thus, the solution requires that no two queens should share the same row, column or diagonal. The solution to this puzzle exists for all natural numbers N except for N = 2 and N= 3. We aim to limit our chessboard to consist of any N number. Our project would be a game, enabling the user to place queen on any tile of the chessboard. If the user places all the queens on the tiles where they cannot attack each other, he/she wins and if any one of the queens is placed on the wrong tile (where it is attackable) then the game is over.

**Project Outcome:**There would be a menu screen with the logo and two buttons asking the user to either insert any number (N) or generate any random number (N). Then, there would be the game screen with the NxN grid and N number of queens at the bottom of the screen. The user would select the tile and a queen would be placed on that tile. If the queen is placed on a tile where it is attackable then a message would be displayed that the game is over, otherwise the game would be continued until all the queens are placed on the right tiles after which a victory message would be displayed.

**Resources/Libraries:** We'll be adding GUI to the game so we'll be using Tkinter library (which is one of Python's own).