EAST WEST UNIVERSITY

Title and Summary of the Project Description

Project Title:

"N-Queens Problem"

Course Code: CSE246

Course Title: Algorithms

Semester: Summer 23

Section: 02

Group No: 10

Submitted By:

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Summary of the Project Description:

The 'N-Queens' problem involves placing N chess queens on an N×N chessboard in such a way that no two queens attack each other, i.e., they do not share the same row, column, or diagonal. In this project, the goal is to solve the N-queen problem that shows all possible placements of N queens. The project aims to provide a solution to the N-queen problem that can be applied to various scenarios involving chessboards of different sizes. The solution should be applicable to various real-world scenarios requiring optimal arrangements or assignments under specific constraints.

In summary, the N-Queens problem is a challenging puzzle that involves placing N chess queens on an N×N chessboard in such a way that no two queens attack each other. In this project, a recursive backtracking algorithm was used to solve the problem and it provides a solution that can be applied to various scenarios involving chessboards of different sizes. The project aimed to create an efficient and flexible solution that respects specific constraints in real world scenarios requiring optimal arrangements or assignments. The applications of the N Queens problem were explored in three scenarios, namely course scheduling in universities, library bookshelf arrangement and task scheduling in parallel computing where the problem can be adapted to model the scheduling of courses and the arrangement of books on library bookshelves, respectively. Solving the adapted N Queens problem helps in creating a more efficient and diverse layout that promotes exploration and discoverability of various genres and topics.