**CSE 2225 Artificial Intelligence FISAC ( Mini Project )**

**TITLE: Implementation of N – Puzzle Problem.**

**Problem Statement:**

The project aims to develop an AI - based solution for solving a classic n - puzzle problem. The puzzle will have a grid of ‘n + 1’ rows and columns. On this grid, tiles marked with numbers or with parts of an image will be jumbled. The grid will have n tiles, meaning there will be one blank space. The blank space will aid the player to solve this jumbled puzzle and give order to it. It will have to following constraints –

* Only one tile can be moved in a move.
* One cannot pick a tile and place it on the blank space; they can only slide tiles neighbouring the blank space into the blank space.

**Objectives:**

* Develop an algorithm to solve the puzzle of any size.
* Develop a user interface which will take inputs like size of the puzzle and image used. It will also display the current state of the puzzle.
* Store the results of the user’s gameplay and give feedback on time taken and efficiency of the moves. (Depending on time availability)
* Suggest next move to the player.

**Course content mapped:**

The project will depict the state of the puzzle, including the positions of the tiles on the grid. It will utilize the search techniques like A\* to reach the goal state.

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