**SUDOKO SOLVER**

This project will be submitted as partial requirement for the course CS-2001 in fall 2023.

**Member 1:** MUHAMMAD SAAD (22K-4141)  
**Member 2:** MUHAMMAD HAMZA (22K-4523) **Member 3:** ABDUL WASEY (22K-4172)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Goal:**

The primary objective of this project is to develop a Sudoku puzzle solving application. This project aims to create an efficient Sudoku solver that can tackle puzzles of varying difficulty levels and provide a user-friendly interface for solving Sudoku puzzles on user given values.

**Actors/System User(s):**

End Users (Puzzle Enthusiasts)

Admin (Responsible for system maintenance and updates)

**List of Features with applicable Data structures and their algorithms:**

1)Sudoku Puzzle Solver

* Implement backtracking and constraint propagation algorithms.
* Data structures such as 2D arrays to represent the puzzle grid.

2)User Interface

* Create an user-friendly interface for inputting and solving Sudoku puzzles and to generate output.

3)Puzzle Generation

* Generate Sudoku puzzles of varying difficulty levels for users to solve.
* Algorithms for creating / solving valid puzzles.

Puzzle Validation

* The puzzle acts upon the various Sudoku rules (e.g., no repeated numbers in rows, columns, or sub grids).

**Tools & Techniques:**

* Programming Language: C++
* Integrated Development Environment: VISUAL STUDIO 2022
* VARIOUS DATA STRUCTURES AND ALGROTIHMS

**Schedule:**

[To be submit one week before the final exam of the fall 2023 semester]

**BACKUP PROJECT:**

PROJECT ID:( PJ03) SHOPPING PORTAL (IMPLEMENT SHOPPING PORTAL USING LINKED LIST)

* ADDING PRODUCTS
* DELETING PRODUCTS
* PROVIDING LIST WITH COST
* USER FRIENDLY

* Accept
* Reject

**Course Teacher:** Basit Ali                 **Signature:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_