

SUDOKU MANIA

SOFTWARE REQUIREMENT SPECIFICATIONS

CS 101 GROUP PROJECT

Group Members

STUDENT NAME	ROLL NUMBER
Ashna Gaur	140050087
Monika Yadav	145090007
Bhuban Ray Sarkar	145280027
Saaransh Kulkarni	145090017

1. Introduction

Sudoku is a puzzle game in which a 9x9 grid with a few numbers already filled in is given to the user and the user is expected to solve it by filling in all numbers from 1 to 9 in every row, column and certain 3x3 squares. Because of the dimensions of the grid, no number is repeated along a row, Column or 3x3 square.

				2	8		7	
			3					8
		8			1			4
	4					7		6
	8		7	5	6		4	
5		7					1	
9			8			6		
8					9			
	2		5	4				

A Sample Sudoku highlighting the rows and Columns and the 3x3 box.

1.1. Purpose

The purpose of this SRS document is to provide a detailed overview of our project, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our team and audience see the project and its functionality.

1.2. Overview

The sections of this document provide a general description, including characteristics of the users of this project and the functional and data requirements of the programme. General description of the project is

discussed in section 2 of this document. Section 3 gives the functional requirements, data requirements and constraints and assumptions made while designing the Sudoku solver. . Section 3 also discusses the external interface requirements and gives detailed description of functional requirements. Section 4 is for Description of the data (Input/Output).Section 5 is for supporting information.

2. Overall description

This document contains the problem statement of the Sudoku solver. It specifies the functions of the programme.

2.1. Problem statement:

2.1.1. Solving a Sudoku puzzle given by the user.

2.1.2. Giving the user a solvable Sudoku puzzle having a unique solution, checking his gameplay against the rules of conventional Sudoku and finally checking the correctness of the solution.

2.2. Approach:

In the first part of the program, the user is given a blank 9x9 grid. He can input any number of values at any positions. The validity of the input values will be checked according to the rules of Sudoku and the grid will be solved by the program. In the second part, we will store the Sudoku puzzles in files according to the level of difficulty. And according to the level of difficulty chosen by the user, a random puzzle from the files will be given to him. The player will be allowed to input values (to play the game) and the program checks whether the user is playing according to the rules. The final answer is verified with the already solved Sudoku.

3. Specific requirements

3.1. Functionality:

3.1.1. Grid The user is provided with a choice to solve a 9x9 Sudoku.

3.1.2. Difficulty level The user also gets to choose between the easy, medium and difficulty level.

3.1.3. Checker The user gets to check if the entry done by him is correct or not.

3.1.4. Solver The user can input his own Sudoku problem and get it solved.

3.2. Database:

3.2.1. Sample Sudoku's will be stored in database according to difficulty levels

3.2.2. It will also contain paused games

4. Description of Data (Input/Output)

4.1. Part 1:

4.1.1. Input: User will input the data using keyboard.

4.1.2. Output: The grid will be shown onscreen throughout the game, with numbers shown as they are filled in.

4.2. Part 2:

4.2.1. Input: User input will be the Sudoku he wants solved.

4.2.2. Output: The solved Sudoku.

5. Supporting information

This programme shall use freeware software and hence will, as much as possible, be usable across several platforms.