

PROJECT REPORT

on

SUDOKU GAME

Submitted by

Abhijeet Takle (1032191521)

Prakhar Singh Rajput (1032191507)

Mayaank Kumar Singh (1032191497)

in

Object Oriented Programming

SY Btech

Under the Guidance of

(Mrunal Annadate)



School of Electronics & Communication Engineering

Dr. Vishwanath Karad

MIT WORLD PEACE UNIVERSITY, PUNE.

[2020-2021]



Table of Contents

Acknowledgement	1
List of Tables	2
List of Figures	2
Abbreviations	3
CH. 1 Introduction.....	4
1.1 Introduction.....	4
1.2 Aim and Objectives.....	5
CH. 2 Methodology	
2.1 Problem statement	
2.2 System requirements	
2.3 Class Diagram of the System	
CH. 3 Results	
Ch. 4 Conclusion	
References	
APPENDIX (If any required)	

ACKNOWLEDMENT

We would like to express our special thanks of gratitude to our teacher Mrunal Annadate who gave us the golden opportunity to do this wonderful project on the topic **SUDOKU GAME**, which also helped us in doing a lot of Research and We came to know about so many new things we are really thankful to them.

Secondly, we would also like to thank our parents and friends who helped us a lot in finalizing this project within the limited time frame.

Thanking you,
Prakhar Singh Rajput
Mayannk Kumar Singh
Abhijeet Takle

1. INTRODUCTION

1.1. Introduction.

Sudoku is one of the most popular puzzle games of all time. The goal of Sudoku is to fill a 9×9 grid with numbers so that each row, column and 3×3 section contain all of the digits between 1 and 9. As a logic puzzle, Sudoku is also an excellent brain game. If you play Sudoku daily, you will soon start to see improvements in your concentration and overall brain power.

The popular Japanese puzzle game Sudoku is based on the logical placement of numbers. A game of logic, Sudoku doesn't require any calculation nor special math skills; all that is needed are brains and concentration.

The goal of Sudoku is to fill in a 9×9 grid with digits so that each column, row, and 3×3 section contain the numbers between 1 to 9. At the beginning of the game, the 9×9 grid will have some of the squares filled in. Your job is to use logic to fill in the missing digits and complete the grid.

1.2. Aim and Objectives.

Aim: To create a C++ program to play Sudoku.

Objectives:

- To create a function automatically solve the Given Sudoku.
- To create a function which runs the Sudoku game.

2. METHODOLOGY

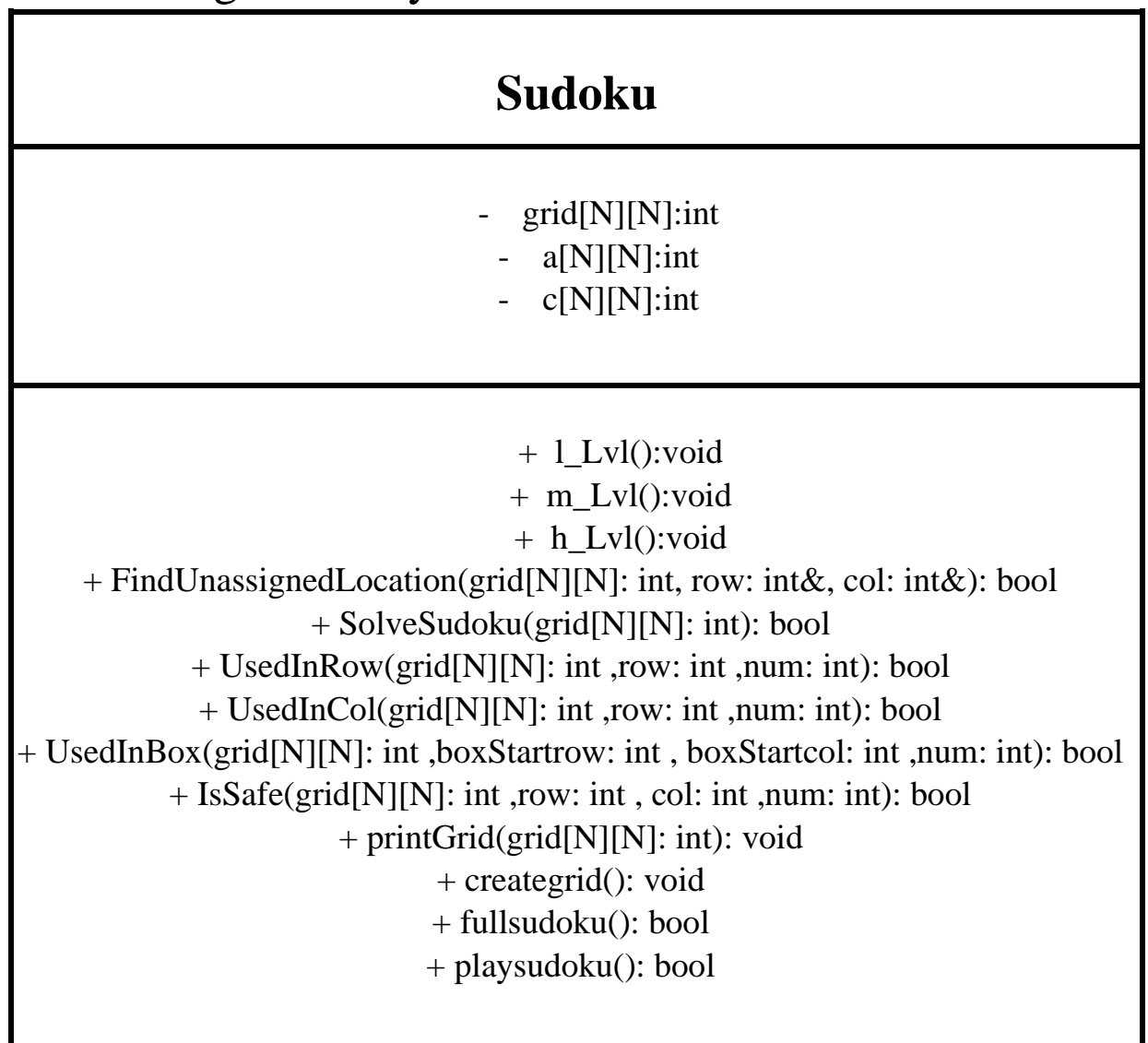
2.1. Problem Statement.

To create a C++ program that automates the Sudoku game.

2.2. System Requirements.

Eclipse IDE for C/C++ development should be installed.

2.3. Class Diagram of System.



3. RESULTS

OUTPUT:

```

I VI\OOP\SUDOKU Game\sudoku
-----1 For LEVe1 1
-----2 For LEVe1 2
-----3 For LEVe1 3
-----4 For CREATing YUor Owin SUDOKU
Enter The Difficulty LVL : 3
Sudoku has valid solution
0 0 7 | 9 1 0 | 5 0 0 |
0 0 1 | 0 0 0 | 0 0 3 |
0 0 9 | 0 4 0 | 0 0 2 |
-----
0 4 0 | 0 0 8 | 3 0 0 |
0 0 0 | 3 0 1 | 0 0 0 |
0 6 0 | 0 5 0 | 0 0 8 |
-----
0 2 0 | 0 9 0 | 0 0 5 |
0 0 0 | 0 0 0 | 0 0 0 |
0 0 4 | 0 8 0 | 0 7 0 |
-----

Do You Want SOLUTION(Y/N): n
Enter the slot you want to change:(row,col) 1
1
Enter the number: 4
0 0 7 | 9 1 0 | 5 0 0 |
0 4 1 | 0 0 0 | 0 0 3 |
0 0 9 | 0 4 0 | 0 0 2 |
-----
0 4 0 | 0 0 8 | 3 0 0 |
0 0 0 | 3 0 1 | 0 0 0 |
0 6 0 | 0 5 0 | 0 0 8 |
-----
0 2 0 | 0 9 0 | 0 0 5 |
0 0 0 | 0 0 0 | 0 0 0 |
0 0 4 | 0 8 0 | 0 7 0 |
-----

Do You Want SOLUTION(Y/N): y
2 8 7 | 9 1 3 | 5 6 4 |

```



```

0 2 0 | 0 9 0 | 0 0 5 |
0 0 0 | 0 0 0 | 0 0 0 |
0 0 4 | 0 8 0 | 0 7 0 |
-----

Do You Want SOLUTION(Y/N): n
Enter the slot you want to change:(row,col) 1
1
Enter the number: 4
0 0 7 | 9 1 0 | 5 0 0 |
0 4 1 | 0 0 0 | 0 0 3 |
0 0 9 | 0 4 0 | 0 0 2 |
-----
0 4 0 | 0 0 8 | 3 0 0 |
0 0 0 | 3 0 1 | 0 0 0 |
0 6 0 | 0 5 0 | 0 0 8 |
-----
0 2 0 | 0 9 0 | 0 0 5 |
0 0 0 | 0 0 0 | 0 0 0 |
0 0 4 | 0 8 0 | 0 7 0 |
-----

Do You Want SOLUTION(Y/N): y
2 8 7 | 9 1 3 | 5 6 4 |
4 5 1 | 2 7 6 | 8 9 3 |
6 3 9 | 8 4 5 | 7 1 2 |
-----
1 4 2 | 7 6 8 | 3 5 9 |
5 9 8 | 3 2 1 | 6 4 7 |
7 6 3 | 4 5 9 | 1 2 8 |
-----
8 2 6 | 1 9 7 | 4 3 5 |
9 7 5 | 6 3 4 | 2 8 1 |
3 1 4 | 5 8 2 | 9 7 6 |
-----

DO You Want A REMATCH(Y/N)n
C:\Users\lenovo\Desktop\MIT WPU\TRI VI\OOP\SUDOKU Game>

```

Which is similar to the output we expected.

4.CONCLUSION

We Successfully executed the code and got the expected output. We also learned about the backtracking algorithm which is used to solve the Sudoku puzzle.

REFERENCES

- <https://www.geeksforgeeks.org/backtracking-algorithms/>