

SRS Document

Minesweeper

- **Introduction**

Minesweeper is a single player puzzle game that involves logical thinking. The game was created by Microsoft Company to develop analytical skills of people. The game consists of a rectangular grid consisting of multiple tiles some containing mines and rest without mines.

The player has to clear the grid by uncovering the tiles but without uncovering the ones containing the mines.

- **Purpose**

Keeping in mind the user requirements we have designed a code for one of the famous games - Minesweeper. This has been done by using the Programming language C++.

- **Problem Definitions**

To create a replica of this game including three level of difficulties namely:

Easy: 9x9 Rectangular grids (10 mines).

Intermediate: 16x16 rectangular grids (40 mines).

Advanced: 16x30 rectangular grids (99 mines).

The required mode of the game is chosen by the user.

- **Algorithm:**

1. Select the difficulty level to either easy, intermediate, advanced.
2. According to the difficulty level selected develop a gameboard.
3. While developing the gameboard randomly assign specified number of mines.
4. There are two boards-gameboard and the problem board.
5. Problemboard interacts with the player.
6. With reference to the mines, for the boxes that don't contain mines substitute the number of mines surrounding that particular block.
7. Accept the row and column number selected by the player which he wants to be either a flag or a non-mine.
8. If player selects it to be non-mine-if it is a mine then end the game else reveal the value of the corresponding number on the gameboard.
9. If the cell selected by the player is a mine then declare it to be a mine in the problemboard.
10. Check if problemboard matches completely with the gameboard.

11. If yes, then the player is declared to be the winner!!! Else repeat all the above steps.

FUNCTIONS AND HEADER FILES

Different libraries used :

```
#include <iostream>
```

```
#include <stdlib.h>
```

```
#include <time.h>
```

Functions used are:

bool loadboard()

- function that loads the board

void disploseboard(position)

-function to display the losing screen

Char yourchoice()

-function to input choice

Void dispmenu()

-displays the game menu

Void Toquit()

- To quit the game

Void getgameinfo(char ch)

- Decides the size of grid and no. of mines as per the difficulty level.

Void func(position)

- Opens up the surrounding cells if the chosen cell is empty(not containing any mine in it or around it.)

Bool revealLocation(position)

- Copies the value of a cell(empty,mine or a number) from gameboard to problem board.

Void newgame(y or n)

- Starts a new game or quits the game depending on our choice-y for yes and n for no.

Int counthash()

- Counts the no. of hashes..or masked loactions

TEAM MEMBERS

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