**Minesweeper**

Introduction

Minesweeper is a puzzle video game. Mines are dispersed on a board that is separated into cells in the game. The three states of a cell are unopened, opened, and flagged. While an opened cell is exposed, an unopened cell is blank and clickable. Unopened cells that have been identified by the player as potential mine locations are known as flagged cells. Some implementations prevent opening flagged cells to lessen the chance of discovering a mine.

A player selects a cell to open it. A player loses the game if they open a mined cell. Otherwise, all surrounding non-mined cells will automatically be opened, and the opened cell will display either a number, indicating the number of mines diagonally and/or adjacent to it, or a blank tile (or "0"). In order to indicate that they think a mine is there, players can additionally flag a cell by placing a flag there. Unflagged cells that have been flagged are still regarded as being unopened.

Objective and Strategy

A Minesweeper game starts when a player chooses a cell on a board. The first click is guaranteed to be safe in some game variations, while all neighbouring cells are further assured to be secure in other variations. The player iteratively gathers more information to solve the board during the game by using the information provided by the opened cells to determine which additional cells are safe to open.

User Interface

Table

Description automatically generated

User Interface of a the same consists of three parts:

* **Non-Mines Count:** It displays count of non-mines element in the game.
* **New Game Button:** A user can click on the new game button to restart it. Before restarting, a user will see a pop-up on the window asking for a confirmation. Upon confirming, the game will be restarted.
* **Board:** As you can see in the image given above, the board consists of small block with numbers and mines. Following actions can be taken by a user on every block of a game.
  + A user can left click to open a cell.
  + Using left button, a user can put a flag on a cell.

Tools and Language Used

* Visual Studio Code (IDE)
* ReactJS
* JavaScript

Execution Instructions

* Download the project from GitHub, extract and open in any supported IDE.
* Open the terminal and execute the following command to install required dependencies for successful execution of a game.

**“npm install”**

* Once the step two is completed, you can start a localhost server to run the minesweeper game by executing the following command.

**“npm start”**

* The game will be opened in the default browser.