Users Manual

•Introduction:

Minesweeper is a puzzle game. The objective of the game is to clear a rectangular board containing hidden mines or bombs without exploding any of them, with help of clues about the number of neighboring mines in each cell

•Instructions:

- When you start the game, there will be a greeting message on the screen as shown below.

- You can give the size of board based on your input parameters. Firstly, give the height of board then width. Press the 'ENTER'. An example is shown in the below picture.

- Now you can give the input for the number of mines which will be placed randomly in the board. The input number for the bombs should not be greater than height*width. Press the 'ENTER'.

```
"C:\Users\HP\Desktop\C projects\MineSweeper\bin\Debug\MineSweeper.exe"
                                ***WELCOME TO MINEWSWEEPER GAME***
Please enter the size of board:
3
5
Please enter the number of mines: 8
```

- Now you will see the rectangular board with the given size(3x5). Start the game by selecting to uncover **'u'** or to mark **'m'** for the cells which you want. For instance, let's choose uncover **'u'.** Press the **'ENTER'.**

```
"C:\Users\HP\Desktop\C projects\MineSweeper\bin\Debug\MineSweeper.exe"
  1 2 3 4 5
1 - - - - -
2 - - - - -
3 - - - - -
Would you like to uncover or mark?  'u' or 'm' u
```

- The program will ask you to enter the coordinates of cell which you want to uncover. After giving the inputs. Press the **'Enter'.**

```
"C:\Users\HP\Desktop\C projects\MineSweeper\bin\Debug\MineSweeper.exe"
  1 2 3 4 5
1 - - - - -
2 - - - - -
3 - - - - -
Would you like to uncover or mark?  'u' or 'm' u
Enter the row number: 2
Enter the column number: 4
```

- In the board you can notice that there is a number which indicates how many mines will be in the neighbors of the cell.

```
    "C:\Users\HP\Desktop\C projects\MineSweeper\bin\Debug\MineSweeper.exe"
  1 2 3 4 5
1 - - - - -
2 - - - 3 -
3 - - - - -
Would you like to uncover or mark?  'u' or 'm'
```

- Now you should choose either **'u'** or **'m'**. As you see we can not determine which adjacent cells don't contain mine. Because there is **'3'** in the cell and that cell has 8 neighbors. So the probability of being mine in neighbors of **'3'** is 3/8. Let's select again uncover operation **'u'.**

Coordinates of cell is (1,1)

```
    "C:\Users\HP\Desktop\C projects\MineSweeper\bin\Debug\MineSweeper.exe"
  1 2 3 4 5
1 * * * 2 *
2 5 * 5 3 1
3 * * * 1 0

You Lost
Game Over
You spent 1306.41 seconds playing the game

Process returned 0 (0x0)   execution time : 1306.492 s
Press any key to continue.
```

Unfortunately, we lost the game. We selected the cell which had mine. You can observe that program shows the numbers in the cells which are the number of bombs in the neighbors of each cell. **'0'** means there is no mine. Moreover, the program gives the amount of time user spent on playing the game.

In addition, it is possible to mark the cell which is suspected during the game. Specific character for marking is represented as **'!'.**

The game is won when all free mine-free cells are revealed.