

Welcome to my minesweeper game. In this game I use multiple functions.

In the main function, I use file handling to display a welcome message for the player. Then, using playGame function to start the game. In the code I use dynamic memory allocation for my 2 dimensional arrays to easily use and free up memory conveniently for the program and the computer.

```
void playGame(void)
```

This function is used to start the game. To create space for dynamic 2d arrays we use memory allocation for arrays called minefield and hiddenfield.

```
void hiddenfieldCreator(int x, int y, int **hiddenfield)
```

Function that assigns empty values ('-') to the hiddenfield (field that the user sees)

```
void minefieldCreator(int x, int y, int numMines, int **minefield)
```

Function that assigns values to the original minefield, with mines and numbers (number of mines in surrounding cells)

```
void printField(int x, int y, int **hiddenfield)
```

Simple function to easily print out minefields after a move or anything else

```
void guess(int x, int y, int numMines, int **minefield, int **hiddenfield)
```

This is my richest and function containing most lines, as it is the function that is triggered when a user makes a move. Any other functions from automatic revealing of mines to losing or winning the game is employed in this function.

```
void checkProgress(int i, int j, int x, int y, int numMines, int **minefield, int **hiddenfield)
```

Function to check the progress of the player

```
void lose(int i, int j, int x, int y, int **minefield, int **hiddenfield)
```

Function to check if the user has lost and if so, terminate the game

```
void win(int x, int y, int numMines, int **hiddenfield, int **minefield)
```

Function to check if the user has won and if so, terminate the game

```
void adjacentCells1(int i, int j, int **hiddenfield, int **minefield)
```

AND

```
void adjacentCells2(int i, int j, int **hiddenfield, int **minefield)
```

Function that uses recursion to automatically reveal the surrounding cells that are not mines.

This function is divided into 2 parts, because the recursion would not work if going in opposite directions. For example i-1, j-1 and i+1, j+1 would create an infinite struggle for the recursion, pulling in opposite directions.

