

C Programming Language: Homework #6

Assigned on 11/26/2019(Tuesday), Due on 12/10/2019(Tuesday)

This program requires you to write a game called **Mine** (踩地雷). Mine game has the following rules:

1. There is a $N \times N$ grid.
2. Mine randomly selects **M** cells as the **hidden mines**.
3. Players do not know where are the hidden mines.
4. Then player starts to select a cell. If he is lucky, a number **K** will be printed on that cell, where **K** is the number of mines surrounding the cell. Otherwise, if the cell has a mine then it will explode and game over.
5. Player can repeat the guessing process. Finally the mine game will give the player a "you win" or "you are dead" message and the game is over.

In your program, you need meet the following requirements:

1. Run the program as "**mine** *N M*", *N* is the size of the map and *M* is the # of mines, and **mine** is the program executable name, by using command argument.
2. Write a input function that can get the player's input guess from keyboard.
3. These **M** mines are placed in the grid randomly by using random number generator.
4. Write a function to compute the number of mines encompassing a cell.
5. Write a output function that will output the grid with correct numbers associated with cells.
6. Use a clear screen function like **system("clear");**
7. #define **Nmax** 30 to see the size of the grid as $N \times N$. So, if your input number *N* is greater than **Nmax**, your program should output an error message to indicate *n* is too large.
8. You must use array pointers instead of array subscripts to access the array elements.

Point:

1. Create $N \times N$ Grid and show it . (10%)
2. You can input your guess and check its location is a bomb or not.(20%)
3. Expanding your Grid When you have not selected a bomb, you must expand your board follow winmine (踩地雷) Rule.(we have a example code , Please execute it to check your idea)(50%)
4. You need to use **system("clear")** after every guess.(10%)
5. #define **Nmax** 30 (10%).(Hint: if above problem all right and you have define **Nmax** 30 , you will get this points)
6. You must use array pointers instead of array subscripts to access the array elements , otherwise you will get 0 point.
7. updata your report to server, otherwise you will get -10 point.

8. If you will not submit your report , you get 0 point.

Command Line(You must use Parameter argc and argv)

./mine N M (Please Follow this Sequence , otherwise you will get -20 point)

Example

>./mine 3 5

? ? ?

? ? ?

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