

Work on project. Stage 2/5: Flexible mines

Project: Minesweeper

Medium 8 minutes

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Description

It's no fun when the field has the same setup every time and you know where all the mines are located. Let's generate a random configuration every time the player wants to play the game.

To improve the program, we need to let the player choose how many mines they want on the field. The player needs to input the number of mines they want with their keyboard.

Objectives

Your program should ask the player to define the number of mines to add to a 9x9 field with the message "How many mines do you want on the field?". It should then use the input to initialize the field and display it with the mines. At this point, the mines are still visible to the player; you will hide them later.

Make sure to use the following marking symbols:

- X for mines
- .

Examples

The greater-than symbol followed by a space (>) represents the user input. Note that it's not part of the input.

Example 1:

```
How many mines do you want on the field? > 10
.....X
.....X
.....X.X
X.....
.....
.....X..
XX.....X
.....
.....X...
```

Example 2:

```
How many mines do you want on the field? > 10
.....
.X.....
..X...XX
X.....
.X.....
.....
.....
X.....X
...X...X
```

Example 3:

```
How many mines do you want on the field? > 20
.X..XX...
....XX.X
...XX...
...XX.XX
.X.....X
....X...
.X..XX..
.....
.X.....X
```

16 / 16 Prerequisites

- Computer programming (4) In project
- Introduction to OOP (4) In project
- Characters (14) In project
- Switch statement (7) In project
- Declaring a method (6) In project

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Write a program

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Java

```
1 package minesweeper;
2 import java.util.*;
3
4 public class Main {
5
6     public static void initialize(char[][] array){
7         for(int i = 0; i < 9; i++){
8             for(int j = 0; j < 9; j++){
9                 array[i][j] = '.';
10            }
11        }
12    }
13
14    public static void main(String[] args) {
15        Scanner sc = new Scanner(System.in);
16        char[][] array = new char[9][9];
17        initialize(array);
18        System.out.print("How many mines do you want on the field? ");
19        int n = sc.nextInt();
20        mines(array,n);
21        printArray(array);
22    }
23
24    public static void mines(char[][] array, int n){
25        int i,j;
26        Random rand = new Random();
27        while(n != 0){
28            i = rand.nextInt(9);
29            j = rand.nextInt(9);
30            if(array[i][j] == '.'){
31                n--;
32                array[i][j] = 'X';
33            }
34        }
35    }
36
37    public static void printArray(char[][] array){
38        for(int i = 0; i < 9; i++){
39            for(int j = 0; j < 9; j++){
40                System.out.print(array[i][j]);
41            }
42            System.out.println();
43        }
44    }
45 }
46
```

✓ Correct.

Great job!

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