

The game of *Life* is intended to model life in a society of organisms. Consider a rectangular array of cells, each of which may contain an organism. If the array is considered to extend indefinitely in both directions, then each cell has eight neighbors, the eight cells surrounding it. Births and deaths occur according to the following rules:

1. An organism is born in any empty cell having exactly three neighbors.
2. An organism dies from isolation if it has fewer than two neighbors.
3. An organism dies from overcrowding if it has more than three neighbors.
4. All other organisms survive to the next generation.

Write a program to play the game of *Life* and investigate the patterns produced by various initial configurations. Some configurations die off rather rapidly; others repeat after a certain number of generations; others change shape and size and may move across the array.

NOTE:

1. For representing each organism, use "@" characters.
2. For an array of cells, use 30x30 two-dimensional array.
3. Each generation should be displayed on the screen and should be paused.
(You can use `cin.get()` library function to pause running your program.)
4. The source file should be called **life.cpp**

Input

A set of initial cells will be given using the interactive way using a keyboard.

The followings are the prompt for the input:

Please Enter the number of initial cells: 4

The position of cell is 10 10

The position of cell is 10 11

The position of cell is 10 12

The position of cell is 11 11

How many generations do you want to display? 3

Output

The program then display each generation of organisms at a time.

The 1-generation

@@@
@

Press any key to continue!!

(This picture should be displayed on the new screen.)

The 2-generation

@
@@@
@@@

Press any key to continue!!

The 3-generation

@@@

@ @
@

Do you want to do it again?(Yes/No) N