

Conway's Game of Life

Read description: https://en.wikipedia.org/wiki/Conway%27s_Game_of_Life

Implement command line version of it on 8x8 toroidal grid on a platform of your choice.
Expected behaviour based on the command line argument is demonstrated below.

The image displays four terminal windows, each showing an 8x8 grid of the Game of Life. The first window, titled 'C:\code>gol RANDOM', shows a random distribution of 'X' cells. The second window, titled 'C:\code>gol bLinkEr bLinkEr', shows a pattern where 'X' cells are arranged in a way that might represent a blinker. The third window, titled 'C:\code>gol toad toad', shows a pattern that might represent a toad. The fourth window, titled 'C:\code>gol BEACON BEACON', shows a pattern that might represent a beacon. Each window shows the grid after four generations.

It always prints exactly 4 generations of the game steps.

Next page shows our simplistic implementation...

```

1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <string.h>
4
5  // https://en.wikipedia.org/wiki/Conway%27s\_Game\_of\_Life
6
7  // Any live cell with fewer than two live neighbours dies, as if by underpopulation.
8  // Any live cell with more than three live neighbours dies, as if by overpopulation.
9  // Any dead cell with exactly three live neighbours becomes a live cell, as if by reproduction.
10 // Any live cell with two or three live neighbours lives on to the next generation.
11
12 enum { N = 8 };
13
14 typedef board_t // Square board exactly 8x8 with toroidal topology.
15
16 #define life_cell(b, x, y)
17 #define set_cell(b, x, y, v)
18
19 board_t BLINKER
20 board_t TOAD
21 board_t BEACON
22
23 static board_t b;
24
25 static void print() {
26
27
28
29
30 }
31
32 static void random() {
33
34
35
36 }
37
38 static void generation() {
39
40
41
42
43
44
45
46
47
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49
50
51
52
53
54
55
56
57 }
58
59 static void init(const char* pattern) {
60
61
62
63
64
65
66
67
68
69
70 }
71
72 int main(int argc, const char* argv[]) {
73
74
75
76     return 0;
77 }

```

Extra bonus challenge. This is the size of our release executables. Can you make yours smaller?

```
C:\code\gol\bin>find . -name "*.exe" | xargs ls -l
-rwxrwxrwx  1 user  group    4048 May 31 18:30 ./x64/gol.exe
-rwxrwxrwx  1 user  group    3328 May 31 18:30 ./x86/gol.exe
```

(with still human readable source code)... 😊

<https://github.com/konmik/Life>