GAME OF LIFE REPORT

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What we did?

The macrocosm of the Game of Life is an illimitable, two-dimensional orthogonal grid of square cells, each of which is in one of two possible states, live or dead, (or populated and unpopulated, respectively). Every cell interacts with its eight neighbours, which are the cells that are horizontally, vertically, or diagonally adjacent. At each step in time, the following transitions occur:

Any live cell with fewer than two live neighbours dies, as if by underpopulation. Any live cell with two or three live neighbours lives on to the next generation. Any live cell with more than three live neighbours dies, as if by overpopulation. Any dead cell with precisely three live neighbours becomes a live cell, as if by reproduction. These rules, which compare the comportment of the automaton to authentic life, can be condensed into the following:

Any live cell with two or three live neighbours survives. Any dead cell with three live neighbours becomes a live cell. All other live cells die in the next generation. Similarly, all other dead cells stay dead. The initial pattern constitutes the seed of the system. The first generation is engendered by applying the above rules simultaneously to every cell in the seed; births and deaths occur simultaneously, and the discrete moment at which this transpires is sometimes called a tick. Each generation is a pristine function of the preceding one. The rules perpetuate to be applied perpetually to engender further generations.

In tardy 1940, John von Neumann defined life as an engenderment (as a being or organism) which can reproduce itself and simulate a Turing machine. Von Neumann was cogitating an engineering solution which would utilize electromagnetic components floating arbitrarily in liquid or gas.This turned out not to be authentic with the technology available at the time. Stanislaw Ulam invented cellular automata, which were intended to simulate von Neumann's theoretical electromagnetic constructions. Ulam discussed utilizing computers to simulate his cellular automata in a two-dimensional lattice in several papers. In parallel, von Neumann endeavored to construct Ulam's cellular automaton. Albeit prosperous, he was diligent with other projects and left some details unfinished. His construction was perplexed because it endeavored to simulate his own engineering design. Over time, simpler life constructions were provided by other researchers, and published in papers and books.

Incentivized by questions in mathematical logic and in part by work on simulation games by Ulam, among others, John Conway commenced doing experiments in 1968 with a variety of different two-dimensional cellular automaton rules. Conway's initial goal was to define a fascinating and capricious cell automaton.

What tools we used

Sdl and Sdl2 library used for running in Sdl mode.

1.ansi.c

2.ansi.h

3.cell.c

4.cell.h

5.celllist.c

6.celllist.h

7.cunit_tests.c

8.main.c

9.mainsdl.c

10.sdl.c

11.sdl.h

12.CmakeTxt

Encountered difficulties

First time when we download new SDL version on ubuntu 18.04 we faced error message.After researching this issue we found out that last version of Sdl cannot be fixed on Ubuntu 18.04.We download 20.04 version

What we learned

1.Cmake

2.working on GitHub(GitLab)

3.Advanced C(we improved)

4.working with Cunits

5.Integration

6.Others