



Requirements Communication

Conway's Game of Life

“ The Game of Life, also known simply as Life, is a cellular automaton devised by the British mathematician John Horton Conway in 1970. The "game" is a zero-player game, meaning that its evolution is determined by its initial state, requiring no further input. One interacts with the Game of Life by creating an initial configuration and observing how it evolves. ”

— Wikipedia

Imagine an infinite two-dimensional plane of cells. Each cell can be alive or dead. The plane of cells evolves in generations. The state of a cell in generation $n+1$ is determined by the state of its neighbours in generation n , based on four rules:

- Any live cell with fewer than two live neighbours dies, as if caused by under-population
- 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 overcrowding
- Any dead cell with exactly three live neighbours becomes a live cell, as if by reproduction

Class Exercise

In your groups, elect one person to be the Product Owner. This person has the vision for your implementation of the Game of Life. The rest of the group will be Developers. The Product Owner is responsible for communicating the requirements of the system to the Developers, and for ensuring that the implementation is correct. The Developers are responsible for designing an implementation of the Game of Life based on the Product Owner's instructions.

To Think About

- How easy was it for the Developers to understand what the Product Owner wanted?
- Were the Product Owner's instructions sufficient to design an implementation of the Game of Life?
- What tools did the Product Owner use to convey the requirements for the implementation?
- Did you reach a shared understanding of the expected behaviour of the system?
- How well do the requirements document the expected behaviour of the system?
- How easy was it for the Product Owner to verify that the implementation is valid?

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