Game of Life

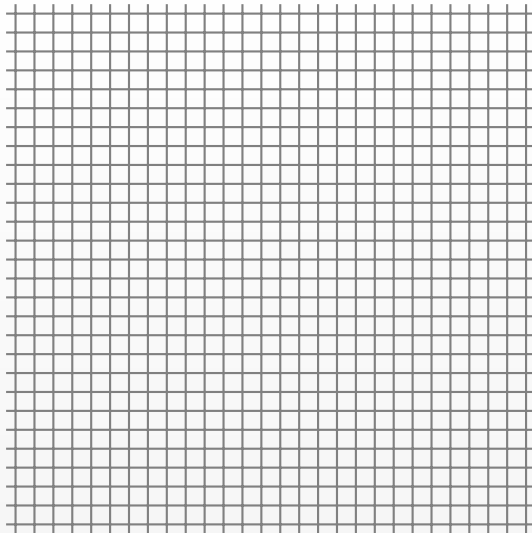## Peter Rowlett

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Cellular automata

► A type of 'zero player game'.
► Grid of cells, e.g. these are coloured or empty.
► Rules determine how the states of the cells change.

Game of Life

- ▶ Played on an infinite grid of square cells.
- ▶ Each iteration the cells change pattern depending on a set of rules.
- ▶ Its evolution is only determined by its initial state.
- ▶ You interact with the Game of Life by creating an initial configuration and observing how it evolves.

The Rules of Life

▶ Rules:
1. Any coloured cell with fewer than 2 coloured neighbours is emptied (loneliness);
2. Any coloured cell with more than 3 coloured neighbours is emptied (overcrowding);
3. Any coloured cell with 2 or 3 coloured neighbours remains;
4. Any empty cell with exactly 3 live neighbours is coloured.