

"GAME OF LIFE"

Andrew & Grehg

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GREGG HILSTON

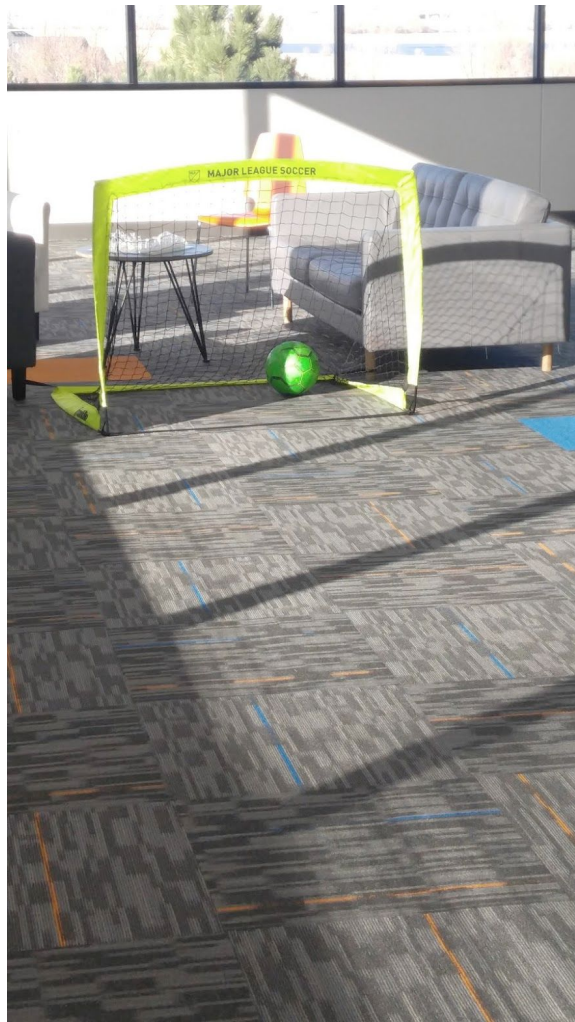


maddwire®



SWAT







madwire

MOBILE TEAM



GAME OF LIFE

goo.gl/eZhkwp

Break off into groups, spend ten minutes playing with the games and try to answer the following questions:

1. What does this represent?
2. How does it work?
3. What patterns did you notice?

If you find something cool, click “Export” and “Link” and

GAME OF LIFE

- a cellular automata
- Created by John Conway in 1970, a British mathematician
- Turing complete



RULES

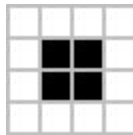
- Rules:
 - Underpopulation:
 - Any live cell with fewer than two live neighbours dies
 - Survival:
 - Any live cell with two or three live neighbours lives
 - Overpopulation:
 - Any live cell with more than three live neighbours dies
 - Reproduction:
 - Any dead cell with exactly three live neighbours becomes a live cell

LIVE DEMO

Lets implement:

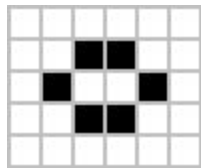
1. Number of live neighbors
2. Underpopulation rule
3. Survival rule
4. Reproduction rule
5. Overpopulation rule

STILL LIFE - BLOCK



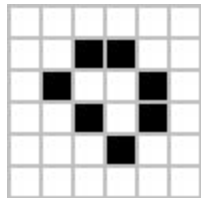
[Example](#)

STILL LIFE - BEEHIVE



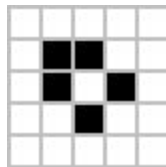
[Example](#)

STILL LIFE - LOAF



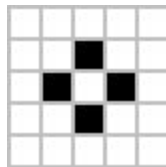
[Example](#)

STILL LIFE - BOAT



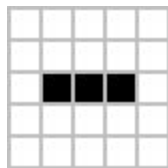
[Example](#)

STILL LIFE - TUB



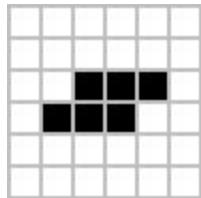
[Example](#)

OSCILLATORS - BLINKER (PERIOD 2)



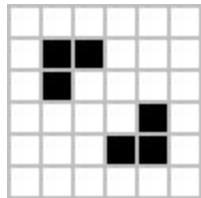
[Example](#)

OSCILLATORS - TOAD (PERIOD 2)



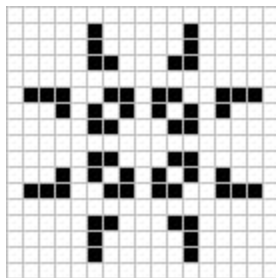
[Example](#)

OSCILLATORS - BEACON (PERIOD 2)



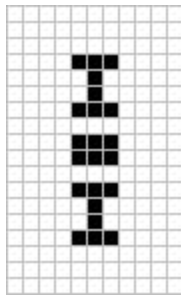
[Example](#)

OSCILLATORS - PULSAR (PERIOD 3)



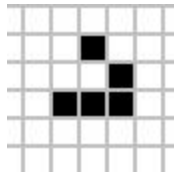
[Example](#)

OSCILLATORS - PENTADECATHLON (PERIOD 15)



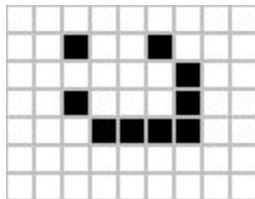
[Example](#)

SPACESHIPS - GLIDER



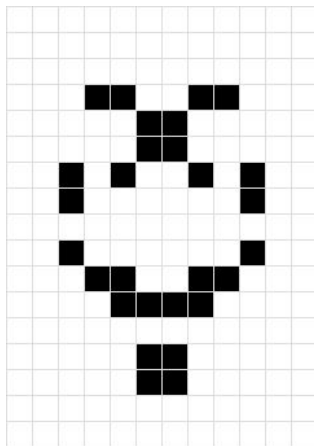
[Example](#)

SPACESHIPS - LIGHTWEIGHT SPACESHIP



[Example](#)

SPACESHIPS - NEW SPACESHIP



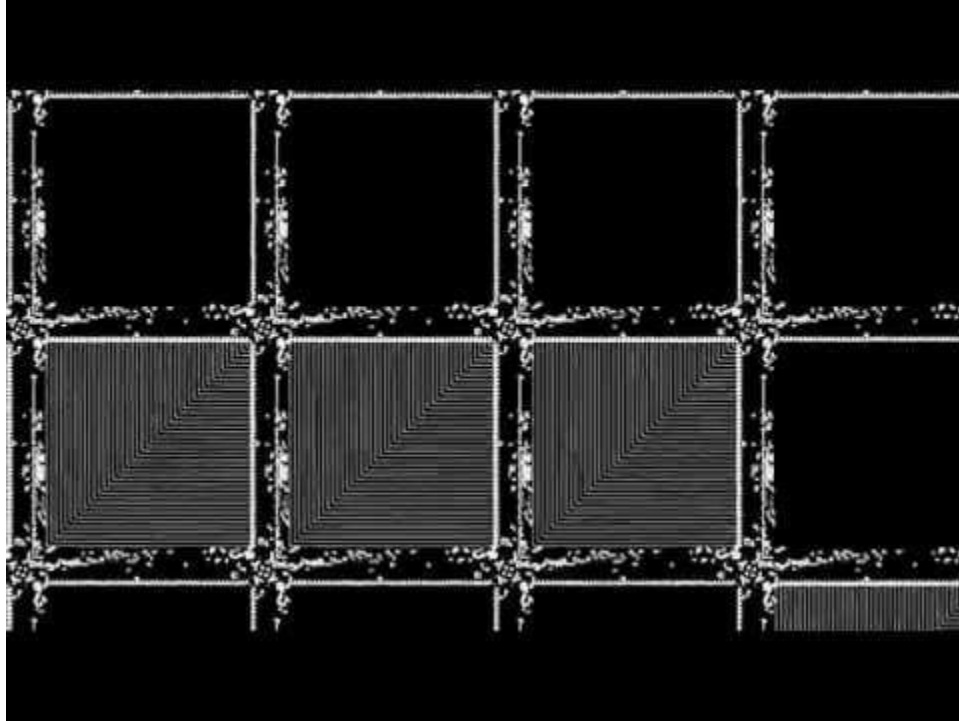
[Example](#)

COOL SCENE - GLIDER GUN

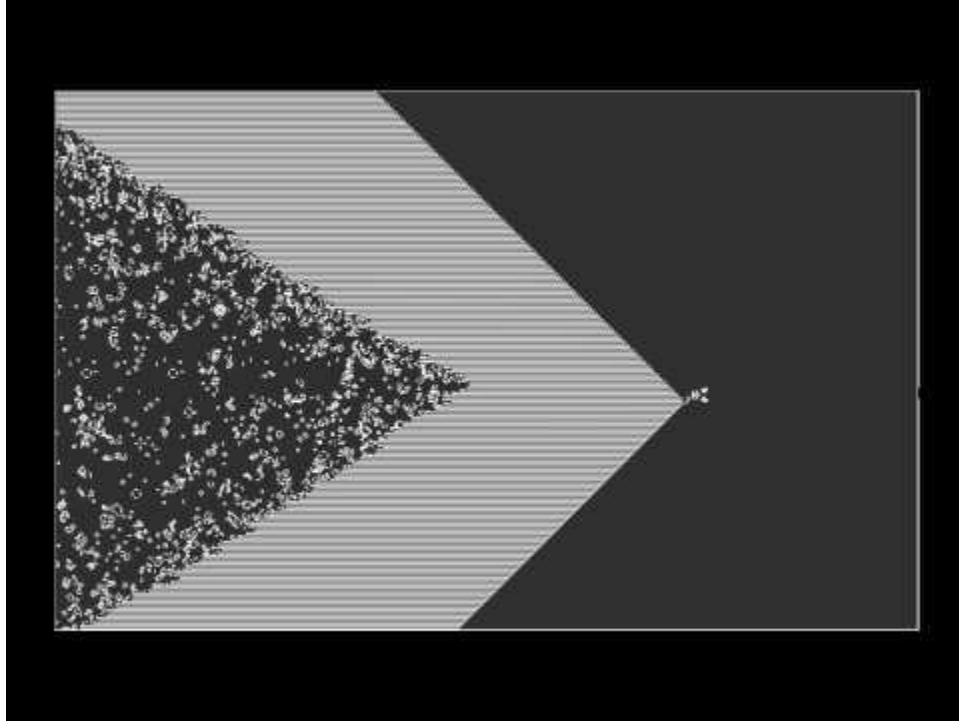


[Example](#)

LIFE IN LIFE



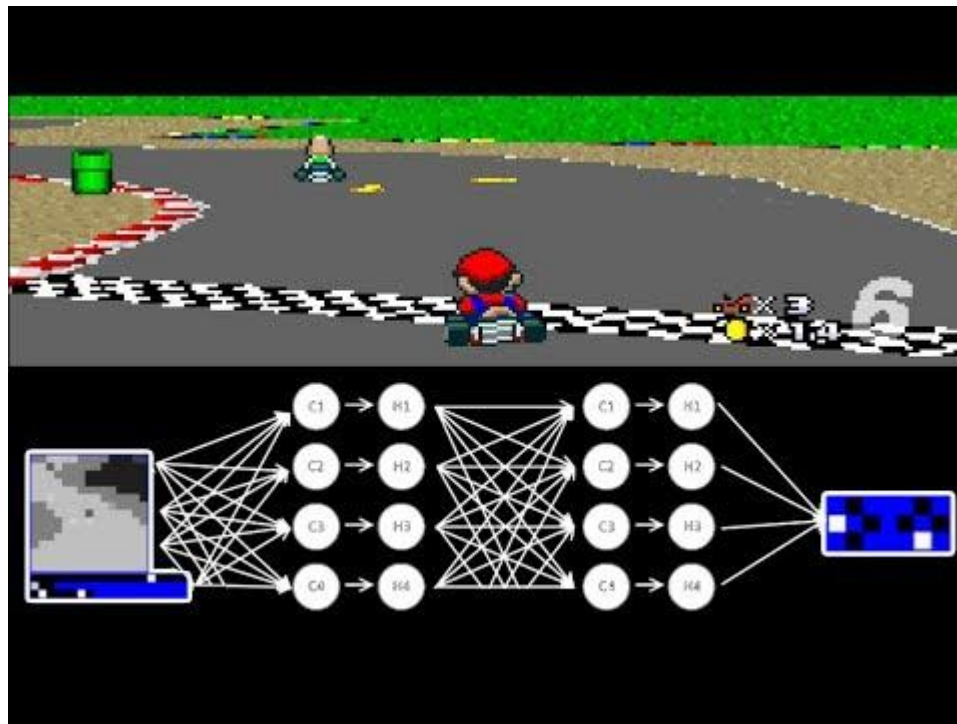
EPIC CONWAY'S GAME OF LIFE



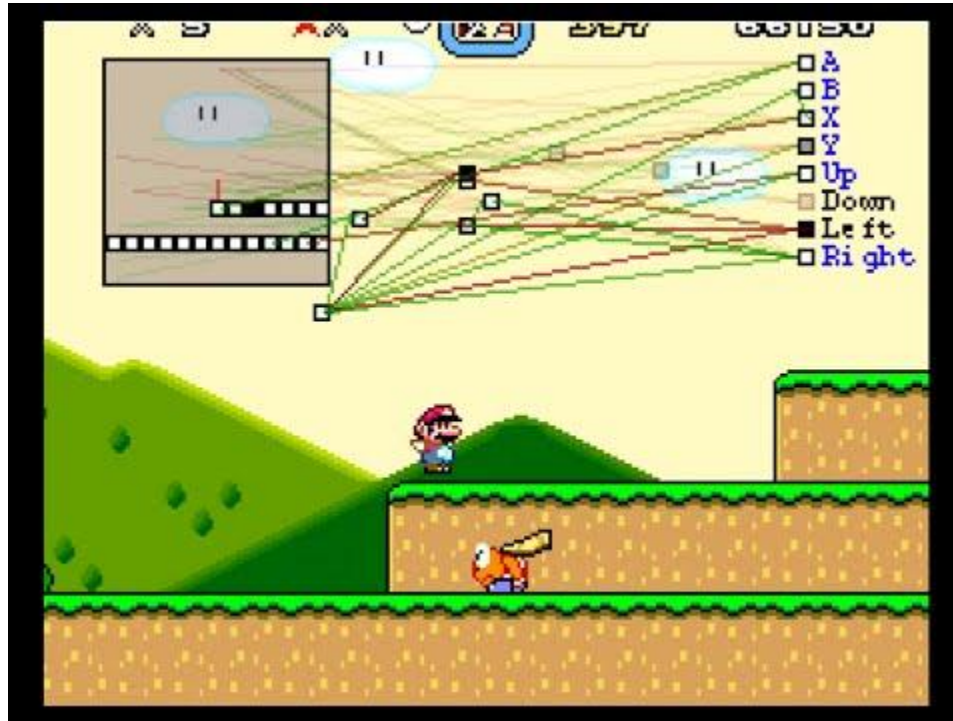
GAME OF LIFE IN MINECRAFT



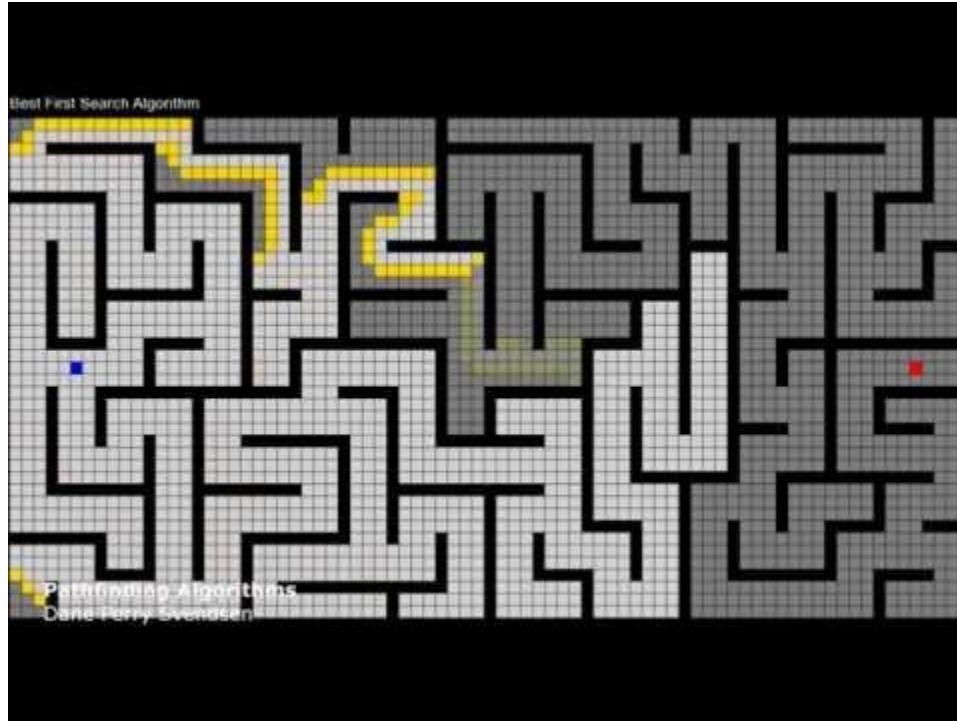
MARIFLOW - SELF-DRIVING MARIO KART



MarI/O - Machine Learning for Video Games



PATHFINDING ALGORITHMS



SLIME MOLD PATHFINDING



PROGRAMMING USAGES

- Video game development
- Virtual reality
- Augmented reality
- Home automation
- Minecraft redstone
- Pretty much every industry uses software
 - Computer graphics and animation
 - Avionics
 - Internet connected devices (internet of things)