

# Prisoner's Life

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# What is Prisoner's Life?

Prisoner's Life is a mash-up of Prisoner's Dilemma and Conway's Game of Life.

This was presented previously at Lambda Lounge, by Mario Aquino and Jessica Kerr.

You can see the code for this project at: [Github](#)

You can see these slides at: [Github](#)

# Rules of Prisoner's Life

- If no surrounding cell has cooperated with you this turn, you die.
- If your score is greater than the set reproduce score (currently 20 in my examples) then you reproduce.
- You use your strategy to interact with all surrounding cells. The result of this strategy compared to your neighbors' strategy determines how much score increases.

# Prisoner's Life Strategies

A strategy either returns 0 (cooperation) or 1 (defection).  
The strategy can only make a decision based on previous moves of the opponent's strategy.  
Score increases are determined by these results.

# Prisoner's Life Strategies

- If you cooperate and your opponent defects, you get 1 point while your opponent gets 5 points.
- If you defect while your opponent cooperates, you get 5 points while your opponent gets 1 point.
- If you and your opponent both cooperate, you both get 3 points.
- If you and your opponent both defect, you both get 1 point.

# Default Strategies

- Chump strategy(\*): Always cooperate.
- Mean strategy(!): Always defect.
- Tit-for-tat-strategy(&): Do whatever your opponent did last.
- Grudge strategy(^): Defect if your opponent has ever defected.