Class: CS-423 Rust
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Project Topic Area: Instrumented biological simulation
Project Name: coral-reef-simulation
Github repository: https://github.com/arlysswest/coral-reef-simulation
The repo will have a `README.md` describing the project.
License: MIT + Apache2.0

Project Vision

This project would simulate a coral reef and coral reef restoration. It would include problems that coral reefs face and how they negatively affect the health of the reef. Additionally, it would include restoration efforts and how they positively affect the health of the reef.

The health of the reef would be measured by coral cover%, algae cover%, ph, and water temperature. Restoration tools would include artificial substrates, coral gardening, micro-fragmentation, and removing pollution. Problems would include pollution, invasive species, C02 emissions, physical damage from storms, and overfishing.

In this program time is going to be discrete. I am going to build a text-based version first. I will research giving it a visual representation and implement a visual version if I have the resources to do so. The visual version and text-based version will have their own branch on github.

The user would pick tools to improve the health of the reef. Problems will occur at random that negatively affect the health of the reef. As tools are applied and problems occur, the statistics will update with each. There will be a more info option if the user needs more information to make a decision. There will be positive messages when the user improves the health of the reef.