

ICS4U Summative Scope Plan - Varun, Julien, Wesley

Part 1: Description of Problem and Needs Assessment

Project Background

Simulate the natural interaction between marine organisms. The project will also allow for the influence of human actions and natural disasters among other events on the ecosystem.

Assessment of Needs

Stakeholders

- Group members --> Well documented and structured code, good work ethic, and strong collaboration to learn new concepts and develop a thorough simulation program.
- Teacher --> Evaluate the final project. Have the development team demonstrate their understanding of course concepts and willingness to push themselves beyond their current knowledge.
- Users --> Be able to easily understand and use the program. Require a friendly user interface, along with good instructions, and slick program.

Part 2: Vision of Solution

Vision Statement

Create an interactive Java game that simulates a simplification of a marine ecosystem to educate users in a fun way about marine life, as well as the impacts of human actions.

Features to be developed

- Mouse interactive GUI panel displaying organisms and interactions
- Implementation of cellular automaton rules displaying interactions between organisms
- Multiple types of organisms
- Locally saved and loadable patterns for equilibrium, extinction, erratic behaviour, etc.
- Variable simulation speed
- User triggered events (eg. algal blooms, natural disasters) --> Will also randomly occur
- JavaDoc

Features that may be developed

- Network connectivity for local and/or remote multiplayer game
- Changing of environmental factors (eg. water temperature, pH, dissolved oxygen)
- Users allowed to tweak game rules to see different possibilities
- Graphs displaying population levels of the various organisms
- Using sprites to visualize the organisms

Features that won't be developed

- 3D Graphics
- Action animations (eg. eating animation)