Animal Simulation

lab final project

1 Introduction

1.1 Purpose of the Program

The purpose of the program is to simulate the habitat, movement and interactions of some living creations like animals and plants in an environment.

1.2 Design Aims

1. The environment will be designed in a 2D.
2. Animals move 3 grid locations daily. However, flying animals move 5 locations.
3. Insects move 1 grid.
4. To avoid complexity, All animals, insects and plants have 2 days as their maximum hunger.
5. All species will die at the end.
6. Dead species will not be shown in the environment.
7. All species have maximum age.

1.3 Some Definitions

1. NewAnimal : NewAnimal is a class the that refers to objects which can move to hunt other animals or plants. Their lifetime can end when being eaten by other animals, reaching maximum age, or by hunger.

2. Vegetation : Vegetation is a class the refers to the objects which cannot move. However, they can be eaten by some animals. The lifetime of vegetation can end by being eaten or reaching maximum age.

1.4 References

Prairie Food Chain Diagram. Saskatchewan Wildlife Federation. (as being referenced to in the lab)

Animal Simulation

lab final project

1.5 Overview

The program simulates the habitat, movement and interactions of a variety of animals in an environment. The system will simulate the movement of animals, and the consumption of plants and other animals by the animals. The program will initialize with a variety of animals and plants existing in the environment. Animals will move and hunt daily. The travel capacity will vary from an animal to another. Plants should be consumed to die. Animals will die once they get hunted, or they die out of hunger. At the last day, all species will be dead.

2 Design

A class diagram will illustrate will be provided in repository.

3 Program

Netbeans 8.2 is the program used for this simulation program.

4. Privacy and Security

The program will be exported to Github in a public repository. Therefore, the content will be exposed to the public if being found.