Project 4 Critters 1 README

Akhil Mujje dam4335
Sriram Ravula sr39533

Project 4 Critters implements the Model-View-Controller system and involves the use of Critters in a 2-D world. Each critter behaves slightly differently in its movement and abilities. Calling doWorldTimeStep executes one step for all the alive critters on grid and causes interaction between them. When critters encounter another one in the same position, they either fight or flee. When a fight occurs, the losing critter dies and transfers some of its energy to the winner. Some may have the ability to reproduce, which creates child critters that will become "adults" the next step.

We created Critter1, Critter2, Critter3, and Critter 4 classes. All these Critter classes extend the Critter class and override its doTimeStep, fight, and toString methods. They also all have a private int field *direction*, which specifies the direction the critter is facing to determine its next position when walk or run are called. Critter1 walks in a random direction every step, and during an encounter, it will not want to fight and try to walk away in the same direction. Critter2 stays still every step, but during an encounter, it will want to fight although it will first try to run away. Critter3 will run every step but in the same direction (randomly set when created). During an encounter, it will not want to fight, but it will reproduce and make a new child Critter. Critter4 will run in a random direction every time step, and in an encounter, it will not want to fight but will attempt to run. Each of these Critter classes will return a toString based on their respective number (e.g. Critter 1 will return a "1" and Critter4 will return a "2"). All critters that are "alive" are held in an ArrayList called population.