FIT2099 Preliminary Design Documentation

Michael:

Stegosaur and Allosaur will inherit classes Herbivore and Carnivore respectively, which will then inherit Dinosaur.

Hungry Dinosaurs:

Dinosaur hungers will be implemented using behaviours. When a dinosaur is hungry (food level reaches a certain point) , the HungryBehaviour will be called, the message that a Dinosaur is hungry will be displayed from here. The HungryBehaviour will then call MoveToFoodAction which will make the Dinosaur move to the closest food source. Once next to a food, the NearFoodBehaviour will trigger and call either CarnivoreEatAction or HerbivoreEatAction depending on what the Dinosaur eats. NearFoodBehaviour's method will return an integer that is returned from the EatAction's method. The integer is the food level that is gained from either the food.

A Dinosaur becomes unconscious with the UnconciousBehaviour, which is triggered when the food level of Dinosaur is 0, after 20 turns, the DieAction class's method will be called if the Dinosaur is still unconscious.

Breeding:

When a Dinosaur is well-fed and ready to breed, the BreedBehaviour will trigger. Within the BreedBehaviour the Dinosaur will follow and move towards another Dinosaur of the same species and opposite sex. The BreedAction will then trigger where an Egg of the species type will be produced 10 turns later. When an Egg is ready to hatch, the HatchBehaviour class's method is called and the HatchAction's method occurs.

Baby Dinosaur growing into adult Dinosaur is handled within the Dinosaur class itself. There will be a boolean indicating if the dinosaur is an adult or not and after 30 turns the boolean will turn from false (for baby) to true (for adult).

Allosaurs:

When an Allosaur is near a Stegosaur, the AttackBehaviour's method is called and an AttackAction objected is created and its method called.

A dead Dinosaur will produce a DinosaurCorpse object (which is a CarnivoreFood) at the spot it died through the DieAction's method. The Allosaur can then eat that. If a DinosaurCorpse is within range of an Allosaur, the NearFoodBehaviour is triggered and it

will move towards the food with the MoveToFoodAction class. When next to the corpse, CarnivoreEatAction is triggered and the Allosaur eats the corpse. Eggs also inherit from the CarnivoreFood class since Allosaurs (and other carnivores if any) can eat it.