

Rewritten design rationale

Allosaur:

Dinosaur:

DirtSquare:

ArrayList is used because the size of ArrayList is not fixed as DirtSquares can hold multiple objects.

Egg:

Fruit:

Grass:

Grass will be contained within the ArrayList of DirtSquare, and Grass will have a location which will be coordinates of its corresponding DirtSquare.

Grass that is harvested will be removed from the DirtSquares ArrayList.

Grass instances will be deleted when any of the following happens:

- Grass is harvested by Player
- Grass is grazed on by Stegosaur

Design reasoning: We chose to delete the Grass instance when it is harvest by a player so that there would be no confusion on whether Grass should still remain on a DirtSquare. Upon harvesting, a new Hay instance will be created and added to the Players inventory.

Similarly, we chose to delete a Grass instance when grazed on by a Stegosaur to mimic it being eaten by the Stegosaur and so that the DirtSquare resumes to being simply dirt.

Hay:

Hay is created and stored within the JavaArray of Inventory whenever a grass instance is harvested by a player. It is also stored in the HashMap of the VendingMachine with its value being 20 eco points. A Hay instance is deleted and removed from the players Inventory when being fed to a Stegosaur.

Design reasoning: A Hay instance is deleted completely during feeding to mimic food being eaten and digested. This increases the Stegosaurus' food level by 20.

We initially thought of making Hay inherit from the Grass class but realised that this wouldn't be necessary as we did not need to add methods to the Hay class that were similar to the Grass class.

Inventory:

Inventory contains items collected by the player. Each item consumes 1 space of the inventory. When grass is harvested by the player, hay is created in the player's inventory.

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Design reasoning: JavaArray is used because the size of inventory needs to be fixed to maintain the fairness of the game. Players can't collect items when the inventory is full.

LaserGun:

MealKit:

Player:

Stegosaur:

Tree:

Tree's may also be contained in the ArrayList of DirtSquares. This is to help us decide the likelihood of adjacent DirtSquares growing Grass.

Tree's will also contain an unlimited number of Fruit. We chose to make this number unlimited as it helps us standardize the chances of the Tree dropping Fruit and a Player picking Fruit.

Design reasoning: If we had set a number of Fruit contained in a Tree, the chances of a Player picking fruit would be dependent on the number of fruit available, and we wanted to prevent this number from constantly changing. The same reasoning was applied with the dropping of fruit.

TurnCount:

VendingMachine:

Vending machine contains a number of items which are stored in a hashmap. Items in vending machine are unlimited as there is only one vending machine in the whole map.

Design reasoning: Hashmap is used because hashmap has a faster access to the price corresponding to the item.

World:

#Hay