

## **How these classes relate to and interact with the existing system**

The new plant and bushes will extend the ground as the tree has already extended the ground and it helps us to distinguish them from dropped items also, we can add the chance of the bush growing easily if the adjacent dirt have bushes. The fruits will drop from the tree and the new bushes and they will extend item so that it can be picked up by player and be sold by vending machine so we can reuse it. The vending machine will have a list of items that they sell and it also extends the ground so we can display it like trees and bushes. The dinosaur classes will have a food level we didn't put it in actor as we can't change the engine and the player is counted as actor and he doesn't have a food level. The Feed and breeding will be a behaviour that they can switch to depending on their food level for easy implementation. Ecopoints will be a class instead of stored in a player so it can be called easier when we need to add points to it when something happens using a static method.

## **How the (existing and new) classes will interact to deliver the required functionality**

The dirt, tree, and bushes will extend the ground and we give each dirt a functionality to grow a bush with added chance by checking adjacent dirt if they have bushes. The tree can drop a fruit to the ground which will become a dropped item in the ground so the player can take it using the existing action. The hunger level of the dinosaur and their health will be the same so that it can tie in easier with death and allosaur attacking herbivore could be easier intergrated. Hungry dinosaur which happens when their hunger level drops to a specific point will enter the feeding behaviour which will prompt them to go to the nearest food source and start eating, and if they reached a suitable level of food level they will enter a breeding behaviour instead where they will seek a mate to reproduce. The female will be tagged with pregnant using enum which will be checked during playTurn() to increase a counter to count how old the fetus is and will drop an egg after a while which will be a dropped item that the allosaurus can eat. The eco points will be a class so we can get call it easier from global method. It'll be called and added at the end of specific actions where they can be used on a vending machine that will be placed in the middle of the player starting house which extends the ground so the player can interact with it. We check the player current Ecopoint and return the list of buy action that the player can afford so we don't need to check if the player have enough money to do that action. For the allosaurus implementation its mostly the same except we change the diet which is an enum list of suitable food and will instead chase prey behaviour when its hungry. When a stegosaurus survives an attack they get tagged with the survived Boolean so that they can't be attacked again for a while as the allosaurus will check if the survived is true before attacking it and the brachiosaurus will not be included in their diet list so it wont go after them. For death we simply put them on unconscious if their food level reaches zero and stays unconscious for a number of days. Their corpse will extend the ground for a number of days before disappearing.