

Final Project Proposal Cucumber Farm

General Description of Project:

Our final project proposal is to create an in-terminal simulation of cucumber farming. The goal of the game is to generate as much profit as possible in 15 “weeks.” Each week is defined as a stage in the game.

At the beginning of the game, the user starts with 4 plots of land and 2 quick-growing cucumber seeds.

At the beginning of each stage, the user interacts with his or her farm by planting, fertilizing, and/or harvesting his or her cucumbers, or he/she can purchase seeds of different cucumber species. While cucumber species that are highly nutritious grow, they also generate money. When the user “harvests” cucumbers, he or she automatically sells them for money at a price that depends on the value of the cucumber based on the amount of time needed to grow. More nutritious cucumbers are more costly. The user may also spend his or her money on more plots of land.

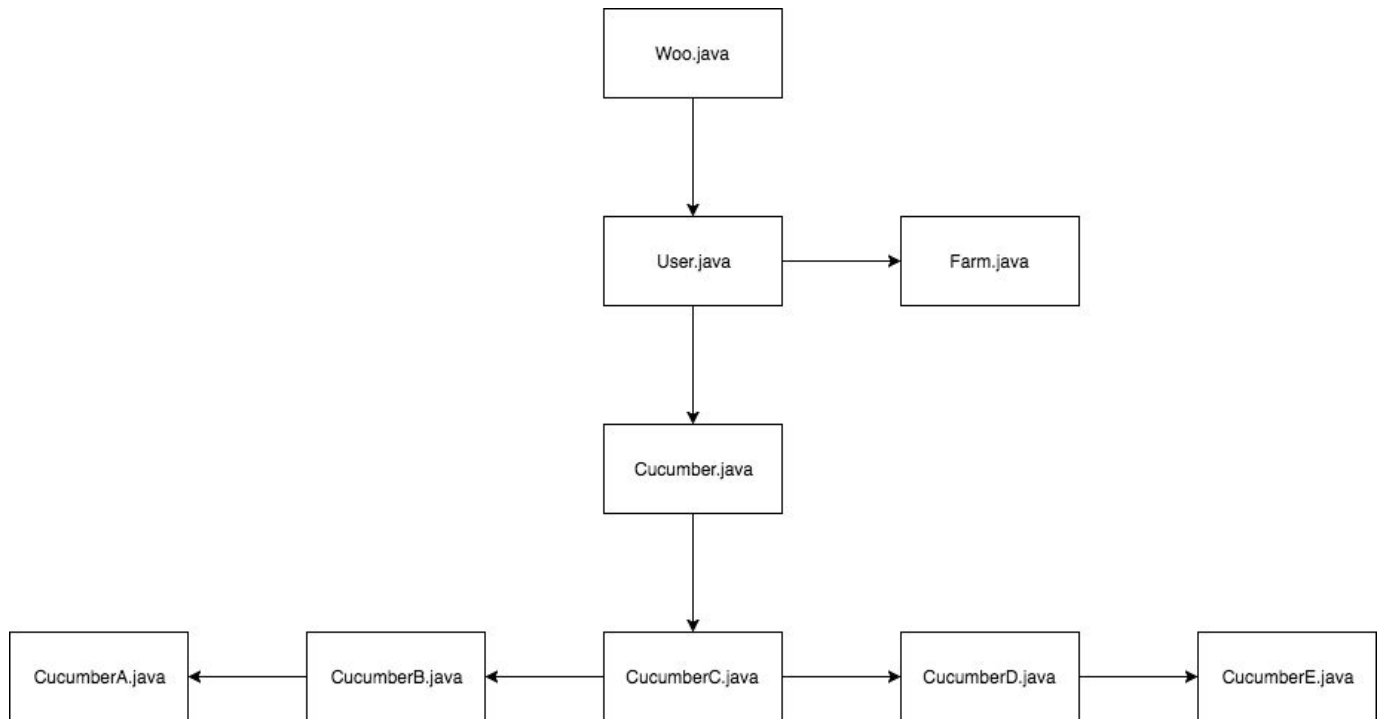
If the user attempts to plant in a plot of land he or she does not own, he or she must either pay a fine or “go to jail” (the game ends).

The game must end when the user has no money left or 15 weeks have elapsed.

Prioritized To-do List and Rough Timeline:

1. Have a fully function game (Done by Friday, 1/12)
 - a. Create the farm plot
 - b. Create the different types of cucumbers as subclasses to a cucumber superclass
 - c. Code the cycling through of the stages of the game
2. Begin Error Handling (Done by Sunday, 1/14)
 - a. Address what to do if the user input doesn't comply with what it should be
3. Add Elements of Randomness (Done by Tuesday, 1/16)
 - a. Try to make sure that every game is different
4. Add any other intricacies/ideas we come up with

What our OOP hierarchy will look like:



Concepts Addressed in Our Project:

- Accessors and mutators
- User input - Propels the game forward by allowing the user to choose next action
 - Uses Keyboard.java for error handling
- 2D arrays - Farm class manage the data in the 2D array that represents the farm
- ArrayList - the farm 2D array will be an array of ArrayLists
- Loops - used to modify and maintain the farm 2D array
 - used to determine when the game ends
- Abstract Classes and Inheritance - Used in Cucumber hierarchy to represent subspecies
- Inherited method overriding - Each method in Cucumber species subclasses inherited from the Cucumber abstract class will implement the method according to its properties
- Math.random() - Used to randomize the amount of money the user starts with