

## **Evergreen Project: Socially Responsible Computing**

Jacob Carrasco, Kyle Fong, Jason Lin, Danny Hasen, Josh Guzman

Cal Poly Pomona

CS 2400.02-1: Data Struct Adv Programming

Inst. Qichao Dong

September 28, 2025

## **Evergreen Project**

### **Contributor Names & GitHub Usernames**

- Kyle Fong - kfmrc0
- Jacob Carrasco - Gary-Fox
- Danny Hasen - DannyHasen
- Jason Lin - Ancidia
- Josh Guzman - [guzmanthegreat](#)

### **What We Should Expect**

To help a local, sustainable urban farm keep track of when seeds are planted and when they are harvested, we will be implementing a seed inventory management system. This system will be built using Swing, developed for IOS devices, and will use an arraylist as its primary data structure.

### **The Problem In Detail**

The local Lopez urban farm spends many man-hours manually logging in every seed they buy and how many pounds of produce they give away. Though the most direct and easiest solution for a farm whose source of electricity is a diesel generator, this inefficiency can be greatly improved upon. Distinct issues relating to inventory management not being able to easily notify customers about which seeds may or may not be planted, or how long they have been planted. Not always being sure when, on average, certain crops are ready to harvest after planting (Crop period). Not being able to track which seeds thrive best in which season. The farm's

primary spending comes from the purchasing of seeds, so being able to keep track of how many seeds are in inventory, are planted, and have been harvested would likely improve their ability to improve their overall budgeting. There is also the significant hurdle that the Lopez Urban Farm has no central computer; the most familiar and used digital technology on site is a dedicated work iPad.

### **Our Group's Solution**

Our solution will be the construction of a seed inventory management system, one that can be manually logged by Lopez Urban Farm Volunteers and Bianca Ustrell herself. Users should be able to add new seed types, including the option to add the expected average crop period of seeds, and be able to add entries based on other entries. Such as “potatoes” and “red potatoes,” where red potatoes should inherit the basic information that was given to potatoes if the users wish to do so. Users should be able to log the date these seeds were planted and when they were harvested. Users should be able to sort through seeds based on their growing season. Users should also be able to calculate the average length of a seed's crop period based on the logged entries within our program, adjustable to different periods of time. For example, “What is the average crop period for Tomatoes given the past 3 years?” should be a valid job for our system to fulfill. We will also develop the data structure so that future developers may add more features to our system with minimal hassle. For instance, using humidity levels to adjust crop periods based on the optimal growing conditions of said crop, or keeping an inventory of non-seed items such as chicken or goat feed.

We will be using a Java Spring framework or the Swing coding language to make our code compatible with IOS devices, including iPads. We will also attempt to make our application

available to Mac devices, namely computers and laptops, so when the Lopez Urban Farm finally gets a dedicated computer, they will not need a new system to keep track of their seeds.

### Interface

Information is gathered and computed from arraylists, and then sent to the user to resemble a spreadsheet or table.

### Data Structure

#### ArrayList

#### enum GrowingSeasons

- “WINTER, SUMMER, FALL, SPRING”
- Public string toString()

#### class Crop()

- String cropName
- Int CurrentAmount
- Int ManualAverageCropPeriod (in days, separate from system calculations)
- GrowingSeasons cropSeason

Our system will need to hold onto data spanning several years

Some sort of file saving/reading system.

Where crops are planted will be represented as belonging to numbered plots. “Plot 1, Plot 2,” “Plot 3,” the Lopez Urban Farm will be consulted on this feature.

Further implementation will be adapted to our needs as the project develops

### **Our Deliverables and Goals**

#### **-Deliverable(s)**

- An IOS application to input/log what, when, and where crops are planted, along with what was harvested when.

#### **-Goals**

- To give the Lopez Urban Farm an immediate and practical system, given their current technological capabilities
- Have our application running before Nov 23
- Make a commendable effort to achieve goals
- Gain experience from applying coding practice and theory to real-life situations.

### **Evergreen Project Budget**

- Money for gas may be necessary given potential trips to the Lopez farm, but such costs can be eliminated through email or phone call exchanges.
- Several hours of work.
- A mild increase in cortisol among the project members

### **Conclusion**

We will design and implement an inventory management system tailored to the seed needs of the Lopez Urban Farm and develop it so that it is not only immediately useful but can also serve as a framework for greater features in the future