Project 7 - Final Report

Final Project Name: Happy Go Farming
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Final State of System Statement

There were very few functional changes that we had to make from the original plan. One was the lack of implementation of the difficulty/level system. We did not get to the implementation of this feature due to prioritizing other features of the game. Another change was a slight tweak on the delegation of item storage. We found it to be a lot more streamlined if the Garden plots could hold all items rather than just plants. And finally, we were also unable to implement a system where the user could see the top 5 high scores of all time because this was low in our priority list, so we decided to omit it.

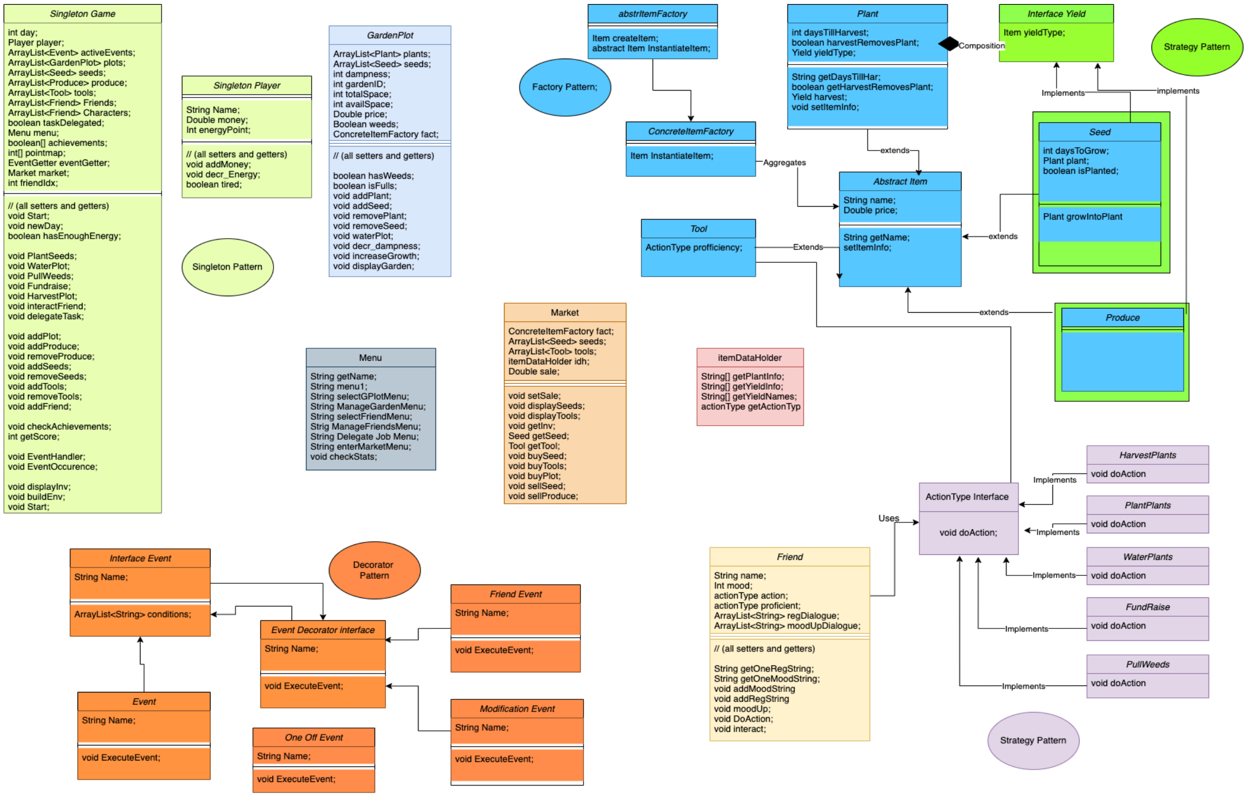
On the other hand, our team was still able to implement many components that adhered to the original plan. All of the items (plants, seeds, tools, garden plots) were completed; we designed a functionality to allow users to interact with characters in the game; all pre-planned gardening and farming actions were successfully implemented; the user is able to purchase/sell items in a Marketplace; and finally, there were randomized events that affected the state of the game (droughts occurs, a sale at the Marketplace, etc).

Final Class Diagram and Comparison Statement

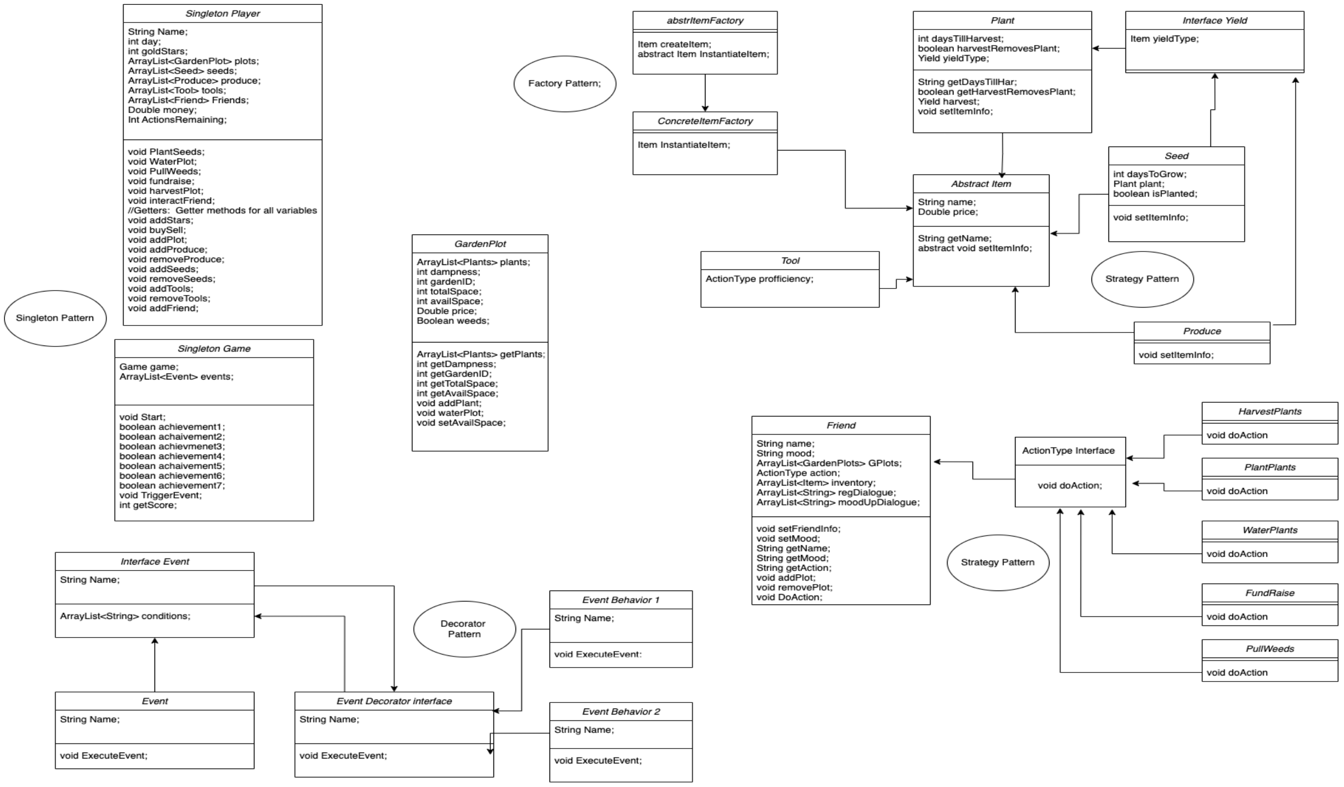
One of the largest set of changes to our UML was the addition of the market class, and the menu class. We originally imagined that the menu and market systems would be part of the game or player classes. We found out that it either over complicated the classes, or made them too all-encompassing. In response to this, we delegated those tasks to their own classes. The menu class presents the various screens to the player, and ensures valid inputs. The market class holds a rotation of items, and facilitates transactions.

Another big change we made was that originally, most of the user interaction was delegated to the Player class. However, we found it was much easier to interact with the game's objects (markets, characters, etc). within the same class. Thus, we delegated all of the actions a user can perform to the Game class.

FINAL UML: (linked here for your convenience)



ORIGINAL UML FROM PROJECT 5: (linked here for your convenience)



Third-Party code vs. Original code Statement

We produced all of the code used by ourselves. We started from blank documents, and wrote all usable code. We did reference some of the class materials and a Youtube channel called How To Be A Better Dev, and the creator's content pertaining to Factory, Strategy, and Decorator patterns.

Statement on the OOAD process for your overall Semester Project

We felt that in the summer program, we didn't have the time to fully implement an observer class that would've aided in updating the player in any changes happening on their farm. Further, we would've liked to design a command pattern to interact with the user, especially because the entire game function depended on what actions the user wanted to perform. Likewise, due to the time constraints of the summer course, we feel that we would have liked to have a third iteration of the code to smooth over some of the implementations.

One of our primary design processes was the use of a week-long sprint. The sprints would correspond to the project assigned for the week. We would hold scrums on a zoom call to go over what we did, if we had any problems, and what we would do for the coming week.

Another one of the key design processes we benefited from was the use of detailed planning before implementation. We made a variety of UML, activity, and state diagrams before coding, and this made the development a lot more efficient. Especially when using design patterns, having the class relationships lined out was really helpful. The deliverables from Project 5 were very beneficial to the overall design on the project. We thoroughly considered all of the functionality we wanted to include in the game and were able to both understand everything that needed to be done. Thus, the final product of the game is not far off the original plan.