**Design Statement:**

This project was intended to be a prototype for a future game somewhat similar to Stardew Valley and its predecessors in the Harvest Moon series. The goal for the prototype was to replicate the core functionality of Stardew Valley. The pixel art used in this prototype is variously sourced, and is not my own work. The player sprite is from Harvest Moon for the DS and was obtained from a webpage listed in the references below, along with references for the inventory items, and the tile-set. I performed preprocessing as needed for all of this pixel art, creating a tile-map formatted for the Godot engine, and cleaning up and scaling sprites. I was very pleased also to find an active community of developers making tutorials for the Godot Engine, some of which I used to help implement this project. I have listed references to those tutorials I used as well.

To implement the game, first I created a scene for the player, with an animated sprite, and wrote a script to handle player behavior. This and other scripts for this project were written in gdscript, a proprietary scripting language for the engine which is similar to Python. At first it was simply a WASD movement scheme. Next, I created animations from the sprite sheet for the player walking and running and added the ability to hold the SHIFT button to run. For the inventory, each of the menus, and the items, I created scenes and scripts to handle behavior. Finally, I created a scene to demonstrate the functionality that I had implemented, and went on to implement spoofed z-axis jumping and a platform onto which the player could jump.

In creating this prototype I learned a great deal about Godot since it was my first project using the engine. Within Godot I learned to animate sprites, script behavior in gdscript, use TileMaps, use signals to communicate between game objects, creature UI elements and much more. Having practiced with other engines like Unity, in learning about Godot I also learned about game engines generally. For example, in the process of dealing with animation handling I encountered the idea of a ‘blend space 2d’ in Godot, which is similar to the ‘blend tree’ in Unity, and used it to handle different directions for the ‘same action’, i.e., walking east vs. walking west. Noting this similarity will convince me to look for similar features in other engines I use. Through developing this prototype, creating the game objects and integrating their behavior, ultimately, I broadened my gameplay programming skills.

**List of Files:**

Video -

<https://www.youtube.com/watch?v=j6vK4RtBaBU>

Game Prototype Demo\* -

<https://github.com/toadSTL/LCAD_Application_Portfolio/blob/main/FarmGamePrototype/Harvest_Valley_V0.002.zip>

**References:**

Art -

Player Sprite: <https://www.spriters-resource.com/ds_dsi/hmdscute/sheet/43936/?source=genre>

Terrain: <https://szadiart.itch.io/craftland-demo>

Items: <https://shubibubi.itch.io/>  
Gameplay -

Z-axis Jumping:

<https://www.youtube.com/watch?v=jgf-95jgBHI&ab_channel=sco_otr>

Inventory System:

<https://www.youtube.com/watch?v=FHYb63ppHmk&list=PLY1jY0hbmKxBvcEHa0k5Aw8_MKoB6jrRU&ab_channel=Arkeve>