

Project Report

“PED”

By

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EGCI301: Computer Graphics

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Content

1. Introduction

- a. Motivation
- b. Story
- c. Manual

2. Methodology

a. Blender Models

Lists of Items made

Model Examples

Scene 1: House

Scene 2: Shop

Scene 3: Bar

Scene 4: Town

b. Unity Scripts

3. Result

Scene 1: House

Scene 2: Shop

Scene 3: Bar

Scene 4: Town

4. Conclusion

1. Introduction

a. Motivation

This project is mainly inspired by a game called “Untitled Goose Game” and LAB07: Create a Low Poly Goose, but with our familiarity we call it a duck, so we think it would be fun to have a duck running around combined with some inspiring ideas from our discussion of life. These days, living in the city can be pretty hectic and busy, leaving us feeling a bit swamped. That's why it's crucial to carve out moments for ourselves, to step back, and embrace the serenity of life outside the cityscape.

Throughout this Computer Graphics course, we have learned interesting techniques to create 3D models using Blender and Unity scripts to integrate and control those models. Our main goal is to use the valuable techniques we've learned in the course. We want to make sure that our creative ideas come to life in an exciting and engaging game that captivates players.

b. Story

The main character of this game is a duck teleported from the real world to a fantasy candy world and has to live a country life. He doesn't know where he is, and the farm is in his name. He has to make a living while finding a way back.

c. Manual

1. Basic Information

At the first arrival, the player will be given a starting asset of farming tools and plant seeds. The player would be required to start their own farm. The crops gathered could be sold to earn gold. This gold can be used to buy seeds in order to further grow the farm.

2. Basic Controls

- Movement
 - Key ‘W’, ‘A’, ‘S’, ‘D’ to move
- Interaction
 - Left-click to select item in inventory and use equipped tool/item
 - Right-click to collect items from the screen
 - Key ‘Q’ to keep picked up item to inventory

3. How to Win

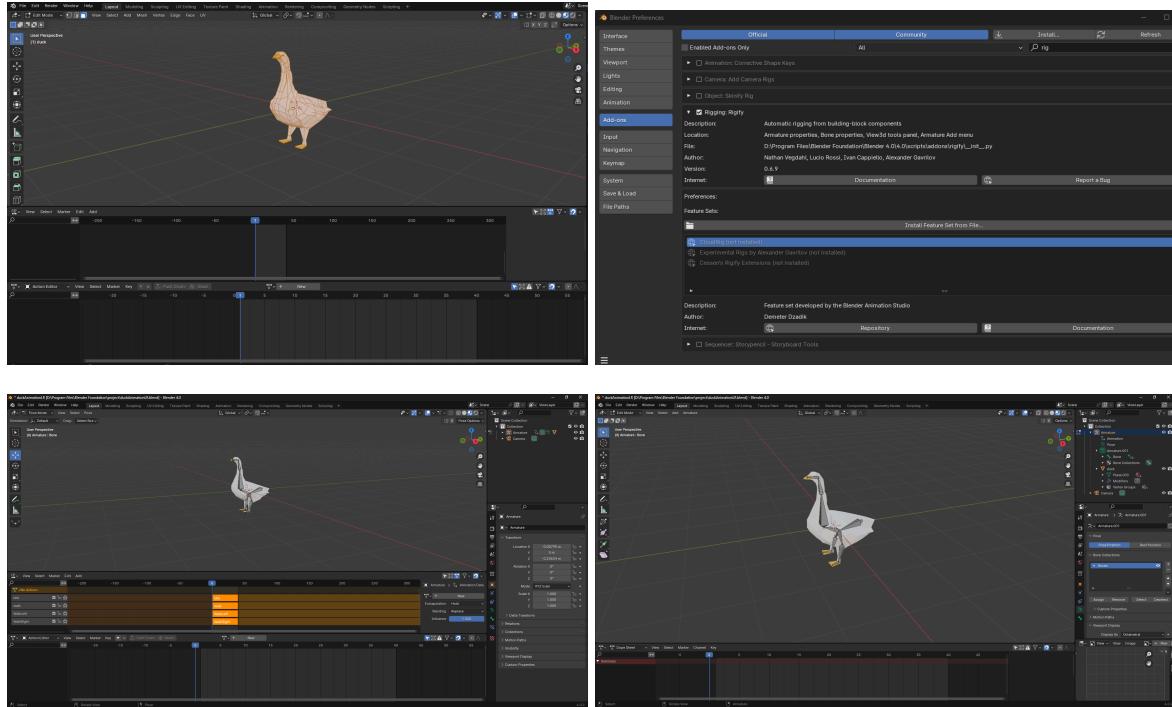
Players can use tools and seed to plant and harvest the candy on the farming area, then the player can sell the candy to earn money. And, in order to end the game, the player will have to collect a certain amount of money to buy an item in the bar.

To grow a plant, the user needs to loosen the soil, wet the soil, then plant the seed. This would require a hoe, a bucket of water, and a shovel. Gathered plants can be sold in the shop in the upper town.

2. Methodology

a. Blender Models

Player animation



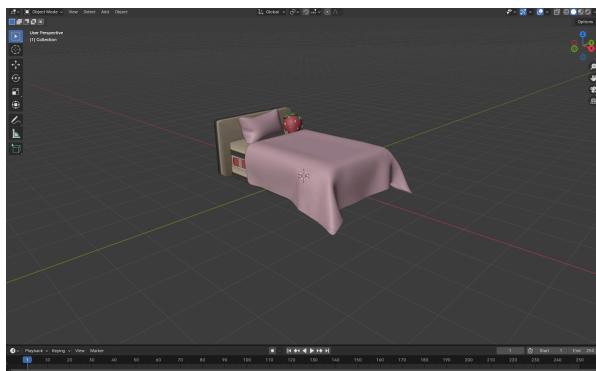
List of all items made

- | | | |
|----------------------|------------------------|-------------------|
| - Bar | - Couch | - Mat |
| - Bar table | - Fence | - Record Player |
| - Bed | - Fence (Corner) | - Seedbag |
| - Bucket with Water | - Fertilizer | - Shelf (Bar) |
| - Cashier | - Glass 1, 2 | - Shelf (Shop) |
| - Chair (Bar) | - Hoe | - Shop |
| - Chair (House) | - House | - Shovel |
| - Chocolate | - Jukebox | - Sofa |
| - Chocolate Seed Jar | - Lamp | - Table (Bar) |
| - Chocolate Tree | - Liquor 1, 2, 3, 4, 5 | - Table (House) |
| - Cookie | - Marshmallow | - Tank |
| - Cookie Seed Jar | - Marshmallow Seed Jar | - Television |
| - Cookie Tree | - Marshmallow Tree | - Vending Machine |

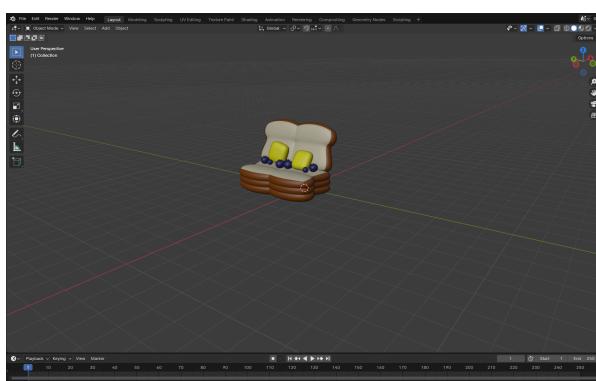
Model Examples

Scene 1: House

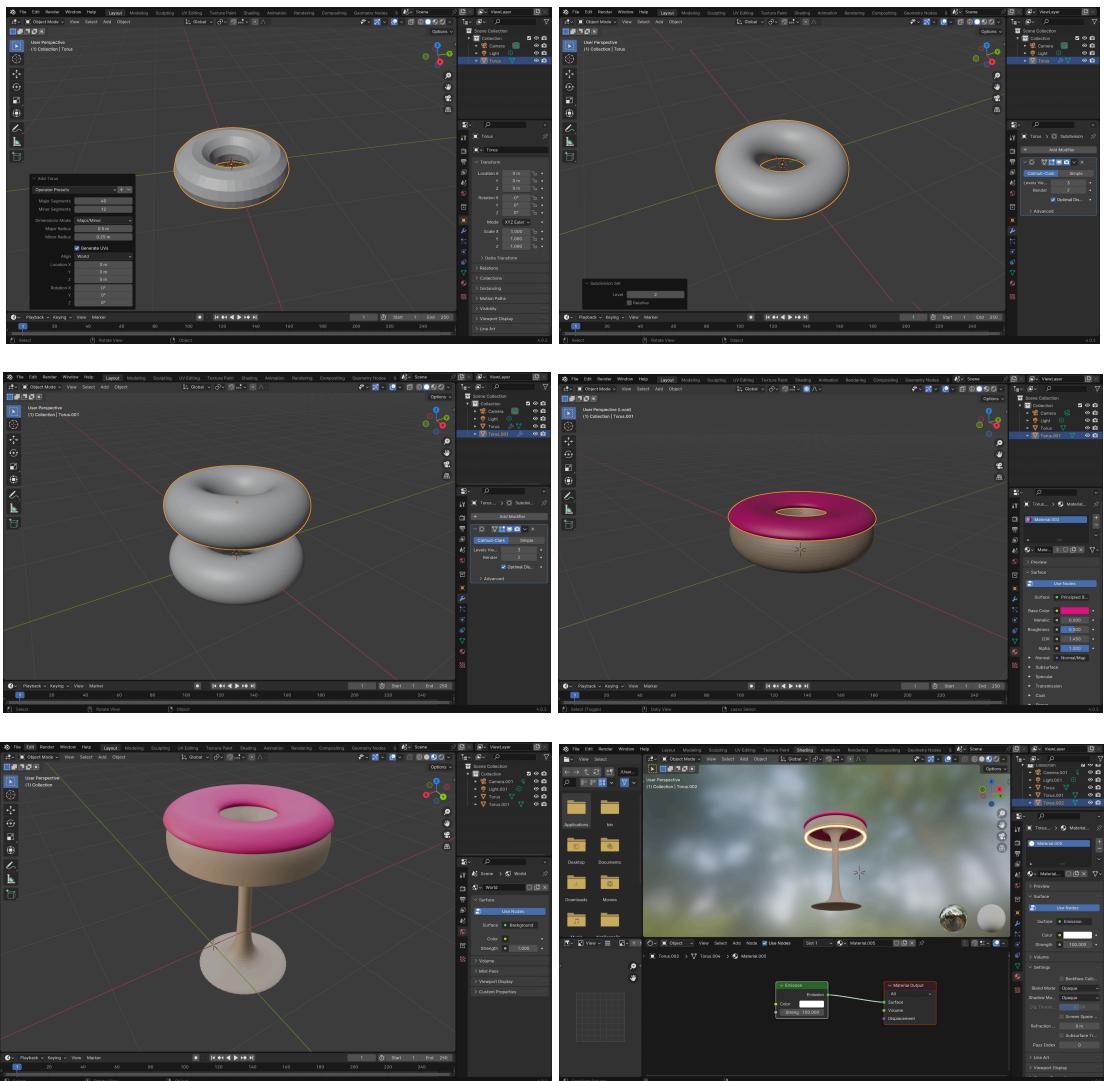
- Bed



- Couch

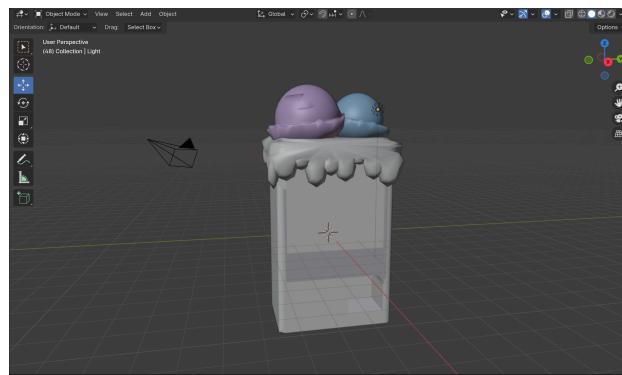


- Lamp

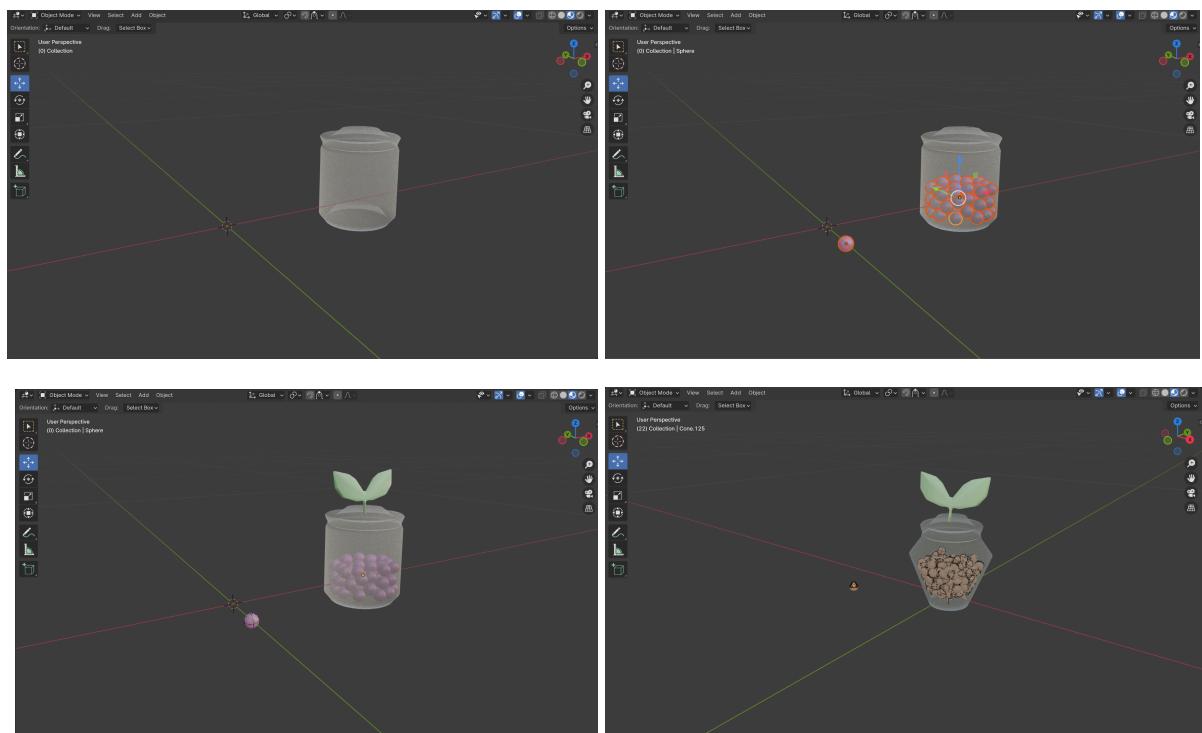


Scene 2: Shop

- Vending Machine

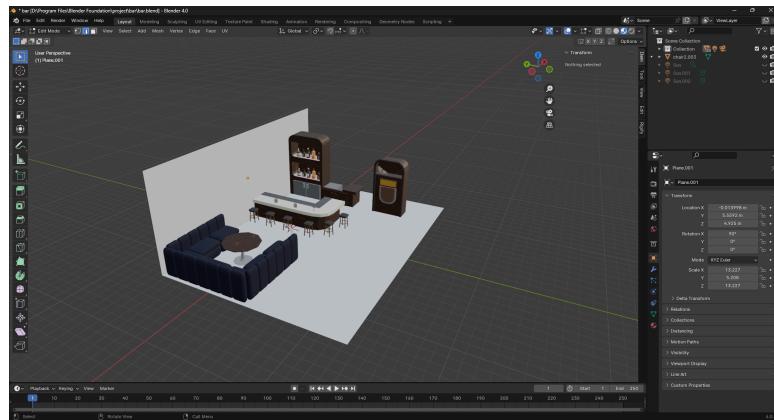


- Seed Jars

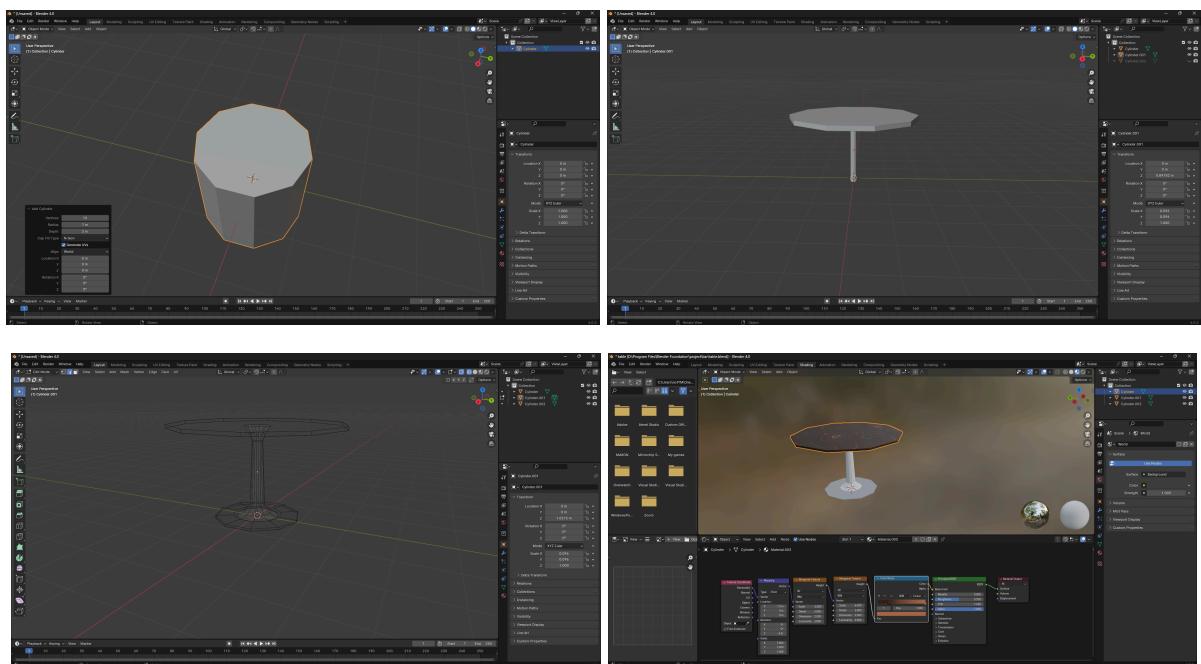


Scene 3: Bar

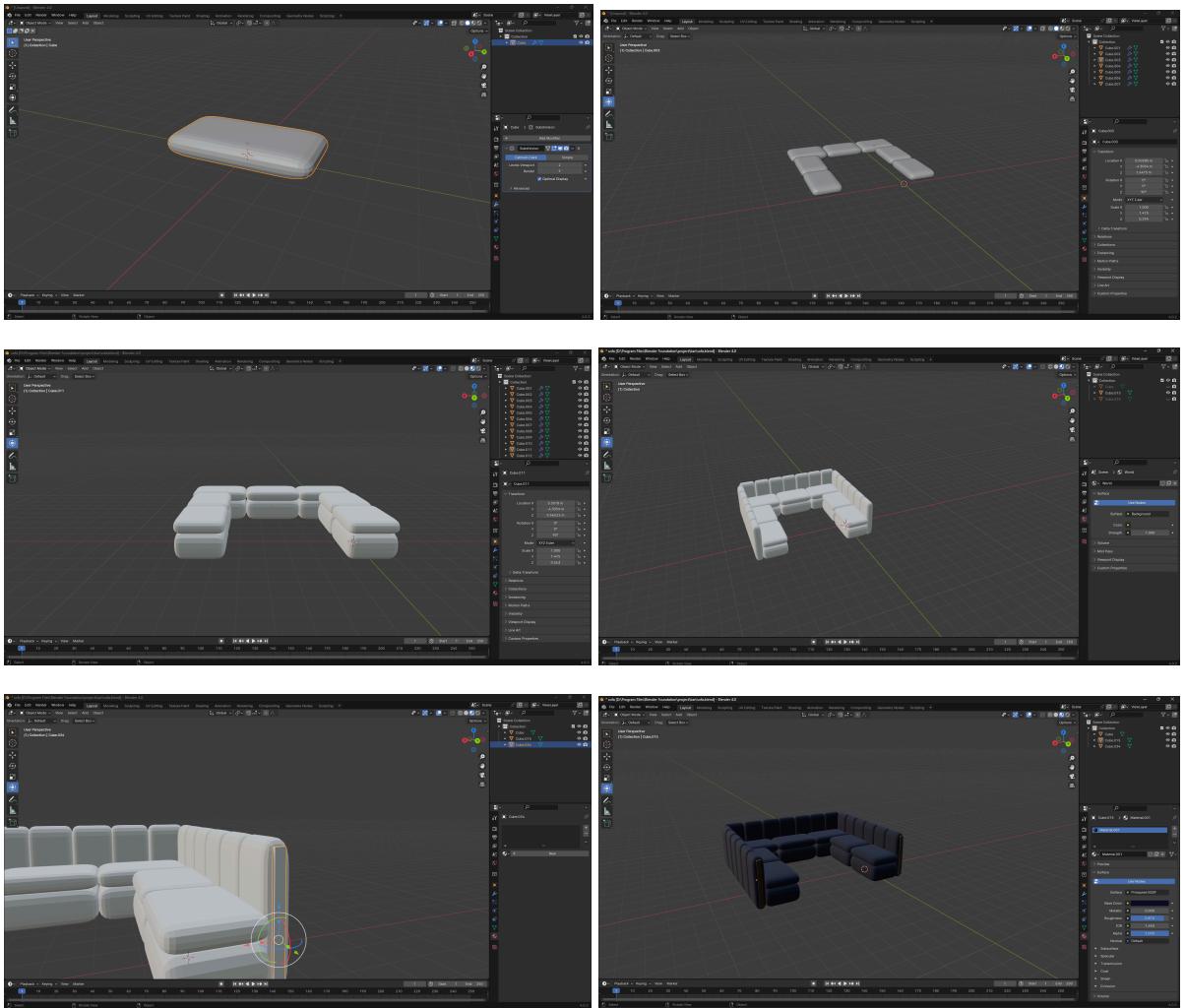
- mockup screen in Blender



- Table

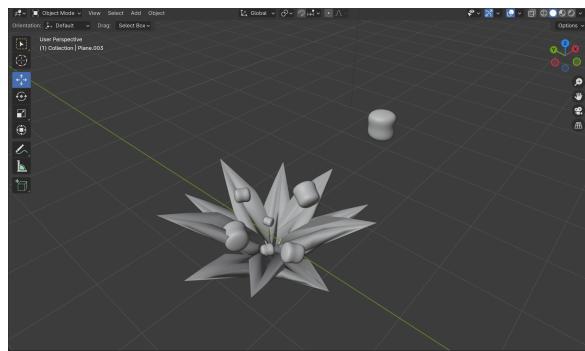


- Sofa



Scene 4 : Farm and Town

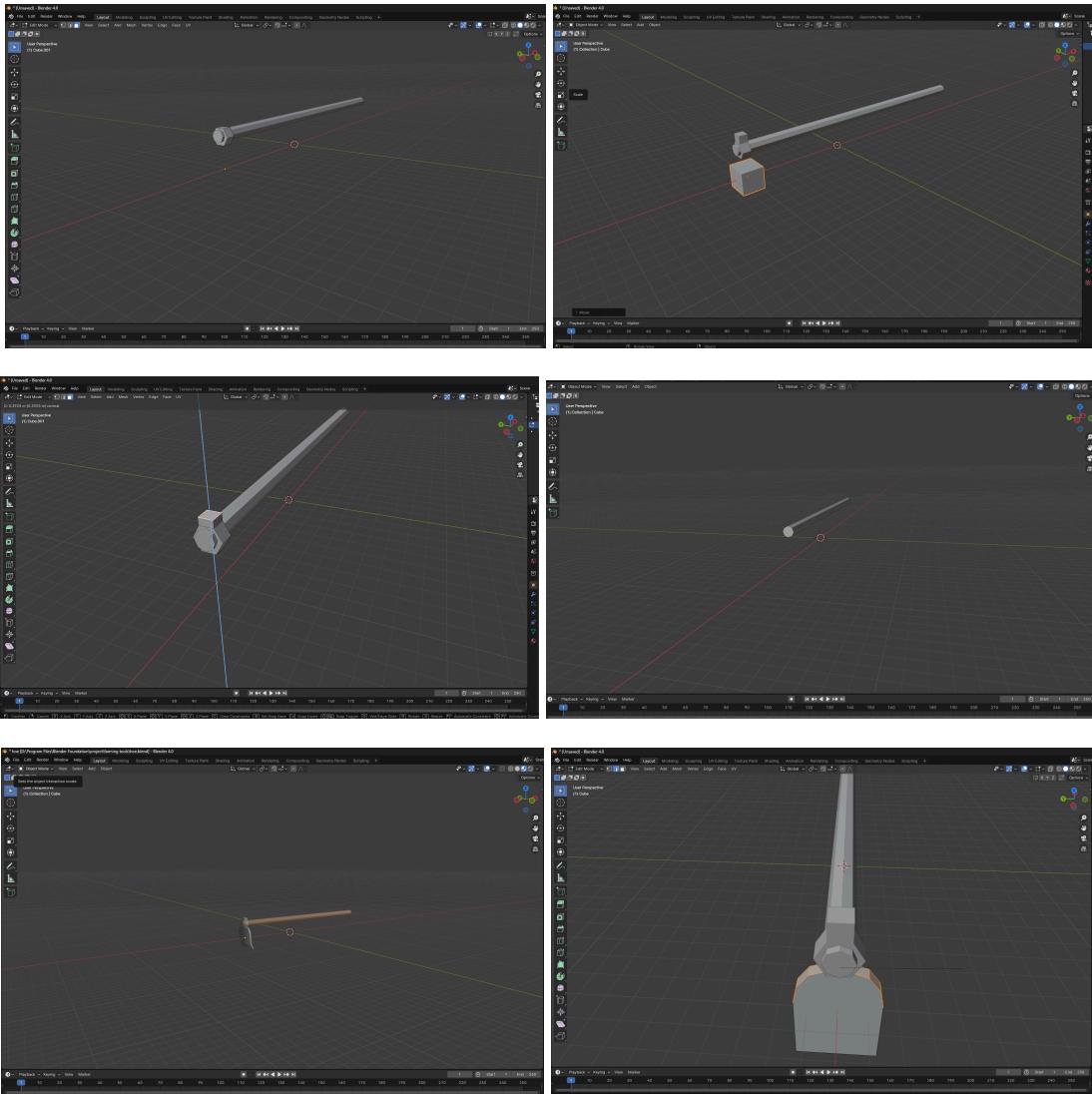
- Trees



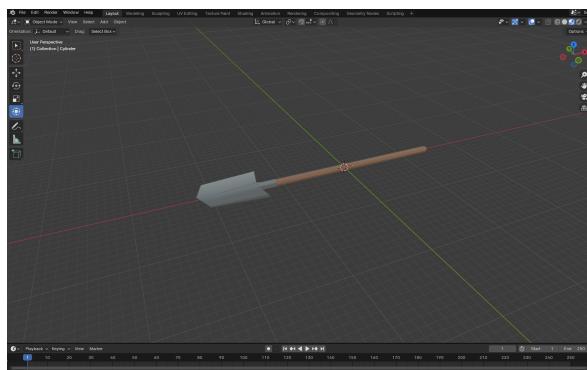
- Shop



- Hoe



- Shovel



2. Methodology

a. Unity

- Main Character
 - The player is portrayed as a duck, living in a small town consisting of its home, neighbors' houses, a shop, and a bar. The player could go to the shop to buy farming necessities, grow plants at their farm, and sell them for gold.
- Teleportation
 - When the character walks into a scene changing zone, teleportation will be triggered to bring the character into the new scene.
- Time System
 - This gameplay has a time system which affects the farming. Plants will grow and soil will be dry over time.
- Buying-Selling System
 - Gold is a currency in this game. Amount of gold will always be displayed on the screen. Users can trade between crops and gold.

b. Unity Scripts

Player control

- playerController.cs
- playerInteraction.cs
- cameraScript.cs

Inventory&Item

- seedData.cs
- SellBox.cs
- Shop.cs
- ItemData.cs
- ItemSlotData.cs
- EquipmentData.cs
- InteractableObjects.cs
- InventoryManager.cs

UI

- UIManager.cs
- InventorySlot.cs
- HandInverntorySlot
- ShopListing
- ShopListingManager
- YesNoPrompt
- PlayerStats
- Teleport
- InteractableObjects.cs
- InventoryManager.cs

Farming system

- Land.cs
- CropBehaviour.cs

Time

- GameTimeStamp.cs
- ITimeTracker.cs
- TimeManager.cs

3. Result

Scene 1: House



Scene 2: Shop



Store

| | | |
|--|-----------------|-------|
| | Marshmallo Seed | 5 CC |
| | ChocolateSeed | 20 CC |
| | CookieSeed | 10 CC |

Marshmallo Seed
Plant this on a wet soil to grow marshmallow

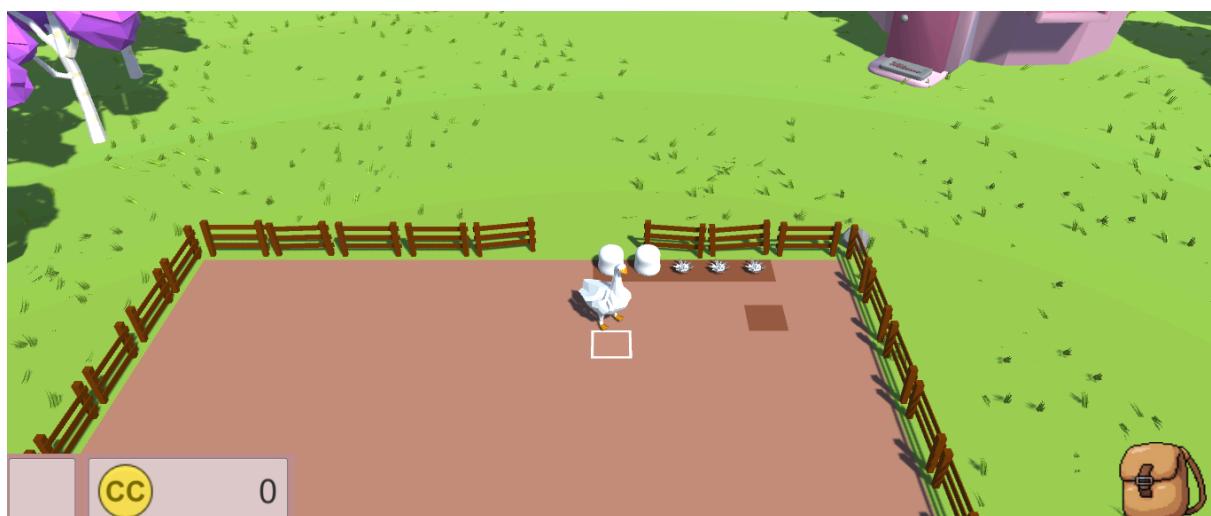
CC 0

A screenshot of a store interface titled "Store". It shows a list of three items: "Marshmallo Seed" (5 CC), "ChocolateSeed" (20 CC), and "CookieSeed" (10 CC). Each item has an icon next to it. Below the list, there's a description: "Marshmallo Seed" and "Plant this on a wet soil to grow marshmallow". At the bottom, there's a user interface element showing a yellow circle with "CC" and the number "0".

Scene 3: Bar



Scene 4 : Farm and Town



4. Conclusion

We have successfully adopted and embedded our knowledge learned from EGCI301 Computer Graphics into our project game, “PED”. Specifically, Blender was used in creating 3D models including characters, furniture, and other assets. Then, we used Unity to assemble and make our scenes and characters come to life through coding. Apart from that, we have also learned to work in a group environment where we share diversity of ideas through some thoughtful discussions. Moreover, this project can benefit players in various ways, ranging from entertainment to fostering a deeper appreciation for life. Lastly, the moral of this game is that “sometimes it's best to simply step back and let nature take over.”