Project for Gesture Based UI Development – 45%

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***Purpose of the application***

The purpose of the application was to develop a virtual reality game in virtual reality with the use of the oculus quest 2. The game is a farming game. The player will be able to grow vegetables and sell the grown vegetables to the customer. The idea behind the game was to allow the user to get comfortable and learn how to use the virtual reality headset and controllers.

Layout:

When starting up the game the user will be greeted at the screen below. This will give the user 2 options, one to start the game and the other to turn the sounds of the game on and off. The background is made up of some of the prefabs and assets that are used in game.

**\*\*screenshot here of menu here\*\***

When selecting the sound option, the user is brought to a new scene with 2 buttons labelled on and off. These do exactly what is says on the tin, simply turning the sounds on or off.

When the user selects the start option in the main menu, the game will start. The user is then transported to the game scene where the game begins. The aim of the game is to essentially grow vegetables and sell them to non-playable characters.

In order to do this, the player must do the following:

* Go to the table at the front of the farm.
* Pick up the hoe
* Pick an area in the patch of grass to create an area to grow vegetables
* Use the hoe by swinging it to create said hole
* Pick up a seed from the table at the front of the farm
* Go to the patch that has been dug up and plant the seed

From this point the plant needs to be essentially looked after. One way of making sure that the plant grows is to water it. The user can pick up the watering can and water the plants.

**\*\* check what happens next \*\***

When the plant is fully grown and has formed into a vegetable that is sellable, a plant will appear from the ground. The user can then pick the vegetable from the plant. Once the vegetable has been picked, the player can bring it to the table at the front of the farm. Here is where they can then sell it to the non-playable characters.

Below is a look at the environment of which the game is set.

**\*\*screenshot here of game here\*\***

***Gestures identified as appropriate for this application***

There are a number of gestures used in the application. Using the controllers with the VR set made it very easy to identify potential gestures as it would be almost exactly as if it were real life. Below is a list of all the gestures that are used in the game:

**\*\* List of gestures and how to do them\*\***

***Hardware used in creating the application***

***Architecture for the solution***

Arrow

Description automatically generated

Diagram

Description automatically generated

The architecture of the solution is simple and effective for the project. Visual studio/ Visual studio code, whichever your IDE of preference, connects and interacts with the Unity game engine. The unity game engine then interacts and is made use of by the Oculus Quest 2. Some of the relevant libraries that were used in creation of the game were:

**\*\* list of libraries\*\***

***Conclusions & Recommendations***

Overall, the project was a great success. The team worked was extremely organised and efficient in completing the project. We communicated very well which led to work being done at a very quick pace and any issues that were encountered were solved immediately. The Oculus quest was an extremely fun way to develop a game and we learned a lot of new things about it and how it can be used. Below is a link to the GitHub repository for the project.

<https://github.com/R4K0/ATU-VRShop>