天主教輔仁大學英國語文學系學士班畢業成果
ENGLISH DEPARTMENT, FU JEN CATHOLIC UNIVERSITY
GRADUATION PROJECT 2023

指導教授：周德嬚老師
Dr. Lynn Chou

**VR Game Design
Viking Age: A Time to Live and Eat**

學 生 ： 歐 文 迪 撰
Darwin Wen-Di Au

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Introduction
(Please briefly talk about the background of the project, your motivation of designing this project, and the objectives of it).

The Viking Age is a time that many people thought would be in many people in medieval times, using swords to fight each other and wearing animal skins as clothes, and enjoying fighting and drinking beer. However, the living environment and the foods that the Vikings usually eat are not widely known. This project is to let the players be able to learn some useful information about the Viking age while they are playing, while we are using virtual reality tools Mozilla Hubs to help to let our project become more immersive and fun for our players. We hope that through this 3D model, we can use the image to make our description visualization to give players a deeper and more thorough understanding of Viking farming and food. Since we are also interested in the Vikings Age, we are also learning many things about the Vikings Age during our work. Moreover, this is my first time creating a game with virtual reality technology, so I am also interested in how these technologies function and how we can use them to our advantage. So while doing this final project, I also feel quite fun learning these things.

VR Game Design

Student ID: 408110065   Name: Darwin 歐文迪   Group ID: Group 5

Topic	Viking Age: A Time to Live and Eat	Teammate(s)	408110261 Jimmy Huang 408110089 Ryan Chen 408110388 Tina Chang 408110651 Tina Wu
Theme	Viking food and houses	Background	Viking Age
Target Users	Everyone interested in Viking Age culture, especially agriculture and food.		
Objectives	We hope that through this 3D model, we can use the image to make our description visualization to give players a deeper and more thorough understanding of Viking farming and food.		
Character(s)	The player		
Plot	The player can choose whether they want to start at the farm or the longhouse, after they choose one place to start, they will enter the place, and they can see in virtual reality the places that the Vikings live, the surroundings, and the usual things that will appear in their life such as farm animals, farm, and the food that the Vikings usually eat. After the view, they will be asked questions that are related of the place they just saw at the end, making sure that they remember the knowledge they just received during the tour. After the questions, they can go to the other place they did not choose in the first place, so if the player chose the farm first, they can go to the longhouse next, and vice versa. After the tour of both the farm and the longhouse, the player should have enough knowledge of the homes and foods of Vikings during the Viking Age.		
Game Play and mechanics	The gameplay is mainly focused on using Mozilla Hubs as the tool to play the game, using virtual reality to present the surroundings and objects, making the journey of the game more immersive. Players can use the WASD key on the keyboard to move their characters in the game, and they can use the mouse to move their camera to see their surroundings. Furthermore, there are buttons at the end of the room that can bring the players to the other room.		

Storyboard

Scene	Image		Sound
	Screenshot	Description	Narration/ Sound effect/ Background music
Longho use		The players will go to a longhouse, search for what food is on the table and answer questions about Viking food.	No sound, but there will be text telling information.
Farm		The player will be shown a farm, with buildings surrounding the farm, and players will see the animals and crops that usually be grown by Vikings in the Viking Age.	No sound, but there will be text telling information.

QC Checklist

Student ID   408110065   Name: 歐文迪   Group ID: Group 5

No.	Item	Module	Pass	Minor issue	Major issue	Pass/Hold
1	Using a 360 scene of Vikings farm as the background.	panorama	✓			Pass
2	Using link element to send the player to the other room	link	✓			pass
3	Using troika text to put in the information needed for the game.	troika text	✓			pass
4	Putting the models of animals and farms in game	farm, animals	✓			pass
5	Putting some decorations inside the longhouse to make the longhouse look more attractive and authentic.	fireplace, long table	✓			pass

Programming Journal

Date: 25 June 2022　　　　Student ID: 408110065　　　　Group ID:　Group 5

1. Project goal/ scope.

This project is to let the players be able to learn some useful information about the Viking age while they are playing, by using Mozilla Hubs as the tool to play the game, using virtual reality to present the surroundings and objects, making the journey of the game more immersive.

2. My task(s)

My task is mainly focused on making the scene in Mozilla Hubs.

3. Progress.

#.	Task description	Done
1.	Making both scenes: longhouse and farms	✓
2.	Putting in the modules needed to each scenes	✓
3.	Putting in some instructional text to let the players know what to do.	✓

4. Problem solving solutions

#	Problem encountered	Solution(s) tried/ other possible solutions
1.	Putting both scenes in one Mozilla Hub file is hard because the file size is too big and making the uploading process fail or too long.	Separating the scenes into one file each makes both files smaller and easier to upload.
2.	Some modules that we want to put in the scene have some problems such as size are too big or fail to render.	Finding other available modules as alternatives, or even using images if all modules we can find do not work.
3.	No longhouse scene is available for us to use as our background.	Using a module as an alternative, enlarge it and use it as our background instead.
4.	Some troika text are hard to see in game due to the lightning are too bright.	Use a wooden board behind the text to let the text easier to read. This also makes the scene more immersive than just changing the color of the text.

5. Lesson(s) learned.
   a. From trial and error
      During various tries of adding modules into the scene, we realized that not every module can be put into the game due to the size of the module being too big, or the module itself has some errors, making it unable to load in. So to compromise, we use google image instead to show the things that we wanted to put in.

b. From team member(s)
Because Mozilla Hubs cannot be co-edited by various team members together, one member that is editing the Mozilla Hubs scene needs to share his screen for all of the team members to be able to look at together. In order to do this, we used various online meeting tools such as Microsoft Teams and Google Meet.

c. From other team(s)
Some members from other teams did give us advice that we should put our questions and answers in different places for the player to not accidentally look at the answer. We also think that it is good advice, however, we were worried that by adding more elements to the scene, the file will become too big and make it unable to upload, so we decide to make it simple instead.

6. Most impressive conversation/ event.

I think the most impressive conversation is when we finally decided on the details of how to do our final project using Mozilla Hubs, including the details and how exactly how do we complete it. Because this is my first time doing this, I had a hard time understanding how Mozilla Hubs functions and what can we use this tool to complete our final project.

Your work including Storymap, Jigspace, and Mozilla hubs. Please screen capture your work and give brief description.

I will show my work on the farm below.

This is the first sight the players will see when they enter the farm scene. The players can see the farms and animals on the right side, and they will see the introduction text on the left side.

This is the general view of the objects at the farm. There are various animals and a wheat farm, which are the usual things that will appear on a Vikings farm.
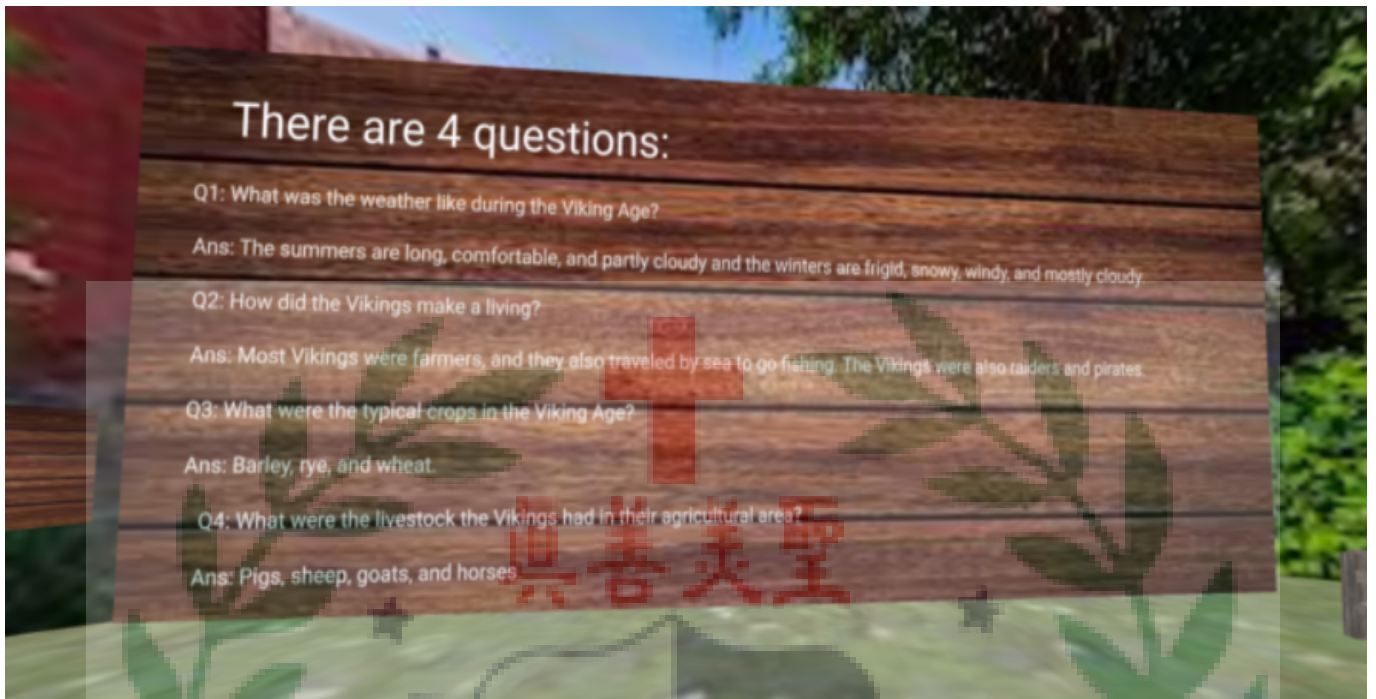
The questions board contains the questions for the players at the end of the tour of one room. The answers are included for the viewers to know if their answers are right or not.
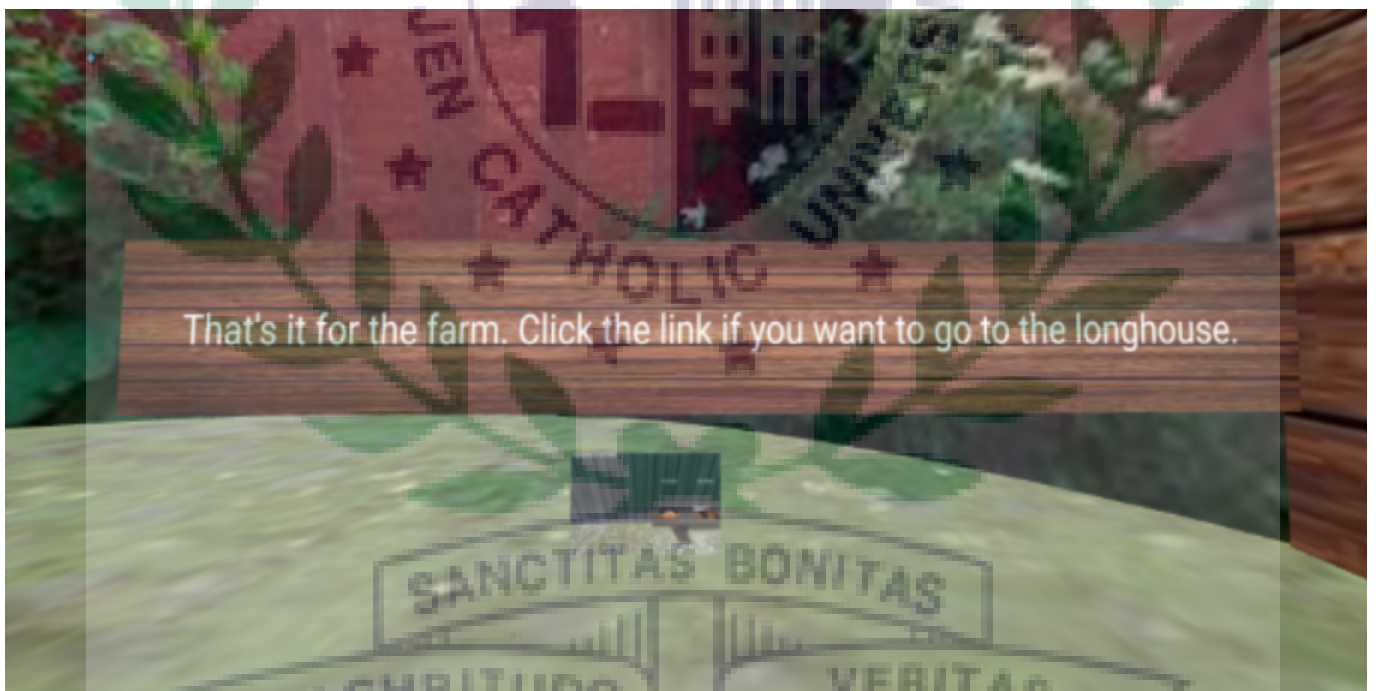
The link that will appear at the end of the tour, letting players to be able to go to the other room, which in this case is the longhouse.

Final presentation PPT

Here is a link to our final presentation PPT: 🖥 Group 5_Viking Presentation
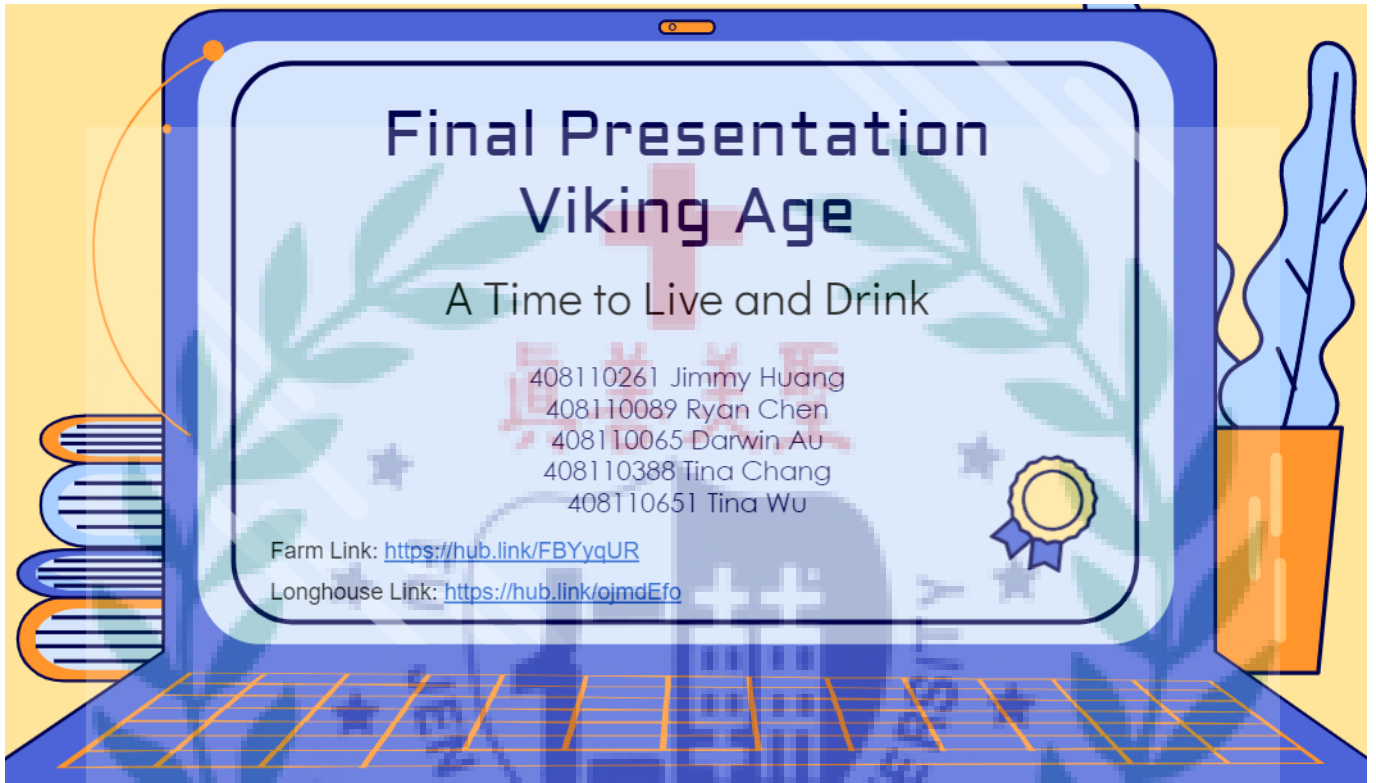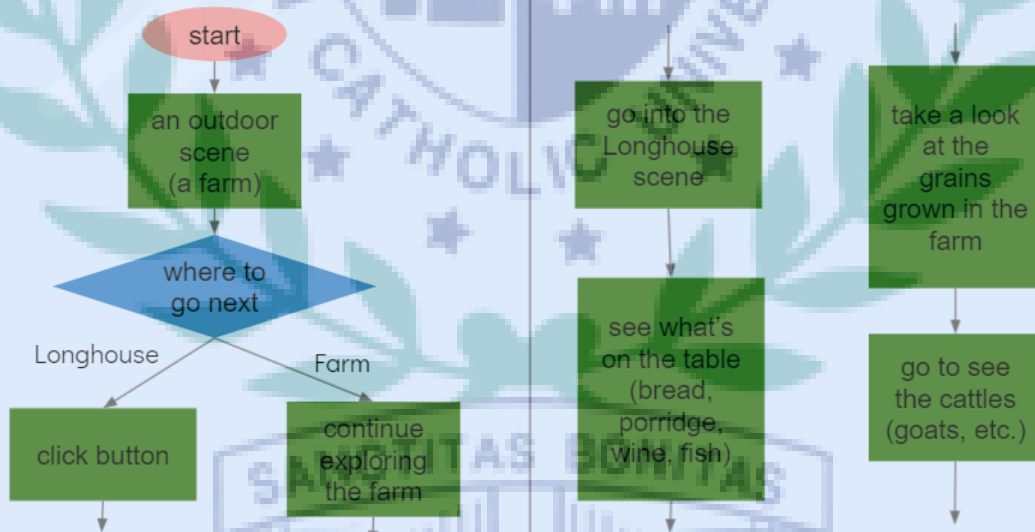I will put some slides of our PPT below.

Target Users

Everyone interested in Viking Age culture, especially agriculture and food, is our target user.

Objectives

We hope that through this 3D model, we can use the image to make our description visualization to give players a deeper and more thorough understanding of Viking farming and food.

1

start

an outdoor scene (a farm)

where to go next

Longhouse

Farm

click button

continue exploring the farm

2

go into the Longhouse scene

take a look at the grains grown in the farm

see what's on the table (bread, porridge, wine, fish)

go to see the cattles (goats, etc.)

Difficulties We Encounter

3. Familiarity of the Tools We Use:

Unfamiliar with the virtual-world-creating platform such as Mozilla spoke

4. Technical Problems:

The avatars created and uploaded by ourselves failed to appear on the scene in Mozilla Hubs.

5. Too Much To Add:

The limitation to the size of the project make us need to cut down on the amount of 3D objects we planned to use.
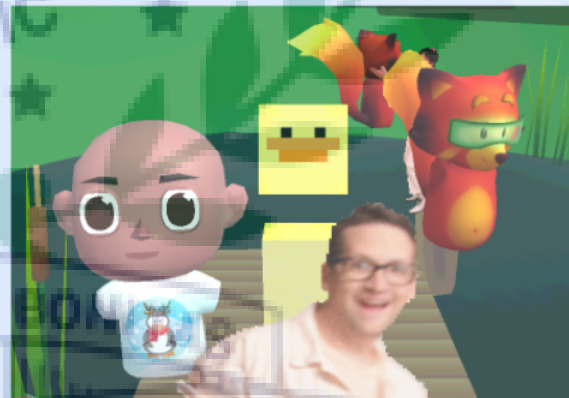
Task Distribution

Mozilla Hubs—— Darwin Au

Flowchart—— Tina Wu, Tina Chang

Storyboard——Jimmy Huang, Ryan Chen

Reflection and future study

I think that this is a very interesting experience for me because this is my first time using virtual reality technologies like Mozilla Hubs to create a creative game for other people to play. I think that Mozilla Hubs is a really creative tool for people to create their own projects. However, this also means that I am really inexperienced and I have many places I need to improve to create a better project. So I need to spend a lot of time figuring out how I can use Mozilla Hubs as a tool to complete our final project. Luckily my group members helped and we finally made this despite our inexperience. On the other hand, I would say that Mozilla Hubs being unable to co-edit is a problem that took a toll on our progress. However, we fixed it by using online meeting tools such as Google Meet and Microsoft Teams to share the screen, letting every team member be able to look at the editing scene and experience it together as a team, instead of experiencing it individually.

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