

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：周德嫵老師

Dr. Lynn Chou


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

學生：張婷榕撰

Tina Ting-Jung Chang

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電腦應用及程式設計

Applied Computer Technology and Programming

學生：張婷榕

English Name: Tina Chang

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Viking Age – The time to Live and Drink

Name: Tina Chang

ID: 408110388

Introduction

As a human being, what we can't live without is food and drinks, and they can provide essential nutrients to human bodies. After knowing the theme of the project is set in the Viking age, what came to our mind first was what the food and drinks the Vikings had, what plants and animals the Vikings kept, and what was their homes like in the Viking age. In this project, we aimed to find answers to these questions. We take these questions into consideration when deciding which group to collaborate with from the other course, and we eventually decided to collaborate with Sharon Liao whose report is about the Viking towns and the place they live. We believed by choosing this report, it will be helpful when creating the background of the project and the scenes in Mozilla Spoke. The objectives of this project is to provide an interesting method to learn knowledge about the Vikings for those who are interested in observing the food and drinks, the agriculture and animals, and the geography of the Viking age as we do. We hope that we can not only deliver the message about the food and drinks the Vikings had, we can also make users have fun observing the two scenes, which are the farm and the longhouse.

VR Game Design

Student ID: 408110388

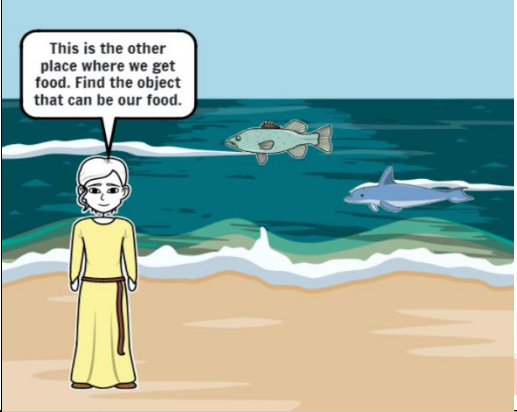

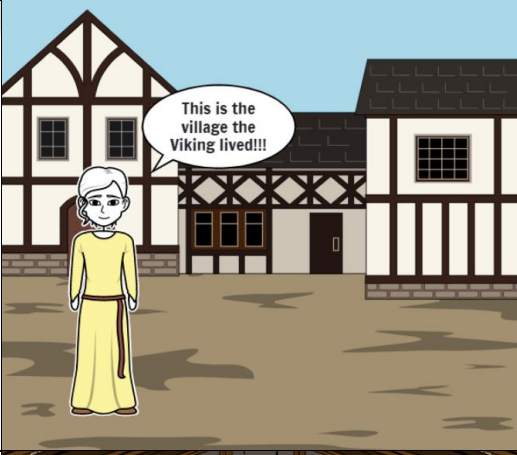

Name: 張婷榕 Tina Chang

Group ID: Group 5

Topic	Viking Age – A Time to Live and Drink	Teammate(s)	Jimmy Huang, Ryan Chen, Darwin Au, Tina Wu, Tina Chang
Theme	The Vikings' food and drinks	Background	The Viking Age
Target Users	For all the people who are interested in learning the Vikings' culture, especially agriculture and what the food and drinks the Vikings had at the Viking Age.		
Objectives	We hope to give the users a deeper and more thorough understanding of Viking farming and food. Through the scenes and 3D model, we are able to visualize our description. By observing the farm and the longhouse, the users can find the answers to the questions listed separately in these two scenes, and eventually learned what the food and drinks the Vikings had, and what grains and animals did the Vikings keep.		
Character(s)	The players who enter the two scenes, the farm and the longhouse.		
Plot	In the scene of the farm, the users can observe the surroundings, the animals, and the grains. After they done their observation, they can go to the billboard to answer the questions and check whether they have the right answers at the same time. As for the scene of the longhouse, the users can see different kinds of bread and food such as porridge on the table inside the longhouse. When they done observing the interior part of the longhouse, it's time for them to answers the questions listed on the wall and check their answers.		
Game Play and mechanics	After entering the farm, the users need to make their first choice about which scene to observe first, the farm or the longhouse. The users should find answers to the questions by observing the surroundings in both scenes. When they want to go to the other scene, all they need to do is to click on the button provided in both rooms that has the link to the other scene.		

Storyboard

Scene	Image	Description	Sound
	Screen shot	Description	Narration/ Sound effect/ Background music
1		<p>When enter the longhouse, the users will see the food and drinks the Vikings had. Also, there will be a</p>	<p>There is a list of questions about the Viking agriculture.</p>
1		<p>The surrounding of where the Vikings lived.</p>	<p>No sound effect</p>
2		<p>The users can observe the farm and where the Vikings grew the grains they used to produce food.</p>	<p>The surrounding of the farm.</p>

2			The image delivers the message that the Vikings would go fishing.	From the image, the users can learn what they do when going seafaring.
2			The storyboard tells the story about what the Vikings used to produce the drinks they had.	The background of the image shows the grains the Vikings had.
2			The surrounding of the Viking village and the location of the longhouse.	No sound effects.
2			The man delivers the message to the users that they can find out the ingredient being used to produce food on the table.	The users can find out what their mission is from the man in the storyboard.

QC Checklist

Student ID: 408110388

Name: Tina Chang

Group ID: Group 5

No.	Item	Module	Result			Decision
			Pass	Minor issue	Major issue	Pass/Hold
1	When click on the button to enter the room, the users will enter the first scene, which is the Viking farm.	A board	✓		The users can learn where to start observing.	Pass
2	When pass the board suggesting where the users are, there will be the animals and the grains the Vikings had.	Wheat farm, horse, pig, goat	✓			Pass
3	When pass the animals and grains, there is a board listed questions for users to find answers from the farm.	A billboard with a list of questions	✓		The users can find the answers in the farm.	Pass
4	When click the button of the other scene, the link will direct the players to the second scene, the longhouse.	A button with the link to another scene	✓		The users can have the access to another scene.	Pass
5	The sign on the wall suggest where the location of the users.	Sign on the wall	✓			Pass
6	There are several kinds of food and drinks the Vikings had being put on the table.	Table, flat bread, rye bread, porridge, cider & mead, pickled herring	✓			Pass
7	There is a list of questions about the Viking food and drinks.	A list of questions on the wall	✓		The users can find the answers to the questions from the food and drinks on the table.	Pass

Programming Journal

- Articulate your thoughts
- Free up your mind and improve your concentration.
- Records the history of your progress and development

Date: 2022/06/18

Student ID: 408110388

Group ID: Group 5

1. Project goal/ scope.

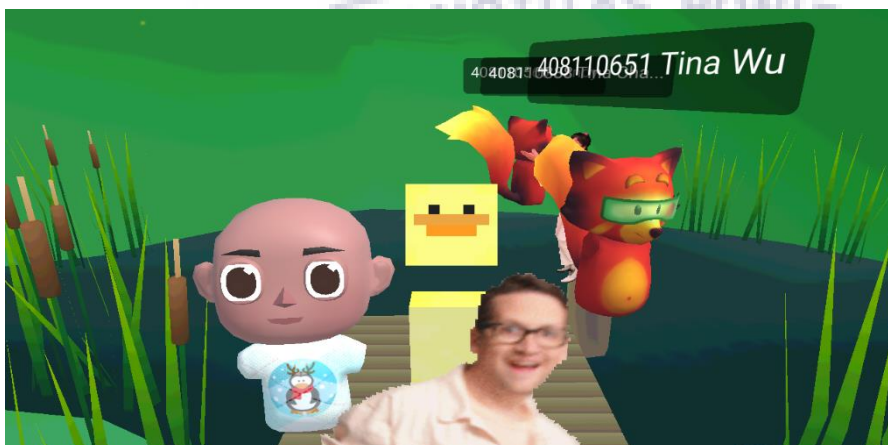
The goal of this project is to arouse people's acquaintance to the Vikings and their lifestyle and provide those who are interested in learning the food and drinks the Vikings had an opportunity to experience what their life was like in the virtual world.

2. My task(s)

In the project of Mozilla Hubs Scene Creation, my responsibility was to organize and outline our thoughts and discussion into the flowchart with Tina Wu, and to find and provide the 3D models that we think should be put in the scene to our group member Darwin Au.

3. Progress.

#.	Task description	Done
1	Flowchart – Tina Chang, Tina Wu Tina and I are responsible for creating the flowchart, which is crucial for organizing all of our thoughts and ideas and outlining how our project is going to present.	✓
2	Storyboard – Jimmy Huang, Ryan Chen Jimmy and Ryan were responsible for the creation of storyboard. When the storyboard was created, the setting of the two scenes were determined.	✓
3	Mozilla Hubs – Darwin Au Darwin was responsible for creating the whole scene and fulfilling our expectation to the project.	✓



4. Problem solving solutions

#	Problem encountered	Solution(s) tried/ other possible solutions
1	Inefficient discussion and malfunction devices due to distant learning.	Help each other when encounter the malfunction of devices we use and try to analyze and organize our thoughts systematically during the discussion.
2	Problems of co-editing	Use the same account from a group member to edit the project.
3	Unfamiliarity of the tools we use	The whole group worked together to find solutions.
4	Technical problem such as the avatar we uploaded to Mozilla Hubs failed to appear.	After we've tried all the ways out, we decided to give up on uploading the avatars.
5	The limitation to the size of the project	Cut down on the amount of 3D models we originally planned to put in the scene.

5. Lesson(s) learned.

a. From trial and error

At the beginning of the course, I could not imagine I had the ability to learn how to use the several tools we use in this semester. Since I am not good at the computer technology and do not know anything about programming, I was anxious when selecting this course. I was afraid that I would fall behind my classmates. Thanks to the professor who tried to explain every technique as detailed as possible, and with the help of my team members who taught me step by step and reminded me of the functions to each tool when I had no idea how to accomplish the task assigned by the professor. I had a lot fun when creating the Storymaps, I think learning this tool gave me a brand-new idea of how to express a story to the audience, and it is quite helpful if I want to set up my own blog. The biggest challenge I encounter throughout the semester was at the time when learning how to use Jigspace. After I installed Jigspace in my laptop, every time when I use the app, my computer would be overheated and being shot down. Also, in order to turn the content of the Storymaps into 3D objects, each group member need to take responsible for a part of the content. However, with no access to co-editing in Jigspace, but we managed to finish the task successfully by using the same account from a group member. Overall, there are a lot of lessons I've learned from taking this course. I not only learned from my group members of their spirit and techniques in dealing with the tasks, I also stepped out of my comfort zone to learn the tools that I am not familiar with, and I hope that I can keep this courage and have faith in myself whenever I face any challenges.

b. From team member(s)

I think I am quite fortunate to have a group of team members who always provide their assistance whenever I'm in need of help. From my team member Tina Wu, I admire her not only because she is my best friend, she is also the one who always assist me when I do not understand the functions from the tools we use in this semester. Take Jigspace as an example, when I had no idea what type of 3D objects files I should download and how to use some functions of Jigspace, she was the one who taught me step by step, and she even made some instructional videos for me. Jimmy Huang and Ryan Chen were always active in all the discussions, and they provided valuable ideas to all the issues we discussed. They always motivate me to be more devoted into all the projects. And when I had no faith in myself to fulfill something, they always try their best to encourage me and lift up the spirit of whole team. What I appreciate the most to Darwin is that he volunteered to take the responsibility of creating the two scenes from Mozilla Spoke. When we had no idea how to start creating the project and feel anxious about the unfamiliarity to Mozilla Spoke, it was Darwin who told us that he had already looked for some usable setting that we could choose from. And whatever ideas and expectations we had to the project, he helped to fulfill all of them. I think the lesson I've learned from Darwin is the spirit of working hard and never give up on trying new things.

c. From other team(s)


Throughout the whole semester, most of the time I am impressed by the works done by group 6. I remembered that most of the time group 6 was always the earliest group to finish the tasks assigned by the professor. And when they were sharing their works, they can always express their ideas and the distinguishing features of the works clearly and fluently. Of all the works done by group 6 in the semester, I think the one I like the most must be the Mozilla Hubs Scene Creation. They not only created the scene with sound effect, they also created several different avatars. It is the techniques they applied to their works and the design of the PPT slides that I can learn from. I'm not only impressed by the works from group 6, I also admired the teamwork spirit from them.

6. Most impressive conversation/ event.

I think the most impressive conversation throughout the whole project was the discussion that we finally decided what the interactive game we want to put in the scenes. We were quite excited when we planned to design the Q&A section to interact with the players. Originally, we thought we would be able to set up some buttons in the scene that players can click on to start the game and answer the list of questions. Although we failed to succeed in designing the game section as what we imagined it to be, we still had a lot of fun when discussing all the possibilities that we can add in this project, and all the expectations we want to fulfill in the settings.

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

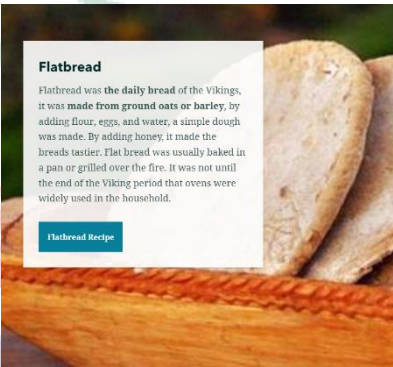
1. Storymap: [The Viking Age](#)



Life in Viking Age

Life in the Viking Age was tough and simple so people at that time needed a lot of energy to make a living. We can also learn that the Vikings would go seafaring, raiding, and pillaging.


Although the Vikings lived in harsh circumstances, they still ate well and cultivated the ability to raise food, this made them become skilled farmers, foragers, and beekeepers. To preserve food to eat during the cold winter, the Vikings managed to minimize what they create.



Flatbread

Flatbread was the daily bread of the Vikings, it was made from ground oats or barley, by adding flour, eggs, and water, a simple dough was made. By adding honey, it made the breads tastier. Flat bread was usually baked in a pan or grilled over the fire. It was not until the end of the Viking period that ovens were widely used in the household.

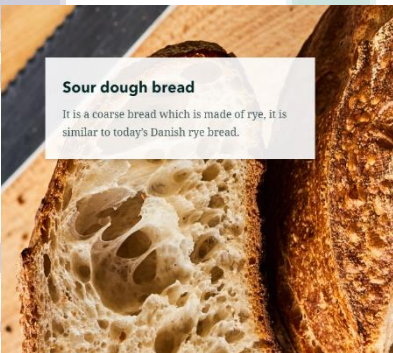
[Flatbread Recipe](#)



When it comes to working the farms, most of the crops the Vikings grew were things such as oats, barley, wheat, and vegetables. And there was also plenty of livestock scattered across the countryside, such as pigs, cattle, sheep, horses, and chickens.

In the Viking Age, the family would eat two meals a day, the dagmal as the day meal, which was served an hour after rising, and the other the natmal as the night meal, which was served at the end of the working day.

For the day meal, the adults might eat a bit of some leftover stew with bread and fruit which was still in the cauldron from the night before. The children would have porridge, dried fruit, or perhaps buttermilk and bread. The night meal could be fish or meat stewed with vegetables. They might also eat some more dried fruit with honey as a sweet treat. Also, Vikings drank ale, mead, or buttermilk daily.



Sour dough bread

It is a coarse bread which is made of rye, it is similar to today's Danish rye bread.

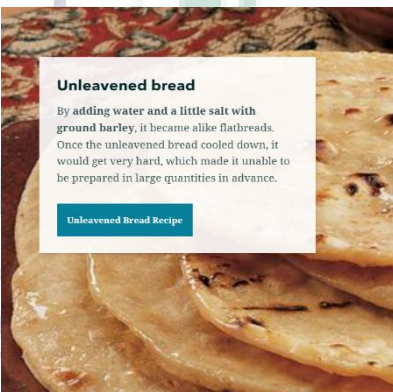


Viking Food & Drink

Life in the Viking age can be described as the feudal economy since they ate what they produced on their farms or what they could hunt. The farms were small but large enough to keep the family well-fed in good years. Their food was seasonal, so they might have a lot of food available to eat during some time of the year and very little to eat during others.

A large part of the Viking diet consisted of grain products, and bread would have been enjoyed with every meal, though it is not like the bread we eat nowadays.

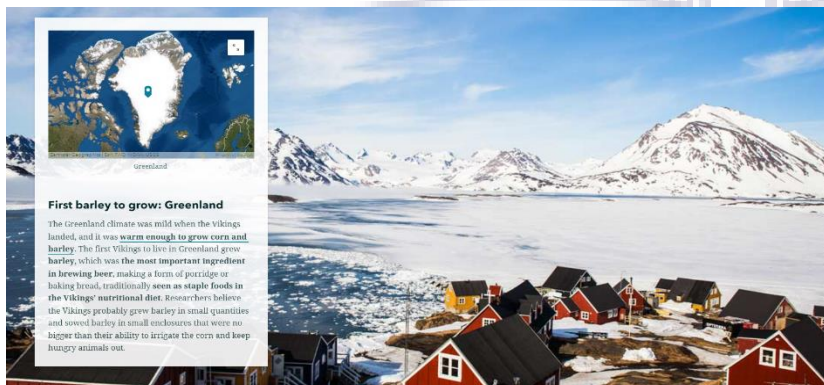
The Vikings grew different kinds of grains, including barley, rye, spelt, and oats. Barley is the most common grain to grow anywhere since it grows easily. And in some parts of Scandinavia, it would have been possible to grow wheat. Wheat was a rare cereal crop and a luxury product preserved for the rich at that time. Salt and pepper were available to most Vikings while costlier spices were imported and added to the foods of wealthier Vikings.



Unleavened bread

By adding water and a little salt with ground barley, it became alike flatbreads. Once the unleavened bread cooled down, it would get very hard, which made it unable to be prepared in large quantities in advance.

[Unleavened Bread Recipe](#)



First barley to grow: Greenland

The Greenland climate was mild when the Vikings landed, and it was warm enough to grow corn and barley. The first Vikings to live in Greenland grew barley, which was the most important ingredient in brewing beer, making a form of porridge or baking bread, traditionally seen as staple foods in the Vikings' nutritional diet. Researchers believe the Vikings probably grew barley in small quantities and sowed barley in small enclosures that were no higher than their ability to irrigate the corn and keep hungry animals out.



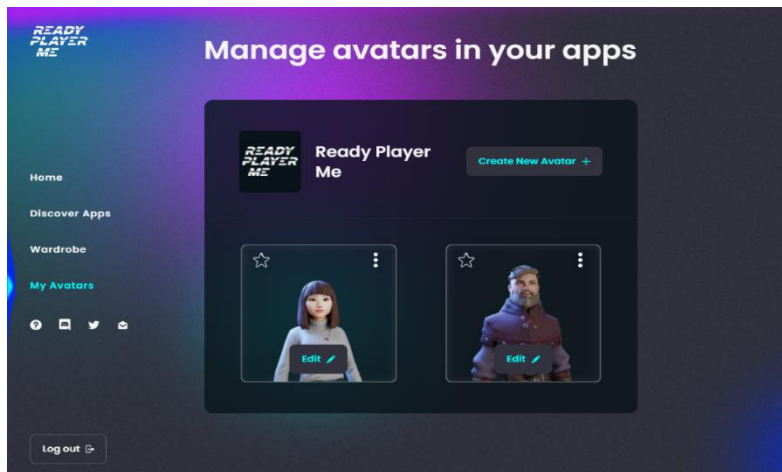
Rye bread

It is regarded to be a Danish dish but dates back to the Viking age, rye and barley were the most important cereals, so as oats, millet, and wheat.

2. Jigsawspace: [The Viking Food](#)

3. Mozilla hubs:

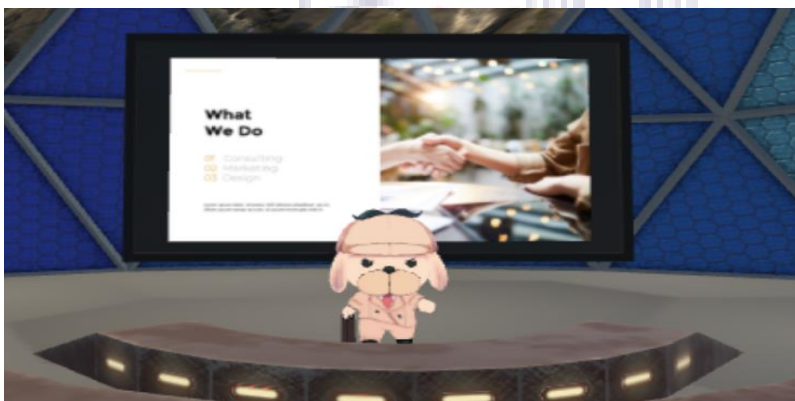
- The avatars I created:



- The avatar I created being used in Mozilla Hubs:



- [The scene I modified:](#)



Final presentation PPT

Final Presentation Viking Age

A Time to Live and Drink

408110261 Jimmy Huang
408110089 Ryan Chen
408110065 Darwin Au
408110388 Tina Chang
408110651 Tina Wu

Farm Link: <https://hub.link/FBYyUJR>
Longhouse Link: <https://hub.link/gmJEIq>

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01 Introduction

Jimmy Huang

"Then a bench was cleared in that banquet hall
So that Geats could have room to be together
And the party say, proud in their bearing
Strong and stalwart. An attendant stood by
With a decorated pitcher, pouring bright
Helpings of mead"

- *Beowulf* (491-96)

Where the Vikings Lived

Group 5: Sharon

```

    graph TD
      Villages --> Farm
      Villages --> Longhouses
      Villages --> Farmland
    
```

Lesson 1: Viking Houses

- Built of wood
- Ship-like outline, lined with clay
- Wooden planks placed vertically into the ground

- Near the farm and longhouse
- Crops that could make food

Purposes

Learning Viking Culture

```

    graph TD
      A[Where They Live] --> Learning
      B[What They Eat] --> Learning
    
```

02 Target Users Objectives

Ryan Chen

<h3>Target Users</h3> <p>Everyone interested in Viking Age culture, especially agriculture and food, is our target user.</p>	<h3>Objectives</h3> <p>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.</p>
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03 Storyboard

Ryan Chen

First Path: The Longhouse→The Farm



Second Path: The Farm→The Longhouse



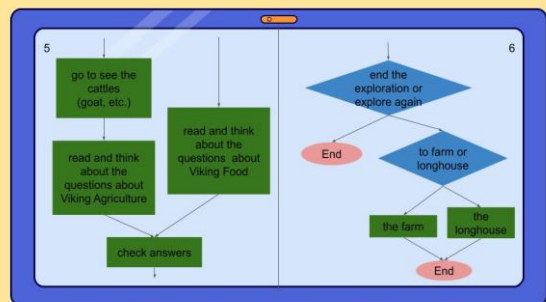
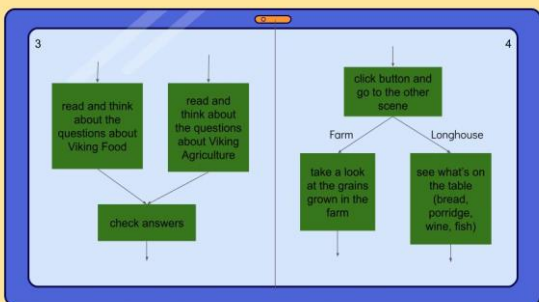
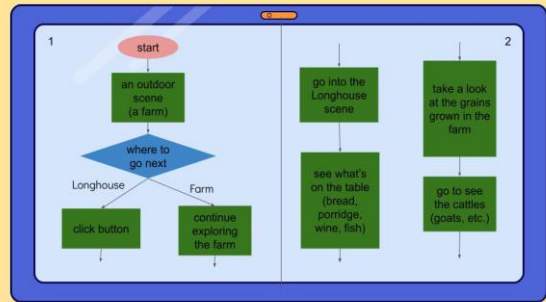
Second Path: The Farm→The Longhouse



Second Path: The Farm→The Longhouse



04
Flowchart
Tina Wu & Tina Chang



05
Highlights
Tina Wu & Tina Chang





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22



23



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Highlights of the Project

<p>1. Two Scenes Farm, longhouse</p>	<p>2. Clear Instructions Location, descriptions of objects</p>
<p>3. 3D Objects & Images Clearly demonstrate Viking culture</p>	<p>4. Q & A Section Help players understand the Viking culture</p>



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06

Problems Faced

Tina Wu & Tina Chang



Difficulties We Encountered

- 1. Problem rose from distance learning:**
malfunctional devices / technical problems → inefficient discussion
- 2. Problem of co-editing:**
Story Maps and Jig Space (O) → failed
Mozilla Hubs (O)

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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.

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Task Distribution

Mozilla Hubs— Darwin Au
Flowchart— Tina Wu, Tina Chang
Storyboard— Jimmy Huang, Ryan Chen



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Works Cited

- "Bread and Porridge in the Viking Age." *National Museum of Denmark*.
en.natmus.dk/historical-knowledge/denmark/prehistoric-period-until-1050-od/the-viking-age/food/bread-and-porridge.
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THANK YOU



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Viking Towns & The Place They Live

407110680 Sharon Liao

Outline

- I. Geography: Where Did The Vikings Live?
- II. Characteristics: Buildings and Towns

Geography

Where Did The Vikings Live?



The Homeland of Viking



- ❖ The Three Scandinavian Countries
 1. Danmark
 2. Norway
 3. Sweden
- ❖ Rural Areas
- ❖ Almost no towns

Climate



1. Cool summer
2. Heavy snow falls
3. Rains from Norwegian mountains
→ Hard to grow grain
→ Graze in mountains

Geography



- ❖ Fragmented land
1. Mountains, forest, bogs
 2. Fjords, lake, rivers
→ Lack of good soils
→ Hunger
→ Emigrate

Characteristics

Buildings and Towns

02

Farms

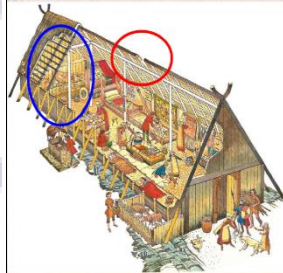


Viking Houses



- ❖ Denmark → longhouse
1. Built of wood
 2. Bowed walls in plan
 3. Ship-like outline, lined with clay
 4. Wooden planks placed vertically into the ground
 5. Sloping post

Inside the Viking Houses



- ❖ Live with animals
- ❖ Smoky house with a hole
→ without windows and chimneys
→ lung diseases

Inside the Turf



No Towns Before Viking Age




Sometimes, there were some seasonal market.



Ribe



- ❖ Established in the first decade of the eighth century
- ❖ The oldest town in Scandinavia
- ❖ Ribe were founded around in 9th Century under **royal control**
- ❖ a trade, ecclesiastical and administrative center

<h2 style="text-align: center;">Åhus</h2> <ul style="list-style-type: none"> ❖ One of the best preserved medieval towns in all of Sweden ❖ A craft and manufacturing center 	<h2 style="text-align: center;">References</h2> <p> https://www.krudsknives.com/wp-content/uploads/2019/09/Viking-Village.jpg https://www.historyextra.com/period/viking/vikings-history-facts/ https://res.cloudinary.com/simpleview/image/upload/v1470836048/clicnts/norway/narroyfjorden_fjord_norway_2_1_00b0127-14ad-4b3d-00b6-2ad83aac412.jpg https://s-media-cache-ak0.pinimg.com/originals/c1/c1/e1/c1e1e0e8073ca2ca344f40fa24a721.jpg https://www.google.com/url?sa=i&url=https://www.sciencemag.com/2019/04/11/viking-village-in-spring-illustration&psig=ACQVawzQVncSpd_Xo-171RoFAk1_8cust-1640061800881000&source=images&cd=vf&ved=0CAwCjRsqfwoTCMChQAAAAAABAU http://www.humboc.org/history/articles/daily_living/ps/erikssadfir.jpg https://www.google.com/url?sa=i&url=https://www.kristianstad.se/2019/02/27/culture-and-leisure/27tourism/27sec--de/27guides/27ahus---a-medieval-town/27&psig=ACQVawzQVHnTRC2Mz00raBZCe08cust-1640064688803000&source=images&cd=vf&ved=0CAwCjRsqfwoTCMChQAAAAAABAU https://c8.lamy.com/comp/2GE6R1R/ahus-sweden26-july-2021-fabrication-of-absolut-vodka-nearby-the-harbour-2GE6R1R.jpg </p>
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Reflection and future study

From the experience of the tools we used in this semester, including the Storymaps, Jigsawspace, Mozilla Hubs, and Mozilla Spoke, I think I did step out of my comfort zone when learning all these tools. I think I would never believe that I can successfully learn how to use these tools if I did not select this course. There is no regret in taking this course, and I appreciate having the chance to learn these tools with my group members who always show their support whenever I'm in need. With the interest of sharing articles on my social media account, learning Storymaps provide me with a new platform that I can share all my ideas on. Due to the pandemic, people nowadays spend more time working from home or studying at home, with Mozilla Hubs, it allows us to meet up in a virtual room and chat with each other, so I think it is a valuable experience to learn how to create a scene in Mozilla Spoke that can be uploaded to Mozilla Hubs for people to observe. Although I am still unfamiliar with some of the functions from Mozilla Spoke, it is definitely a tool that I would like to keep on learning in the future.

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