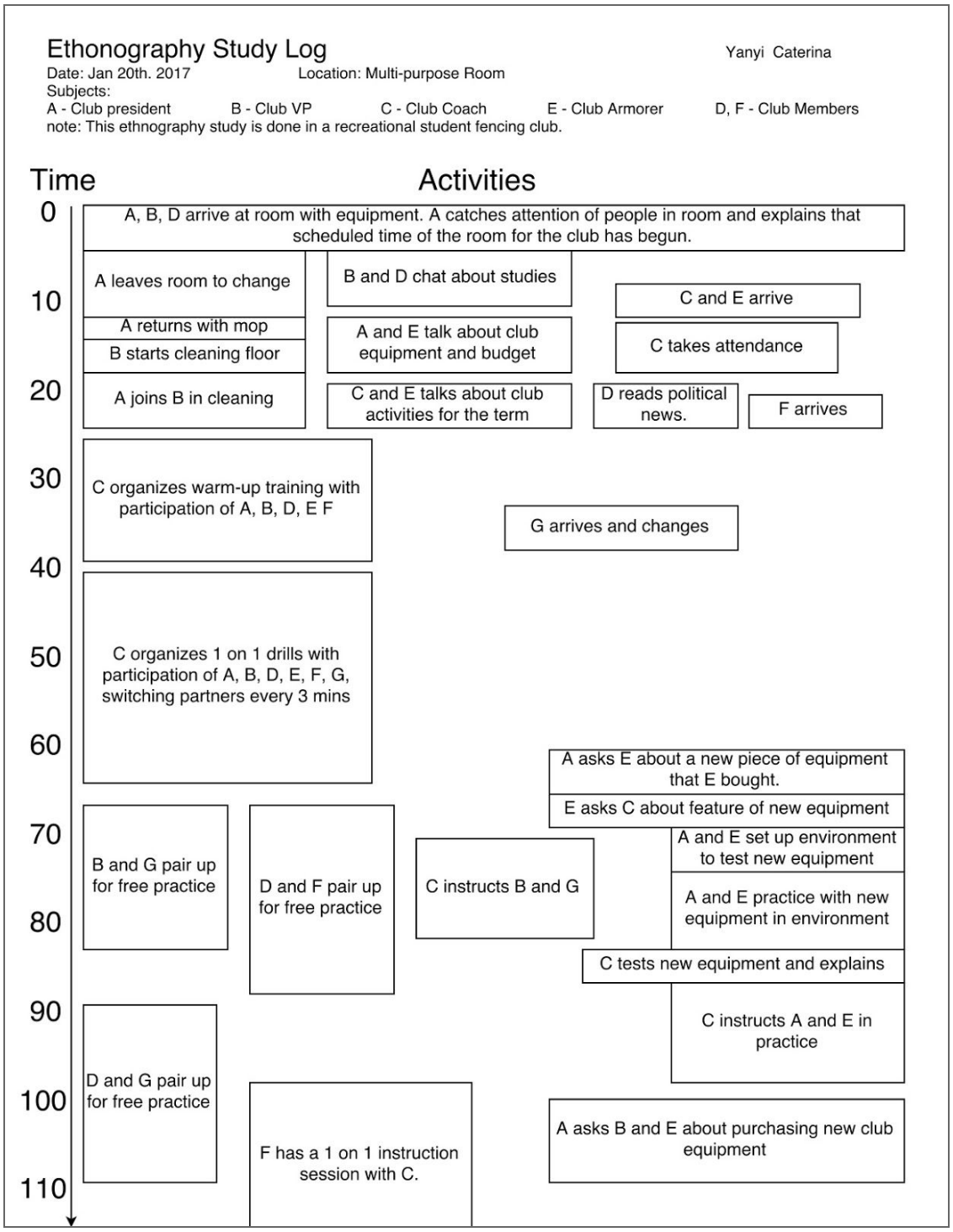
Project 3 Writeup Team: Li & Paun

1. Conduct an ethnography study. Observe potential users and record their activities.



2. Identify the project goal. Review ethnography results and identify an application that would improve something that the user currently does, or enables the user to do something that the user currently cannot do.

What: Fencing Technique Demonstration.

Description: The app allows the viewer to watch and learn basic fencing concepts and techniques in a VR environment. It allows close observation of fencing positions and moves with audio feedback from professional fencers.

Why: To train better or learn fencing from the pros.

Who: This app is for fencers of all levels. Beginners can learn how to fence, while more advanced fencers can hone their skills.

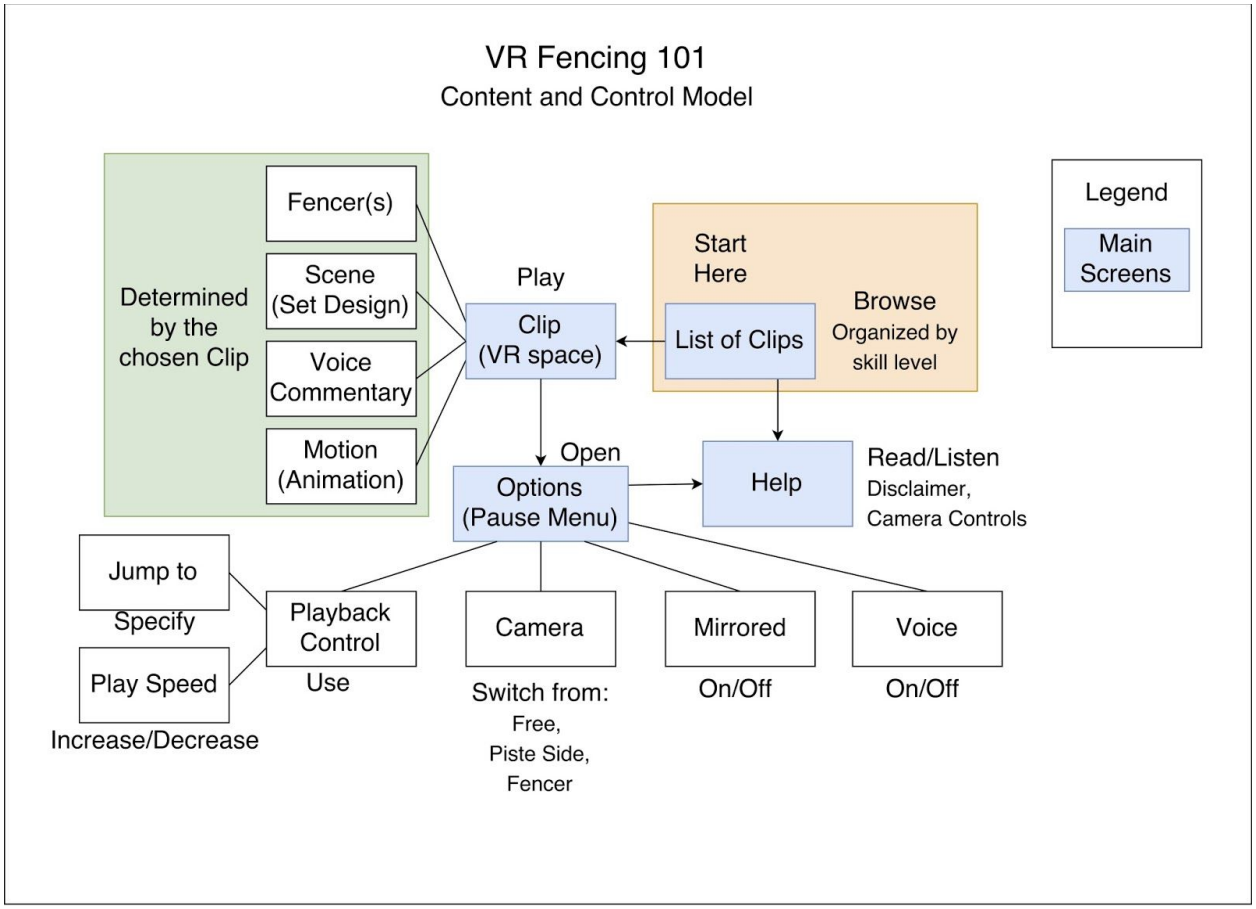
3. Estimate the time for each team member to complete (a) research, (b) design, (c) implementation, and (d) test of the project implementation.

Member	Research	Design	Implement	Test	Total
C. Paun	4 hrs	4 hrs	10 hrs	4 hrs	22 hrs
Y. Li	4 hrs	4 hr	10 hrs	4 hrs	22 hrs
Total	8 hrs	8 hrs	20 hrs	8 hrs	44 hrs

4. Write scenarios describing how users might use the application

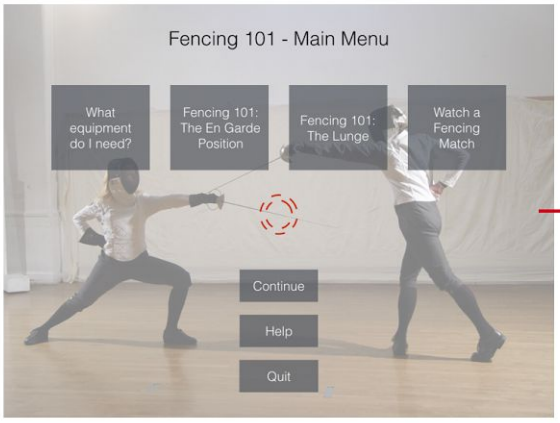
a. The user watches how to execute the “en guard” position, while listening to best practices regarding form and position.
b. The user watches a clip about basic in fencing, while listening to tips and best practices about form and position.
c. The user watches how to execute the “lunge attack,” while listening to best practices regarding form and position.
d. The user learns about to execute the “guard parries” techniques, while listening to best practices regarding form and position.

5. Identify the content and control models for the user interface

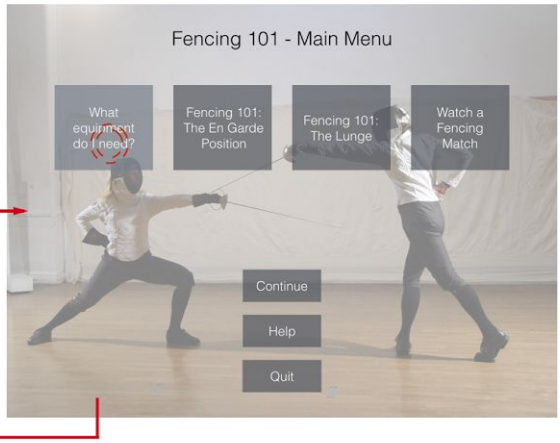


6. Create a mockup or prototype of the user interface.

1 - Main Scene

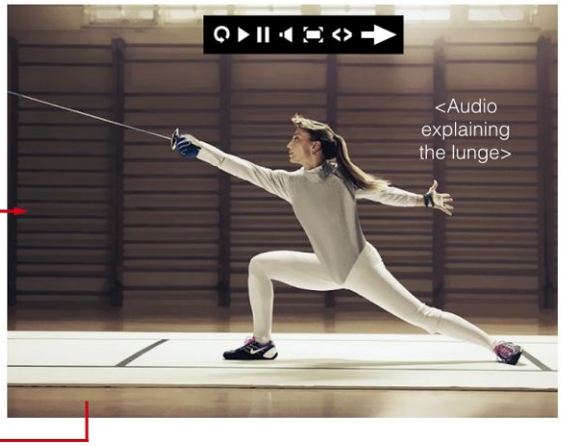


2 - Main Scene —> select secondary scene

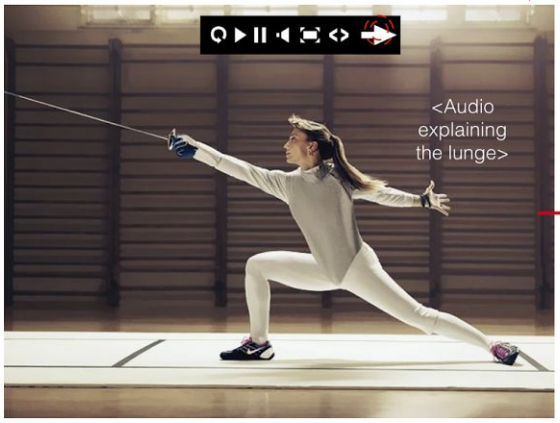


3 - Secondary Scene - the Lunge
view model of the lunge, with audio explaining the move

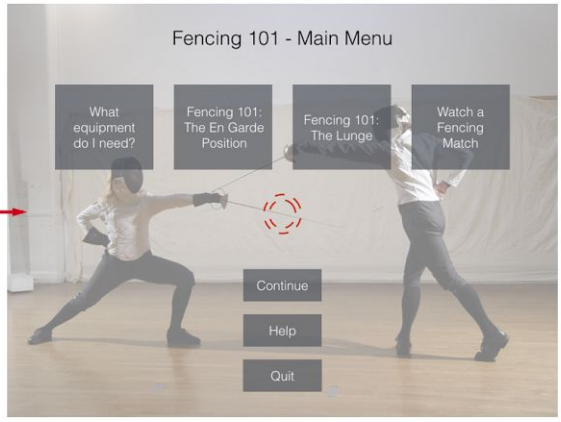
4 - Secondary Scene - press button to bring up the controls



5 - Secondary Scene - once the scene is done, return to the homepage



6 - Back to the Main Scene. Proceed by selecting another scene



7. Have your peers review the user interface mockup or prototype.

Peers suggested the following enhancements:

- Add a back button to navigate from the shopping cart back to the main shopping screen.
- Longer descriptions on each item would be nice.
- Another iteration of the app could include sizing charts, more photos, and maybe videos of each item.

General feedback:

- The app looks good and it seems intuitive and easy to use.
- The concept of having an app for selling only fencing equipment is really interesting.
- Knowing what I need to buy makes me more interested in trying out fencing.

For the first version of the app, there is a limited ability to examine each item, but sizing charts and videos of the each both sound like great ideas.

8. Focus Group

We conducted a focus group with members of the Portland State University Fencing Club. Since they were at one time new to fencing and they are very familiar with the sport right now, we figured they were in an unique position to evaluate the app and give us actionable feedback.

The feedback we gathered was very positive. They were interested in the prototypes we showed them and they would like to try the app once we launch it.

Questions Asked:

- What is your first impression of this app?
- What features would you want to see implemented next?
- Beyond more content, what interactions are you interested in experiencing with this app?
- Would you be interested in trying out the app once it is live?
- If you were new to fencing and wanted to learn more about it before joining a local club, would you pay a small fee for this app?

Main Menu Feedback:

- I would make the interface look less boxy.
- The “continue” button is not really needed.
- What does the help button do? Maybe clarify that.
- The button are too big and they cover the people in the background, which makes it feel less immersive.

Scene 1 Feedback:

- I would use the same control widgets as DVD player for skip, rewind, etc to make it easier on the user.
- The text could align better to the top of the screen.

Feedback on the Four Scenes:

- Equipment is a great place to start when learning about fencing.
- The second scene could the “garde” positions. It could show all eight positions with emphasis on the 6th, which is the “en garde” position.
- Discuss the “parry” position.
- Add “footwork” to the scenes.

General Feedback:

- This looks like a really cool app. I would want to try it out.
- Include how to get in touch with a local fencing club.
- The minimal scene is great.
- Limit zoom in and zoom out.
- Deliver this app via the freemium model, with free demos of the basic moved and paid premium content showing more advanced moves.

Takeaways:

It was great to put the app in front of people familiar with fencing and get positive feedback. One of the focus group attendees was very familiar with cardboard, so he gave us feedback on both fencing content and the VR experience.

9. Usability test script.

a. Thank you for agreeing to perform this usability test. Note that we are testing how easy it is to use the **Fencing 101** Cardboard VR app. This application allows you to learn about fencing, view demos of the positions, and understand the lingo associated with the sport. During this usability test, we are not testing you. We are interested in discovering what problems you encounter while using this app. Don’t worry about making mistakes. They will help us improve our application. Finally, only attempt to perform the tasks we are asking you to perform.

b. Process for loading the app:

- A demo of the app is located here: https://cs-560.github.io/hw/project3unity/demobuild/webdemo.html

- Note: your browser must support WebGL to be able to view the Unity demo.

c. Perform each of the following “performance” tasks:

1. You are in the “main menu” scene of the application. Use the mouse, trackpad, or the left and right arrow keys to navigate around the scene.
2. Press the “help” button to read the help instructions. Once you are done, come back to the “main menu” scene.
3. Navigate to the “en guard” scene. Watch and listen to the scene.
4. While in the “en guard” scene, bring up the playback menu (by right clicking).
5. While in the “playback menu,” move the scrollbar cursor.
6. Close the playback menu.
7. Bring up the playback menu and navigate back to the “main menu” scene.

d. Answer the following “preference” questions:

1. Is this your first time using a VR platform?
2. On a scale from 1 to 5 (with 1 being the lowest and 5 the highest), how easy was it to perform the tasks?
3. On a scale from 1 to 5 (with 1 being the lowest and 5 the highest), how did you like the look and feel of the app?
4. What was your favorite part about this application?
5. Does this application make you more interested in learning about fencing?

e. Thank you for providing your time and insight to help us improve this application.

Results

Performance Results

Task	**Subject 1**	**Subject 2**	**Subject 3**
1. You are in the “main menu” scene of the application. Use the mouse, trackpad, or the left and right arrow keys to navigate around the scene.	10 sec.	10 sec.	10 sec.

2. Press the “help” button to read the help instructions. Once you are done, come back to the “main menu” scene.	5 sec.	5 sec.	5 sec.
3. Navigate to the “en guard” scene. Watch and listen to the scene.	5 sec.	5 sec.	45 sec.
4. While in the “en guard” scene, bring up the playback menu (by right clicking on macs).	5 sec.	5 sec.	10 sec.
5. While in the “playback menu,” move the scrollbar cursor.	30 sec.	5 sec.	failed
6. Close the playback menu.	2 sec.	2 sec.	2 sec.
7. Bring up the playback menu and navigate back to the “main menu” scene.	2 sec.	2 sec.	2 sec.

Preference Results

Question	**Subject 1**	**Subject 2**	**Subject 3**
1. Is this your first time using a VR platform?	Yes	Yes	Yes
2. On a scale from 1 to 5 (with 1 being the lowest and 5 the highest), how easy was it to perform the tasks?	3	4/3	4
3. On a scale from 1 to 5 (with 1 being the lowest and 5 the highest), how did you like the look and feel of the app?	3	4	5

4. What did you like best about the application?	The nifty menu.	The fact that the sword wobbles. It's incredible!	Seeing the 3D model move.
5. Does this application make you more interested in learning about fencing?	No (but to be fair, not much could.)	Actually, yes!	Not really.

Takeaways

- The usability tests went incredibly well, given the fact that this was everyone's first time interacting with a VR platform. The application is quite intuitive after the first few moments.
- There was a lot of excitement around app. Everyone who tested the app wanted to be kept in the loop and re-test the app once all the scenes are implemented.

10. Describe how to access the project's implementation.

The project repository is located here: github.com/cs-560/Fencing101GoogleVR

11. Describe how to access the project's implementation

View in Unity Web Player

- Go to this page: https://cs-560.github.io/project3.html and click on the "View demo" button. Your browser needs to support WebGL to be able to play Unity.

View on Android

- Download the .apk file from:
    - Google Drive (cs-560-project-3 folder: drive.google.com/drive/folders/0B-Iy6qHwGAJjR1dmR0RrbFQxeFU)
    - Dropbox (cs-560-project-3 folder www.dropbox.com/sh/d3h0gp36181teal/AAA9KKt_z84xvsxkeMRZY69Ma?dl=0)
- Run the app on your Android phone.
- When prompted, scan the QR reader on your Cardboard VR headset and place your phone in Cardboard. Enjoy.

View on iPhone

- Go to the project page and download the project build: github.com/cs-560/Fencing101GoogleVR
- Build the project.
- Open the .xcodeproj file in Xcode.
- You will need to have a Apple Developer profile provisioned to be able to run an app on your phone.
- Connect your phone to your laptop and run the project in Xcode.
- When prompted, scan the QR reader on your Cardboard VR headset and place your phone in Cardboard. Enjoy.

12. Actual time spent by each team member.

Member	Research	Design	Implement	Test	Total
C. Paun	4 hrs	4 hrs	10 hrs	10 hrs	28 hrs
Y. Li	4 hrs	4 hrs	40 hrs	4 hrs	52 hrs
Total	8 hrs	8 hrs	50 hrs	14 hrs	80 hrs

12. Summary of what each team member learned by doing the lab project

There were numerous challenges and learning experiences involved in this project:

- What content and what features do we need to include to make this an interesting app to the potential user.
- Learning Unity.
- Learning how to build the fencing models and make them look as realistic as possible.
- Learning Xcode and understanding how to build a project from Unity.
- And finally, putting it all together for a project demo, which included procuring an Android phone for the presentation.

13. Summarize what perspective users liked and disliked about the application

The feedback has been very positive. Most people are new to VR, so anything related to that sounds cool and exciting. They also realize it's a student project, so they haven't

been too critical of the app. Several of the users we spoke with saw the project and had several questions about Unity, VR, and how they can get started. So, we are introducing people to the medium!

14. Final Thoughts

This project was a great learning experience, but most of the learning related to Unity, modeling, Xcode, the Android environment, and other implementation issues. That left little time to dive into the user experience in a VR environment.

Ultimately, it is difficult to learn new languages and new tools while also implementing a project of this scope in such a short time. What we are turning in is the final project for this class, but it certainly feels like just the v1 of an app that we will hopefully continue working on in the future. We have learned so much about this medium, but of course, there is much more to learn!