

Weekly Report 9

February 14th – February 25th, 2020

Group 33 | VIRA (Virtual Insight into Real Athletics)

General Information

Advisor

Dr. Diane Rover

Team Members

Katie Perkins – Team Lead

Nate Irmiter – Stakeholder Communicator

Bailey Righi – Product Manager

Willem Paul – Standardization Manager

Caroline Rankin – Meeting Facilitator

Weekly Summary

Last week our goals were to populate our database with test data, creating and connecting basic UI screens, and learning about procedural animation. We were able to reach these goals and have made great progress, especially with our work on procedural animation and with data inside of our database. Next week we hope to continue what we've been doing with connecting the database to the UI and with procedural animation.

Past Week Accomplishments

Katie

This week I worked on the procedural animation tutorial for the gecko, and then I decided to move on to using inverse kinematics scripts on humanoid models instead. I evaluated the assets that are already available for IK in Unity, and after testing out two that would work for our project, I decided to use one called FastIK. After getting the new models from Nate, I was able to apply the script to them and test out the best “chain length” of bones for realistic movement of an arm. I also have started the process of converting my test project that I've been working on in Unity to something that is VR-compatible so that I can start testing out how things look in the Oculus Quest. I also helped plan out what the server and client sides need to do in order to make the performance dashboard work.

Nate

This week I worked on figuring out how to give our models clothing! I ended up doing a bunch of troubleshooting with our models, and the problem turned out being a file adapter between MakeHuman and Blender. So I ended up downloading our models into Blender

2.79B with clothes, importing them into 2.8, separating the clothing meshes since they imported sort of wrong, and then recoloring them and rigging up the models so we have more authentic (e.g. not gray) people with clothing.

Bailey

I created the basic graphics for the performance dashboard and disabled navigation buttons upon starting a guided module. I also connected the Unity app to the server, so it can now request json objects from the server and has the capability to adjust the scene in Unity based on the server's response.

Willem

This week, I spent a lot of time with the server code and the database. I worked on further implementing the functionality to retrieve the data required by the application. This includes a list of the guided modules associated with each body area, the comments associated with each guided module, and the statistics for a given user.

Caroline

My goals this week were to work on creating basic screens in Unity as well as pulling data from the server. I was able to work with Bailey on creating a script in Unity that pulls from the server and then updates an object. I did struggle with this quite a bit due to the lack of documentation on C#, but I am now able to parse the data I need.

Individual Contributions

Name	Hours This Week	Cumulative Hours
Katie	12	25
Nate	12	24
Bailey	12	23
Willem	12	27
Caroline	13	25

Plans for the Upcoming Week

Katie

My plan is to finish converting my project to VR and implement the things I need to in order for a user to put on the headset and use the controllers to manipulate the model's arm in VR. After I do that, I plan to work on limiting the range of motion within the IK script we're using so that the arm and fingers don't stretch unnaturally with certain movements.

Nate

Now that I've got the clothing stuff figured out, I'm going to rig up more models so we have a variety to choose from, as well as try and get images to show up on clothing so we can have some sort of branding on our models.

Bailey

I will be working on loading data from the server and creating components in Unity scenes based on the information from the server. I will do this for the module options in the guided mode and for the statistics in the performance dashboard.

Willem

I plan to continue implementing server functionality. The next tasks are to continue adding more statistics and to clean up the test data we had added to the database.

Caroline

Some tasks that I am going to work on include parsing data from the server to update text objects in Unity. I will also work on transitioning from screen to screen in Unity.

Summary of Our Weekly Advisor Meeting

For our two weekly advisor meetings, we discussed the progress we had made during the week and what we were planning to work on for the next week. Our advisor suggested that we look at what other applications in the medical field typically do to show users statistics on their progress. She also suggested that we talk to our athletic trainer contact to see what kind of feedback athletic training students usually get during their clinicals.