

Assignment 4: Exploring Your Problem

As I have been researching what I have wanted to focus on, I have decided to go on the development track. I have always been interested in medical research since I have grown up around doctors, nurses and physician assistants. I was able to find a team that also shared the same interests as me and as we pondered and researched what we could do to educate people in medical field, we decided to build an organ simulator using Unity. As we started researching similar tools that are already invented, we saw an app in the Google Play store called 'Human Anatomy Atlas', which is a tool that visualizes 3D anatomy. Now you may be wondering what would make our tool different than this one. The answer is that we would be able to change the 3D model of the organ dynamically to match medical conditions. This would help educate someone on how to keep his or her organs in a healthy state. If someone is curious, he or she can see how eating a certain amount of carbs would affect the overall state of the heart for example. Then the heart's condition would change dynamically and this could simulate a real-world problem. As we have been doing our research, we have not found a tool that can do this. One of the challenges for this project is time, because working with graphics takes a good amount of time and there is also the learning factor because we would need to know how to change the organs' conditions dynamically as certain factors are tweaked.

As I researched similar products, Oculus has actually come out with a VR simulator of the human body called 3D Organon VR Anatomy ("3D Organon VR Anatomy", 2018). According to Oculus' site, "you can manipulate bones, muscles, vessels, organs and other anatomical structures in 3D space" ("3D Organon VR Anatomy", 2018). Although this is very useful for studying the human body, it does not change the organs' states dynamically when certain factors are placed, such as being in a certain environment, eating certain foods and taking certain drugs. The goal of my team is to build a simulator that will not only show the organs statically but will also show them change dynamically as these factors are put in place. 3D Organon VR Anatomy's creators have said that their simulator is for "helping students grasp the challenging subject of anatomy, but also is easily understood by individuals without a medical background. It is an advanced learning tool that could complement any anatomy curriculum and help everyone visualize and explore anatomy" ("3D Organon VR Anatomy" 2018). Our goal is just about the same, except we want the organs to change dynamically which will be the challenge that we are trying to solve. We also want our simulator to be understood by people who are not familiar with medical terminology so there could be some reference tools that can be used for them to follow if they do not understand something. Right now, at the University of California in San Francisco, there is a virtual reality program being used to immerse medical students in a 3D world where they can see bones and organs of the human body right in front of their own eyes (Baker, 2017). Our goal is to just show the organs rather than the entire human body and how each of those organs change their states.

References

1. Baker, M. (2017, September 19). How VR is revolutionizing the way future doctors are learning about our bodies. Retrieved February 04, 2018, from <https://phys.org/news/2017-09-vr-revolutionizing-future-doctors-bodies.html>
2. 3D Organon VR Anatomy. (n.d.). Retrieved February 04, 2018, from <https://www.oculus.com/experiences/rift/872418872856459/>