## Aims

Our aim for this project is to finish phase 1 (or parts of it), which is the full-body motion detection function. Currently, most VR technology only allows the user to use their upper body (hands and head). Because of that, our main goal is to develop a suit that allows the user to move freely in the virtual world while wearing it (upper-body and lower-body). And to achieve this goal, we would have to divide our project into sub goals.

Goal 1: First and foremost, we will need to decide what kind of motion detection method we want to use. The reason this goal is significant to the project is everything we are going to develop will be based on which path we took. There are several types of method that big companies are using, like VR tracking with Optic, placing sensors around the user environment, and use trackers to track user motion (like Vive Cosmos and Oculus Rift); or Non-optical VR tracking, use electromechanical sensors such as gyroscopes to track motion (the PS4 controller) or Myo armband which tracks electrical impulse from the muscles.

Goal 2: After we have decided which method, we want to base our project on, we will start to develop the arm and upper body motion detection. Whichever method we choose to use, our aim in this goal is to use that motion detection method and detect our arm motion. And since arm motion detection is the most basic function in all the methods, it will be beneficial for us to achieve this goal early on. Moreover, it would also help us to familiarize ourselves with the technology we choose.

Goal 3: Our third goal is to develop the lower body component of the suit and connect it with the upper body component. The reason this goal seems longer than the previous goals is the extra step of connecting to the upper body component. Moreover, this task could be a bit challenging since we have to make sure that the lower component works smoothly (no misinterpretation, no conflict) with the upper component. Furthermore, assuming we have already achieved the previous goals, the motion detection function of the lower body component will be just like the upper body component.

Goal 4: Our fourth goal is to develop the hand gesture detection function. Because of how many gestures our hand can produce, this would probably be one of the most challenging components. Furthermore, our hand is the most important tool on our body, so this function must run smoothly and accurately.

Goal 5: Our final goal is to make sure that everything will work smoothly with each other. Before we can move on to the next phase of our project, we want to make sure that the motion tracking function of the suit is working as intended. However, we are going to refine our motion tracking function to an extent as not everything will work perfectly, and we cannot work on it forever. Therefore, the goal is satisfied when there are not any major glitches.

The goals are organized by their priority in phase 1 of the project. If things do not go as expected, we will try and finish, at least, the second goal. Because of how fundamental and beneficial to finish the second goal is, it is our top priority. If we successfully achieve the second goal, we would also acquire the knowledge to do part of the third goal.

## Plans and Progress