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Overview of Project Goals and Outcomes

With creating a system for simulation in a real-time war environment simulated in a virtual reality environment we will create a new training, simulation, and real-time application tool that will provide a great advantage to users and commanders. Users will be able to put on their virtual reality headset and immediately immerse themselves into the world created by our system. Player involvement will be a large area of development in this project. The player should be able to command friendly NPCs to an extent and perceive the field from multiple perspectives. It is expected that all friendly NPCs (Non-player characters) should be able to enact commands received from the player. It is expected that all NPCs will take information from the environment to compute actions.

Current Status of Project

We are currently in a good start for our project. Our goals for sprint one was to mostly create the environment in which we would work, get familiar with unity, develop, and theorize UML for future work, and start the development of our environment or scene.

Our first tasks we completed in the task was to create our GitHub and to make the unity project. This task incorporated finding plugins that would be necessary to the development of the project and ensure that unity versions lined up. The only two plugins we decided to use were the oculus plugin and the GitHub plugin.

Another thing we needed to ensure every team member could do was work with Unity. We have spent most of the time during the first sprint working on side-projects to get familiar with Unity and working with it. This is something that will be ongoing during winter break for all team members as well to ensure we are prepared to work on the project again in the second sprint.

We also worked on UML with the focus of keeping it close to where we are in the development and not getting too far ahead of ourselves. Because of this constraint we have not developed as much UML as might have been expected of us because we had not gotten too far into the development of the project during this first sprint. This has made our UML much more abstract and non-specific.

We currently plan on developing on this project minimally over winter-break instead focusing mostly on the development of personal skills and getting continually familiar

with Unity. We are still planning on meeting every other week to make sure any work that we are doing on the project is still in-line with our project goals.

Problems That Need Resolving

Over the course of the term a few problems arose with this project that hindered our progress. First and foremost, would be the lack of hardware necessary to properly test a virtual environment for each programmer. At this time, our partner has shown that more hardware is on the way, but it will be until late this term or early into the next term. From there our problems were contained to the level of automation needed to be implemented within the environment as in how sophisticated the system should be or should it be a simple pathing system for each unit. This portion can be solved by getting a better understanding of what exactly our project partner wants in terms of autonomy within the environment. To solve this, we intend to get exact words from our partner as to what fundamental features are needed and how they want them specifically implemented within the environment. The most important issue that has come upon us is the necessity to fine tune the project scope and the necessary features and how the partner wishes to have them implemented. At this time, some features are still somewhat vague in how they were stated and in order to remedy this we will be meeting with our partner and going into depth what and how things need to be exactly implemented.

Project Highlights

https://www.youtube.com/watch?v=B8trX_PSE3E&feature=emb_logo demo video

https://drive.google.com/file/d/1Odv5pSAIdi1oLG241eTbKS8LLq1dIJQH/view UML

https://drive.google.com/file/d/1nSndVcEMVpmUSsI0K-BzZJQKh4RAeIHw/view UML

https://drive.google.com/file/d/1ePzO2gj7uSGn90OAnXSV4-9-kj88KMEh/view UML

Brief Summary of Design Review Feedback

The team was recommended to use Unreal Engine to simplify the AI production, however Unity was requested by the project partner and all team members have

experience with it. Some feedback recommended that there be objectives or a scoring system to evaluate the user performance. This could be tracked by the survivability of allied and neutral forces by the end of the scenario.