Jason Nguyen

**Multiplayer Networking System**

Throughout my whole life, I played a vast amount of video games and wanted to learn how to make one myself. Multiplayer games have become popular, especially during the preceding pandemic where everyone was confined to their homes and limited to remote contact with their friends and family. I wanted to develop and understand networking systems, used to support non-local synchronous multiplayer gameplayer for one to four players at once.

One of the struggles working on this project was the minimal experience and knowledge with making games, more so one with multiplayer functionality. My experience and expertise was limited to the one major video game class held here at UW Bothell and the abundance of YouTube video tutorials that I watched. It was challenging to learn and understand a highly complex system without having prior knowledge of how it worked in a class. There were also few resources available on the networking system that my team and I chose that would help us to utilize it to the fullest.

To handle this challenge, my team and I worked together to understand networking systems over a six month period. In the first three months of the project, a lot of trial and error was done through creating and testing prototypes. We focused on creating individual prototypes and shared them with Professor Kelvin Sung to gain insight about the functionality of the system and its importance to the game, especially in a multiplayer setting. With the networking system, we were also testing its maximum capabilities like how much it can support server and client-side updates. The next three months thereafter focused on merging the prototypes together to create a more cohesive game. This also included sharing and playtesting our project with three other capstone groups while exchanging feedback on ideas for further enhancing the game mechanics and level design.

At the end of the project, I learned a lot about what it meant to be a video game designer and programmer. My knowledge and experience working with prototyping, bug testing, and designing have improved drastically over the course of this project. I also understood that making video games is challenging, especially when working with multiplayer networking systems. This opportunity has been a lot of strenuous work, but the outcome of this project was worth the time and effort as we were able to create a video game.