**Introduction**

For Senior Design, our team plans to create a multiplayer video game, in which players try to escape their environment a la real-life escape room puzzles. The game will be created using 2D sprites and assets. Networked multiplayer will be implemented as one of the game’s primary features. A story component will also be included to further engage players. The COVID-19 pandemic deterred escape room enthusiasts from participating in that hobby. Our team’s game will attempt to fill the market created by those who would be excited to experience similar puzzles, but in a virtual environment.

**Experience**

The UC Computer Science curriculum has given me a lot of knowledge which will help me develop this project. While creating the game’s networking component, the information I was taught in *CS4065: Networks and Cloud Computing* will be very helpful. While Unity uses libraries to abstract parts of networking away from developers, understanding networking topics will allow me to make efficient code and networked game objects. *MATH2076: Linear Algebra* has also taught me especially helpful information; I can understand why it’s a required course for Computer Science majors. While developing with Unity, and especially when manipulating the positions of on-screen objects in real time, an understanding of linear algebra principles is extremely helpful if not required. The organizational skills and techniques I learned through *EECE3090C: Software Engineering* will also be very helpful during the collaborative development of this project.

My co-op experiences have also provided me with many skills which will allow me to develop this project. For my first co-op experience, I was a research assistant for a professor on campus at UC. With this professor as an advisor / manager, I spent ~40 hours per week creating a Unity project to be demonstrated at a conference the following summer. Working with that professor provided me with many technical skills, and allowed me to familiarize myself with Unity, which I had only used once prior. On my following two co-ops experiences, I worked at Siemens as a Software Engineering Co-op on a scrum team creating the Teamcenter Classification AI product. This experience provided me with many soft skills, which were not as prevalent on my previous co-op experience due to how I had primarily worked alone in my apartment. My 4th and 5th co-ops, during which I worked as a Software Engineering co-op at Northrop Grumman, provided me with a lot of experience with Continuous Integration / Automated testing, which I also hope to implement into this project.

**Approach / Motivation**

Raja and I decided to create a team for senior design because we were both interested in creating a Unity game. For our first team meeting, we discussed what we’d specifically want to make for our project. Raja was specifically interested in adding some previously-created game-making tools to the project, and they were designed for 2D. Because of this, and because acquiring non-code assets would be easier, we agreed to make a 2D project. Aside from this, Raja was interested in adding story components to a game, and I was interested in creating a networked multiplayer game. An escape room game seemed like a great option since the previously mentioned components would fit naturally. We also discussed how post-covid interest in escape rooms could make our game more appealing to players.

I’m extremely excited to be creating a game for senior design! I started developing games as a hobby at hackathons / game jams during Freshman year and have continued to do so throughout my college career. While short-term projects like those are fun to make, working on long-term projects gives me the opportunity to add a level of polish that I can’t achieve in a 24–48-hour timeframe. I made a Unity game for my *EECE3090C: Software Engineering* project alongside several other contributors, however those colleagues weren’t very knowledgeable with Unity. I felt at the time that I could’ve made a better project if I’d grouped up with developers who had more Unity experience. I hope that with the help of Raja, who has plenty of Unity experience himself, this project can be made with an even greater scope and with far better polish than the one I made in Software Engineering.