**Introduction**

For my senior design project, I aim to develop a solution that addresses a challenge the UC Rec Center faces. The project seeks to enhance the gym experience, particularly during peak hours, by leveraging artificial intelligence and motion sensor technology. Although the specifics of the solution are still under development, the goal is to create a product that streamlines gym operations and improves user satisfaction. By integrating advanced technologies, the project will solve a practical problem and push the boundaries of innovation in a real-world setting.

**Impact of College Curriculum**

My college curriculum has been instrumental in preparing me for this project, mainly through the Software Engineering course (EECE 3093C). This course gave me a comprehensive understanding of project structuring and lifecycle management, which is essential for keeping our team organized and on track. Additionally, the Database Design course (CS 4092) equipped me with knowledge of SQL, which will be crucial for managing and analyzing the data collected by our system. These courses have honed my technical and project management skills, allowing me to approach the design and implementation phases of the project confidently.

**Influence of Co-op Experience**

My co-op experience at Cimx, where I worked as a Software Developer, has greatly influenced my approach to this project. At Cimx, I was involved in developing a cloud-based software solution, which taught me valuable lessons about team collaboration and agile development methodologies. Understanding how development teams structure sprints and manage deliverables has prepared me to apply similar strategies to our project. Moreover, my experience coding with SQL will directly apply to controlling and analyzing the data our system will generate, ensuring that we can effectively monitor and enhance gym operations.

**Motivation and Preliminary Approach**

My motivation for this project stems from a desire to improve the commercial gym experience I have personally experienced at the UC Rec Center throughout college. Creating a solution that enhances the flow and efficiency of gym operations during busy hours is exciting and rewarding. Additionally, this project presents an opportunity to work with SQL and camera-capturing technologies, areas that I am particularly enthusiastic about. My preliminary approach involves designing a system integrating motion sensors and AI algorithms to monitor and manage gym usage effectively. I anticipate that this will lead to a more streamlined and user-friendly gym experience, ultimately achieving our goal of improving operational efficiency.

**Evaluation and Expected Results**

To evaluate my contributions to the project, I will set clear milestones and performance indicators, such as successful implementation of core features and positive feedback from tests. Knowing when the project is complete will involve meeting predefined goals and ensuring the system functions as intended. I will assess the quality of my work by comparing the project's outcomes against the initial objectives and seeking feedback from peers. Achieving a well-functioning solution that enhances the gym experience and demonstrates technological innovation will signify the successful completion of the project.