CEN 4090L: Software Engineering Lab
Florida State University
- Group Project Proposal Template –

1. **Project title**
   Smart Gym Tracker

2. **Brief overview of what you are proposing**
   We are looking at designing a web application for use as a gym metrics tracking application. This web application will track various data points such as sets, reps, weight, body composition, and other values a person would care about when analyzing their health. We also look to implement a milestone reward tracker and personally curated suggestions to make people more motivated to continue working out. These tracking, trend analysis, and suggestion featured are going to be designed in the intent to make the app simple for those who want a basic app, but also more personalized and in-depth for those who want to see the fine details of their fitness journey.

3. **Motivation**
   As all members of this group frequent the gym, we decided that creating something that would not only benefit our daily lives but also benefit others that want to simply track their progress without having to pay premiums for other apps. This application would not only allow us to apply our knowledge of software engineering but also enable us to build a meaningful application that we could use in our daily lives.

4. **Features to be implemented and types of users**

   Users
   - Admin – Has all the same features as a user in a demo view, plus access to user management pages and the ability to view and edit universal data, such as the exercise pool and set options. These pages manage behind-the-scenes data so users have a simple and clean experience.

   - User – Will be able to see all standard features that enable data entry for user specific data. This includes the: workout and exercise entry forms, body biometric data, data trends and reports, personalized suggestions, and the notification panel.

   Features
   - Workout, Exercise, Set, and Rep input forms – These will be the primary focal point that the remaining features will be built around. These will gather the majority of the data entry from workouts that will populate the trend reports and suggestion feeds.
   - Biometric data collection – This will be used to show trends in how a person progresses by allowing users to input body measurements to monitor progress over time.
   - Milestone and Progress Tracking – Users can track streaks, simple goals, and monthly challenges based on their workout inputs. Gamified rewards can be added later as an optional feature.
   - Smart tips and suggestions – These will be trend analysis that will be generated from their input data to provide hints and tips about what they might want to change in their workout, such as if they have stalled in their progress.

- Notifications –Highlights recent suggestions or important updates; can initially be part of the dashboard.

5. **Risk / Challenges**
   - Other classes and jobs – Every member of this group has other classes and some have other jobs and responsibilities that could make it more difficult to focus their time on this project.
   - Team communication for scheduling conflicts – Due to a lot of the other responsibilities people have, we will need to work harder to communicate and organize ourselves to meet up and work on our project.
   - Unknown of some features and dependencies – Due to it being hard to fully think of every library and feature we need before the full design of the project, there is some uncertainty in how complex some of these features will be.

6. **Existing related projects**
   There are existing gym tracking app, but most are either very basic or behind paywalls or have lots of ads. Most of these applications are very flashy, but their underlying foundations of the apps are way more complex then they need to be for the common gym goer. Some of these apps include: Strong, RP Hypertrophy App, MyFitnessPal, Apple Fitness+, Liftoff, etc. All these apps do provide similar features to our proposed app, but where ours will stand out is that it will be designed to try and make the app very powerful and useful but simplistic and easy to use. Most of these other apps will share most of our core features but ours will be integrated into a simplified app that people of all ages can use to simply track and monitor their physical progression.

7. **Intended platform / programming language**
   Our application is designed to be a web application. Our frontend is going to be designed with a combination of HTML, CSS, and JavaScript. Our backend is going to be developed in C#. Our database will be developed in SQL for scripts and schema to be used for a MySQL database.

8. **Third-party libraries / APIs to be used**
   Frontend – React, Tailwind CSS
   Backend – Free-Exercise-DB
   Database – MySQL database will be used.
   Data exchange- JSON
   These are subject to change as needs and/or difficulties arise.

9. **Team members, expertise, project responsibilities, and team organization**
   - Matthew Cegala, MLC22R – Database engineer and team organization - My skills include: MySQL databases, C#, C++, HTML, CSS, PHP, docker, networking, cybersecurity knowledge, web application and desktop development. - My main responsibility will be creating the SQL scripts and the schema for the database. I will also assist in the frontend and backend when needed. I will also help organize and maintain meeting and documentation for the project when needed, as well as review pull requests and merges.

- Amanda Orama, - AO22H – Frontend and UI/UX engineer - HTML, CSS, JavaScript, React, UI/UX design - My main responsibility will be designing and implementing the front-end of the application, including creating user interfaces, layouts, and styling to ensure a clean and user-friendly experience.

- Nicholas Holguin, NCH22A – Backend and frontend engineer - C#, C++, Python, HTML, PHP - My main responsibility is to help design the frontend and/or the backend

- Ashton Singpradith, AS23DI – Backend engineer – C++, C#, Python, Java, .NET - My responsibility will mainly be working on the backend of the application with my fellow group mates. I will also be available to provide aid if needed from the front-end/database department.

- Matthew Hummel, MBH22 – Backend engineer - <Databases, Connecting API's, App Development, Webapp Development; C++, Java, Python, C#, SQL, Swift, HTML, CSS> - <I will be responsible for primarily working on the backend, checking fellow backend code, and being available for assistance for other groups (databases, frontend)>

In order to communicate on this project we will primarily be using a combination of Microsoft Teams for meetings, sharing non-code documents, and general conversation. GitHub will be used for submissions of code and code review tasks. We also have text group chats for quick responses when needed. We plan to meet in person during our weekly class meetings at 10:40AM – 11:30AM in HCB_103, but primarily use Teams to join calls and collaborate because we feel that it will be easier for impromptu help. We will for the most part be all meetings and agreeing on what needs to be done based on interests, but one person will be in charge of maintaining some of the administrative and documentation tasks to ensure that everything is tracked and verified.