Project Charter - Team 8
Athlete Central Application

Team Members: Jane Billa, Jennie Kang, Jiaxun Li, Elijah Shiffer, Alice Tang, Ethan Whiteman

Problem Statement

Student athletes and coaches currently lack a centralized, secure, and user-friendly platform to record performance, monitor progress, and manage availability. This gap makes it difficult to efficiently track data, provide timely feedback, and make informed team lineup decisions, especially when injuries occur. Most existing athlete/coach apps only really log workouts and track progress, our Athlete Central Application is geared towards competitive athletes and has features to predict future performance. This software aims to bridge the gap between coaches and athletes, as well as athletes with their fellow teammates, allowing them to keep track of their progress and make realistic goals for themselves based on algorithmic-based predictions.

Project Objectives

- Develop a centralized web-based platform using JavaScript and Firebase, providing a secure and user-friendly environment for athletes and coaches to manage performance data.
- Begin implementation with competitive swimming as the initial sport to validate and refine core functionalities, with the platform designed to be scalable and adaptable for supporting additional sports in future phases.
- Work the functionalities to work functionally on other individual-work based competitive sports, like rowing, track/running, and weight lifting.
- Record and store performance data from training sessions and competitions.
- Track athlete statistics including health, injury status, and availability.
- Enable secure communication features such as notes and feedback sharing, controlled by role-based permissions to ensure information is delivered appropriately.
- Implement a prediction module to estimate future performance based on past results.
- Deliver clear visualizations and reports such as progress graphs and performance summaries, enabling both quick reviews and deeper insights into athlete development.

- Ensure privacy and data security by implementing role-based access control, allowing coaches and athletes to access only the data relevant to their roles.

Stakeholders

- Users: Highschool/Collegiate athletes and coaches
- Developers: CS307 FA25 Team 8
- Project Coordinator: James Ouyang
- Project Owners: CS307 FA25 Team 8

Project Deliverables

Technology Stack:

- Web based front end: Next.js (React) + TypeScript + Tailwind CSS
- Backend: Firebase, Python

For athletes:

- Access performance records and trends to review past training sessions and competition results.
- View performance predictions generated from historical data to understand progress and set goals.
- Receive and review feedback from coaches, including structured notes and performance suggestions.
- Update personal status by marking themselves as active, injured, or unavailable.
- Communicate securely with coaches through notes or direct feedback channels.

For coaches:

- Enter and manage athletes' scores from training sessions and competitions.
- Monitor student progress with trend analysis and compare performance across time periods.
- Add structured feedback notes to guide athletes' improvement.
- Analyze performance predictions to anticipate results and adjust training plans.
- Track athlete states (health, injury, availability).
- Generate reports and visualizations summarizing athlete and team progress.
- Manage lineups based on athlete availability and health conditions.