

Post-Demo Reflection – FitTrack Project

This project involved designing and implementing a simple fitness tracking web application using Firebase services. The goal was to create a functional, cloud-hosted application that supports user authentication, data storage, and retrieval, and to demonstrate it in a live or recorded demo environment.

One of the most important lessons learned during this project was the practical integration of Firebase Authentication and Cloud Firestore within a frontend-only web application. Understanding how authentication state persists across pages and how Firestore structures data in collections and documents was essential to building a reliable workflow from login to workout tracking and history display.

The main challenge encountered was ensuring that workout data was correctly stored and retrieved from Firestore. Initially, data appeared in the application interface but was not visible in the expected location within the Firebase console. This issue was resolved by carefully reviewing the Firestore collection paths and aligning them with the actual write operations in the code. This experience emphasized the importance of consistency in database structure and careful debugging using both browser developer tools and the Firebase console.

Another key takeaway was the importance of proper deployment and testing environments. Running the application through Firebase Hosting ensured correct behavior of authentication and database operations, highlighting how cloud-based applications depend on valid web origins and hosting configurations.

If this project were to be extended in the future, potential improvements would include adding edit and delete functionality for workouts, improving the user interface design, implementing stronger Firestore security rules, and adding analytics or visual summaries such as charts. Overall, this project provided valuable hands-on experience with cloud services, debugging, and end-to-end application deployment.