Individual Report – Gym Management

By: Nicole Sparkes

Contributions:

During the final sprint, I worked primarily on the backend development and authentication logic. My main responsibilities included:

* Implemented user registration and login logic using the UserService and UserDAO classes.
* Integrated BCrypt hashing to securely store user passwords in the database.
* Created the base User class and extended it into subclasses: Admin, Trainer, and Member.
* Connected the application to a PostgresSQL database using JDBC, ensuring full communication between Java and the database.
* Developed role-based menu logic to support different workflows depending on whether the user is an Admin, Trainer, or Member.
* Built features for:
  + Admins to view all users and delete users from the system
  + Trainers to create, view, and manage their workout classes

Challenges Faced:

* Scanner skipping input: Initially, scanner.nextLine() was skipped due to a prior scanner.next() call. I resolved this by ensuring proper consumption of newline characters after each input step.
* SQL constraint errors: When trying to register a user that already existed (same username or email), the system threw SQL exceptions. I handled these by improving error messages and logic in registerUser().
* Parsing issues with date/time: I faced parsing problems when converting date and time input strings to LocalDate and LocalTime. I fixed this by validating the format and using try-catch for DateTimeParseException.
* PostgreSQL setup on macOS: JDBC connection wouldn’t initially work due to driver issues. I had to manually install the PostgreSQL driver and reload Visual Studio Code for the extension to function correctly.

Summary:

This project helped me apply and strengthen key backend skills in Java, PostgreSQL, JDBC, and authentication. I also gained a deeper understanding of object-oriented design and real-world problem solving.

While the project may not be perfect and there’s definitely room for more detail and refinement, the time constraints and issues we faced made completing challenging. That said, overcoming those obstacles turned this into a really valuable learning experience. The debugging process, coordination, and hands-on coding were critical in helping me grow a developer.