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Lab 10 Report

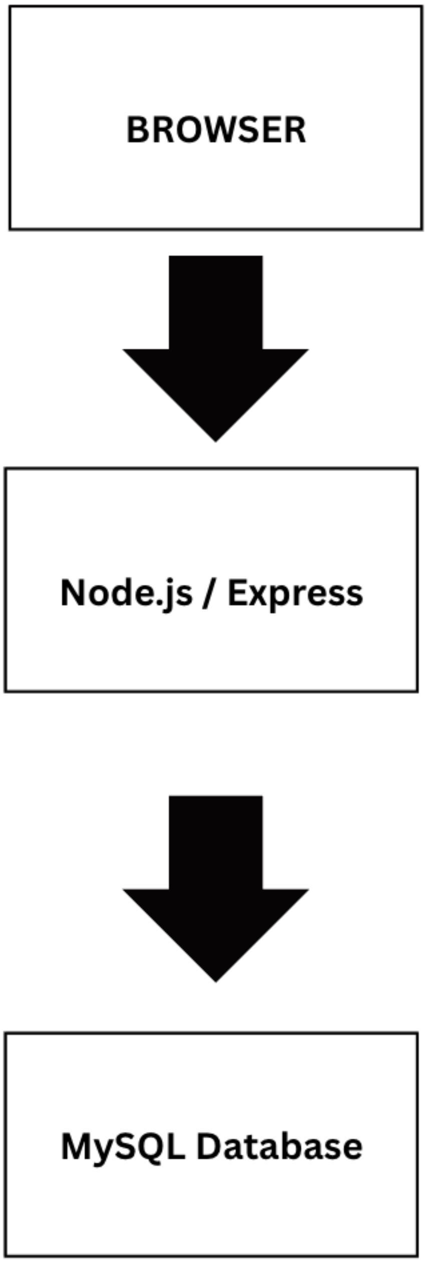
18/12/2025

Outline

FitNext is a web application that enables users to easily keep track of their fitness journey and workouts. It lets them log their workouts, look back at their workout history, and plan future training sessions. The app's main goal is to help people stay consistent with their workouts by letting them not only log what they've done, but also plan what body part they want to work on next.

Users can keep track of their workouts by inputting information such the name of the workout, the body area worked on, the length of time, and any remarks they want to add. They can also choose which body part they want to work on in their next session if they want to. The main page gives a description of the last logged workout and either the planned next workout or a simple suggestion for what to train next, based on the most recent workout.

The software has a way for users to log in so that their workout data is only available to them. As the assignment brief says, a default user account is given for testing. The software is designed to be simple and straightforward to use, with an emphasis on basic functions instead than complicated ones. Using Node.js and Express, it shows how to use server-side rendering, form handling, database integration, and session-based login in dynamic web applications.



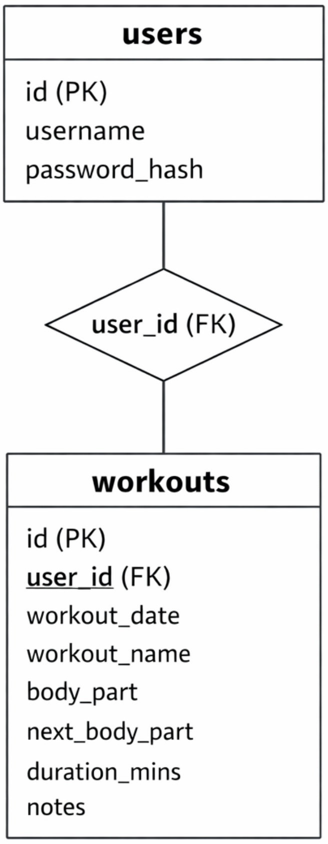
Architecture

The software has a simple client-server structure. Node.js and Express frameworks are used to build the application tier. Express is used to handle the main parts of the app, like routing between pages, processing form submissions, managing user sessions, and rendering pages on the server with EJS templates. A public folder is where styling and other static files, like CSS, are stored.

A MySQL database takes care of the data side of the app. It keeps track of user accounts and workout information. The mysql2 library lets the application connect to the database so it can run queries to add and get data.The application server and the database run on different servers.There are SQL scripts that show how to set up the database structure and add test data so that the application can be built from the ground up.

This design keeps the app simple and well-organised. When the application logic and the database are separate, it's easier to understand, manage, and use the system. The program might use well-known tools like Express, EJS, and MySQL to focus on its main features while still following standard web development practices. This structure also makes it easy to set up and run the app on the Goldsmiths server.

Data Model

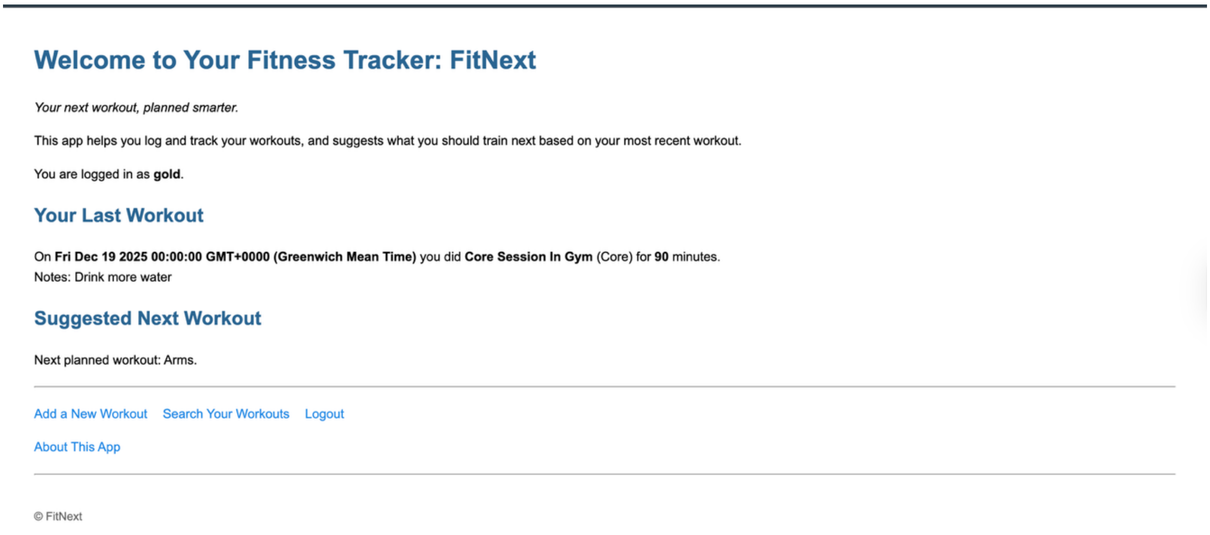


The program uses a simple relational data format with two main tables: users and exercises. The user’s database keeps track of things like a unique username and a password that is safely hashed. Each user can have more than one workout record.

The workouts table has information about each workout and is connected to the users database by a foreign key (user_id). Every workout record has the date of the workout, the name of the workout, the body part that was worked on, the intended next body part (if any), the length of the workout in minutes, and any notes that were made. This framework makes it easy to keep track of workouts that have been done and plan future ones, while keeping users and their data clearly connected.

User Functionality

The app has a lot of tools that help users keep track of their workouts. People who aren't logged in are asked to log in when they go to the home page. Users who are logged in receive a customised home page that shows their most recent workout, including the name of the session, the body area that was trained, the length of the workout, and any notes. If there is a planned body part for the next workout, the app shows it. If not, it gives a simple recommendation for what to work on next. With a test account, users can log in. Sessions are used to handle authentication, which keeps users logged in across pages. Bcrypt hashing keeps passwords safe by storing them securely. On the "Add Workout" page, users can fill out a form to record a workout they have already done. This form puts data directly into the database. Users can also choose which part of their body they want to work on next, which helps them plan their workouts. On the "Search Workouts" page, users can look through their workout history by typing in keywords. Searches look through the database for workout names, body parts, body parts that will be added in the future, and comments. The app has an "About" page that tells you what it does, and there are links to other pages that let you go between them. Screenshots of the main site, the add workout form, and the search results page show how these features work.



Welcome to Your Fitness Tracker: FitNext

Your next workout, planned smarter.

This app helps you log and track your workouts, and suggests what you should train next based on your most recent workout.

You are logged in as **gold**.

Your Last Workout

On **Fri Dec 19 2025 00:00:00 GMT+0000 (Greenwich Mean Time)** you did **Core Session In Gym** (Core) for **90** minutes.
Notes: Drink more water

Suggested Next Workout

Next planned workout: Arms.

Add a New Workout   Search Your Workouts   Logout

About This App

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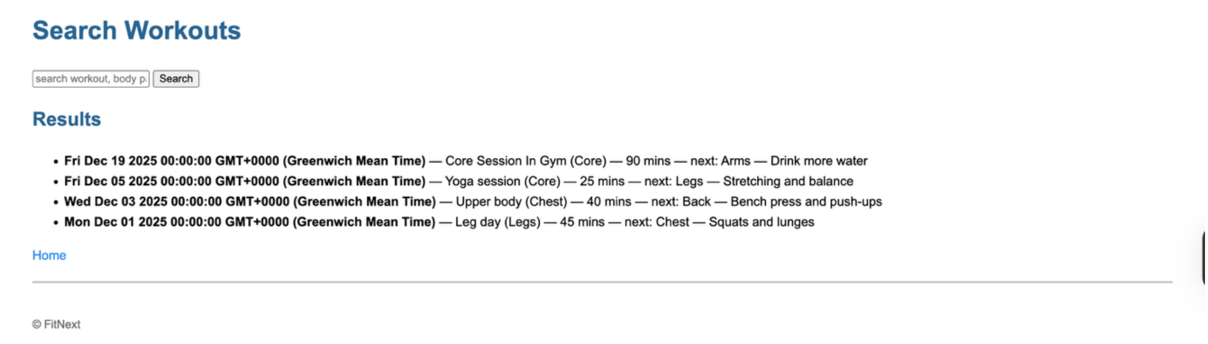

Search Workouts

Results

- **Fri Dec 19 2025 00:00:00 GMT+0000 (Greenwich Mean Time)** — Core Session In Gym (Core) — 90 mins — next: Arms — Drink more water
- **Fri Dec 05 2025 00:00:00 GMT+0000 (Greenwich Mean Time)** — Yoga session (Core) — 25 mins — next: Legs — Stretching and balance
- **Wed Dec 03 2025 00:00:00 GMT+0000 (Greenwich Mean Time)** — Upper body (Chest) — 40 mins — next: Back — Bench press and push-ups
- **Mon Dec 01 2025 00:00:00 GMT+0000 (Greenwich Mean Time)** — Leg day (Legs) — 45 mins — next: Chest — Squats and lunges

Home

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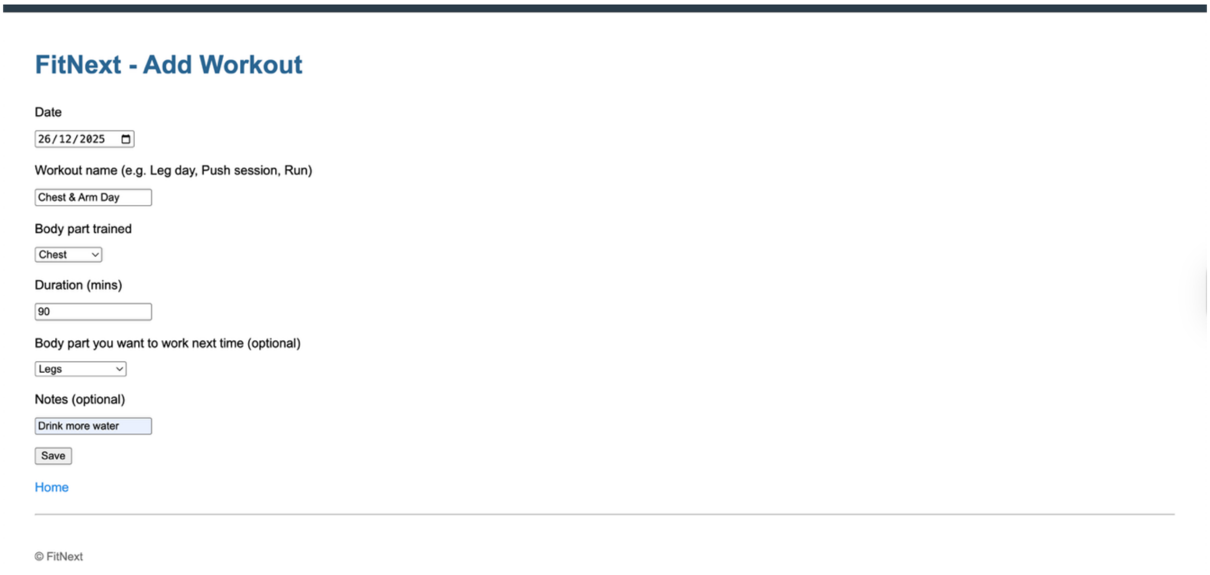

FitNext - Add Workout

Date
26/12/2025

Workout name (e.g. Leg day, Push session, Run)
Chest & Arm Day

Body part trained
Chest

Duration (mins)
90

Body part you want to work next time (optional)
Legs

Notes (optional)
Drink more water

Home

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Advanced Techniques

The program shows a number of strategies that go beyond simply creating pages. Express-session is used to set up session-based authentication, which means that only users who are logged in can access routes related to working out. Route protection middleware stops people from getting to pages where they can add or search for exercises without permission. Bcrypt makes passwords safer by hashing them before they are stored in the database. Using parameterised statements in SQL queries makes it less likely that SQL injection will happen. The program also teaches you how to think about deployment by using relative URLs throughout. This lets it work with the Goldsmiths reverse proxy environment (/usr/339/). This meant that we had to be very careful about how we connected routes and views and sent people to different pages. Under routes/users.js, routes/workouts.js, and routes/main.js, you can find code examples that are helpful.

AI Declaration

AI tools were used to help figure out what was needed for the assignment brief, to create a step-by-step plan to complete the assignment, debugging, and make the code structure better during development. I looked over, changed, and tested all of the code to make sure it met the assignment's requirements and worked correctly in the Goldsmiths deployment environment. I was in charge of the final decisions and writing the code and also of how the application would look and work.