

FitZone – Health and Fitness Club Management System

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Abstract

FitZone provides Database Management solutions for a health and fitness club. It provides Member access to everything club has to offer like **Registering to the club, Group class registration, access to private training sessions** with club's professional trainers and **view their billing**.

The system also gives Trainers a platform in a way they can best train members. Trainers can book their **availability, lookup for a member, and view their schedule**. While it gives admin access to book **rooms, manage classes and billings and payments**.

Introduction

FitZone Database Management System provides Graphical User Interface for members, trainers and admins of the club. FitZone uses Java on back-end which connect to PostgreSQL using hibernate + JDBC. The application uses Swing and flatlaf for GUI.

Problem Requirements

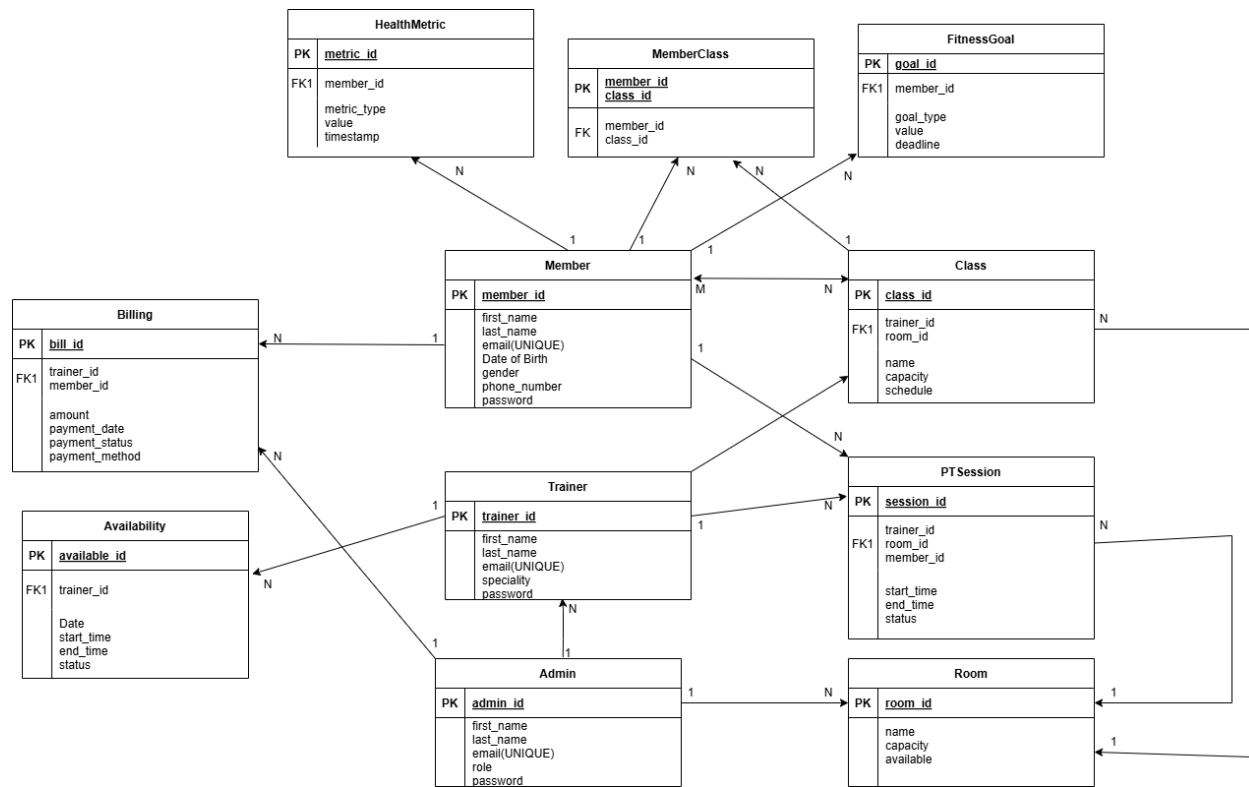
The project simulates a real-world gym management system capable of:

- Registering and managing members
- Storing time-series fitness metrics
- Handling personal training scheduling
- Managing class registrations
- Allowing trainers to set availability and view sessions
- Allowing administrators to manage resources, rooms, equipment, and billing

The system ensures:

- No overlapping bookings
- Preventing double-booking of rooms
- Enforcing trainer availability
- Respecting class capacity
- Maintaining correct role-based access
- Full referential integrity and normalization

ER Diagram



Application Functions

Members

- **User Registration & Authentication** - Secure registration and login
- **Dashboard Overview** - View latest health metrics, active goals, upcoming sessions, and registered classes
- **Health Metrics Tracking** - Log and track Weight, Heart Rate, Blood Pressure, Body Fat %, and Steps with automatic unit labels (kg, bpm, mmHg, %, steps)
- **Fitness Goals Management** - Set and track fitness goals with automatic unit labels
- **PT Session Booking** - Book personal training sessions with real-time trainer availability display. Double-click time slots to auto-fill booking form
- **Group Class Registration** - Browse and register for group fitness classes
- **Profile Management** - Update personal information

- **Billing View** - View payment history and bills

Trainers

- **Availability Management** - Set and manage availability slots
- **Member Lookup** - View member profiles and information
- **Schedule View** - View upcoming sessions and classes
- **Dashboard** - Overview of sessions, classes, and availability

Administrators

- **Room Management** - Manage gym rooms and their availability
- **Class Management** - Create and manage group fitness classes, set schedules, and track capacity
- **Billing & Payments** - Handle member billing and process payments
- **Member & Trainer Management** - Oversee all members and trainers
- **System Overview** - Comprehensive dashboard for club operations

Conclusions

We're a team of three person so we've applied a total of more than 12 functions, 11 entities and 15 relationships. The system implements all necessary features for health and fitness management clubs and applies all Database Management system to the fullest.

Link to Demo Video