Fitness Tracker

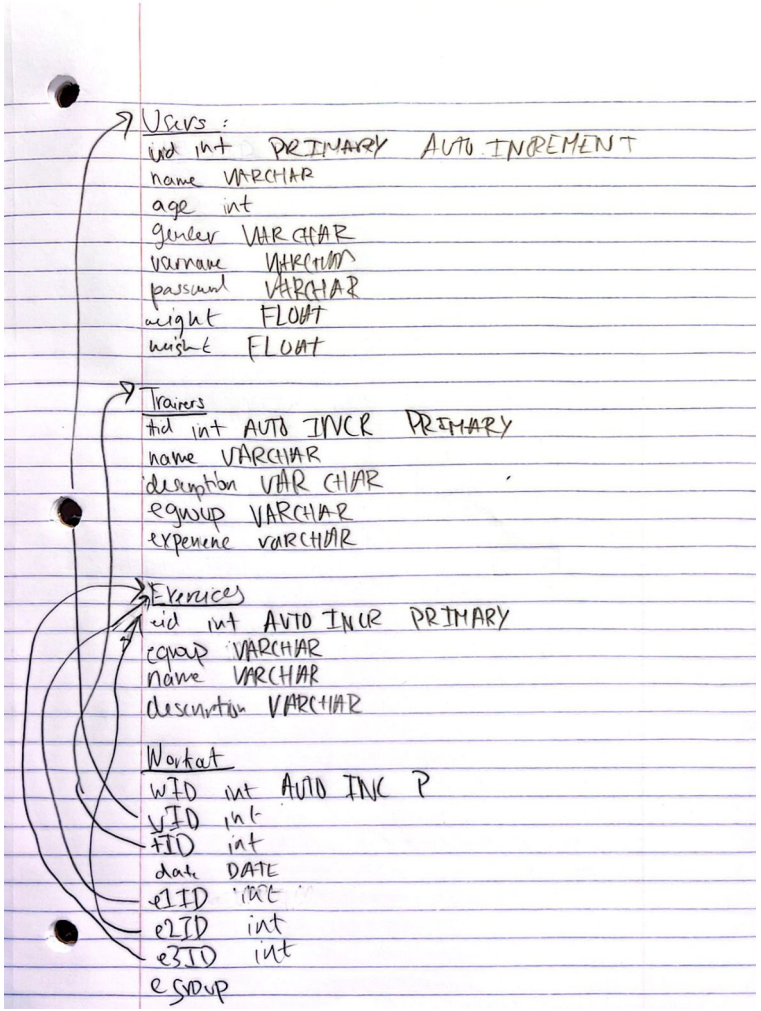
Raj Mehta and Sid Meka

Why create a Fitness Tracker? | Motivations

- health-conscious individuals
- managing our fitness routines and goals manually can be difficult
- inconsistency and lack of a structured plan < structured approach

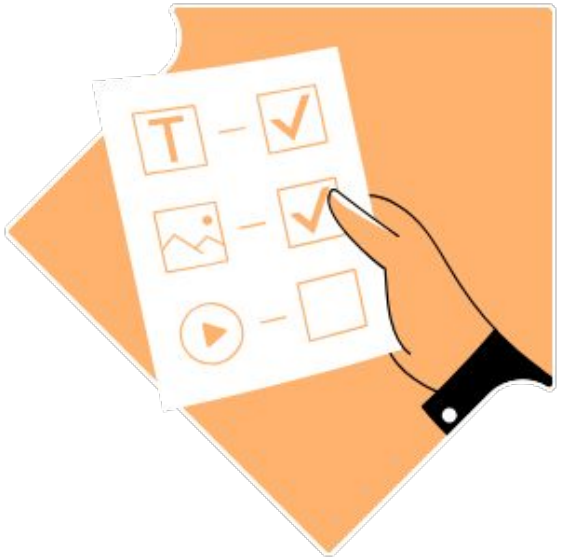
Planning and System Design | Main Tables

- Comprehensive solution that could manage exercises, users, trainers, and workouts seamlessly
- Generate personalized workout plans and track progress effectively.


Users :
uid int PRIMARY AUTO INREMENT
name VARCHAR
age int
gender VAR CHAR
varname VARCHAR
passwd VARCHAR
weight FLOAT
weight FLOAT
Trainers
tid int AUTO INCR PRIMARY
name VARCHAR
discription VAR CHAR
egroup VARCHAR
expenene varCHAR
Exercises
eid int AUTO INCR PRIMARY
eqroup VARCHAR
name VARCHAR
descriptin VARCHAR
Workat
WID int AUTO INC P
UID int
TID int
date DATE
e1ID int
e2ID int
e3ID int
eGroup

Features |

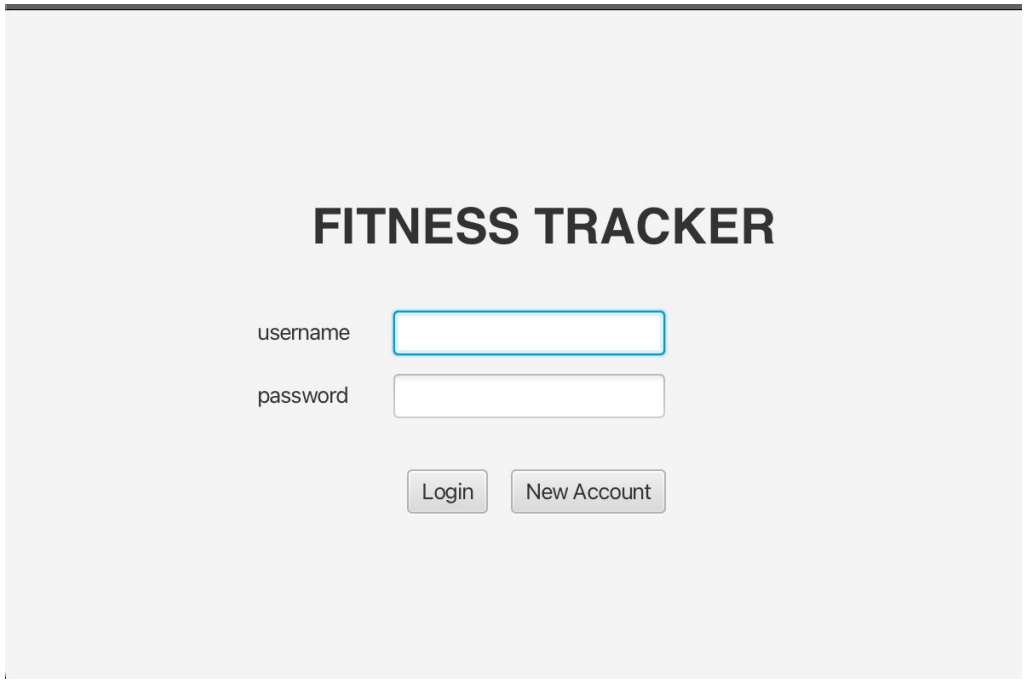
- Generate random exercise plan according to workout group
- Find trainer for appropriate workout group
- Sign in/Sign up
- Account review
- Go through all trainers by filter
- Go through all exercises by filter
- Organize workouts according to user



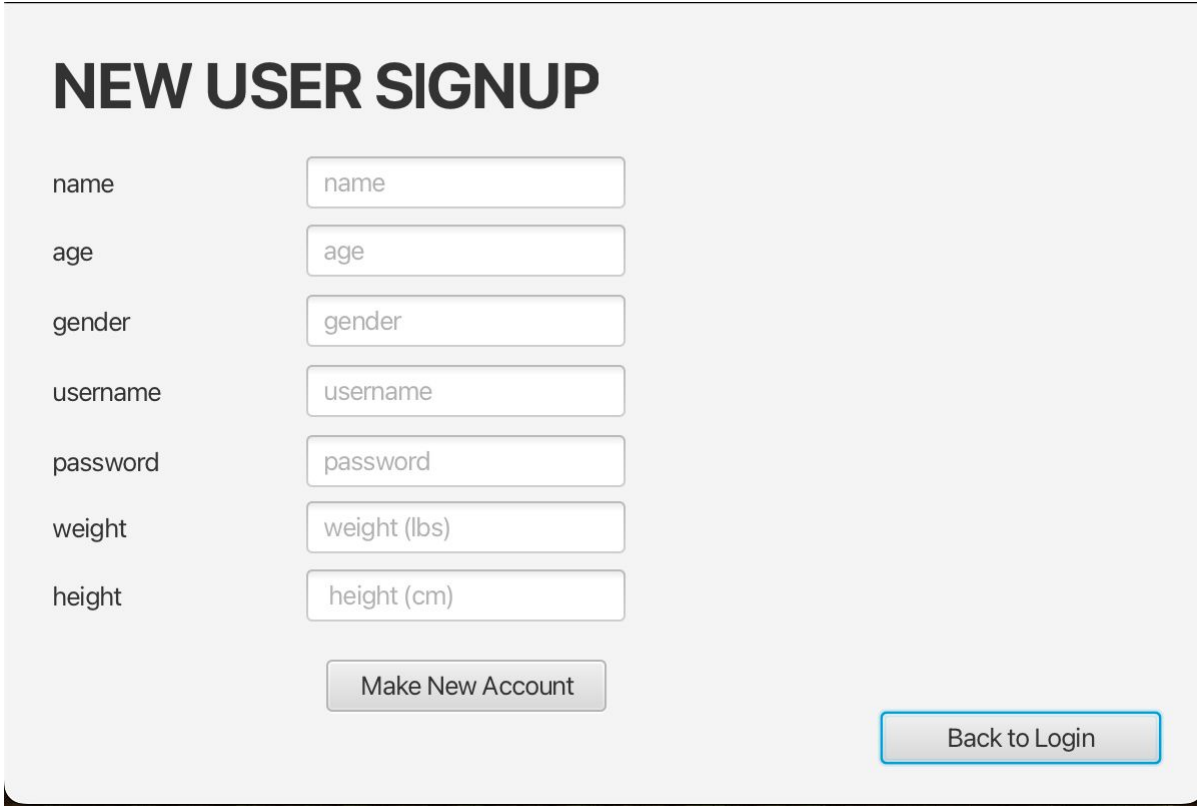
Planning and System Design

- Login
- New User
- Welcome Page
- Trainers
- Exercises
- Workouts
- Account info

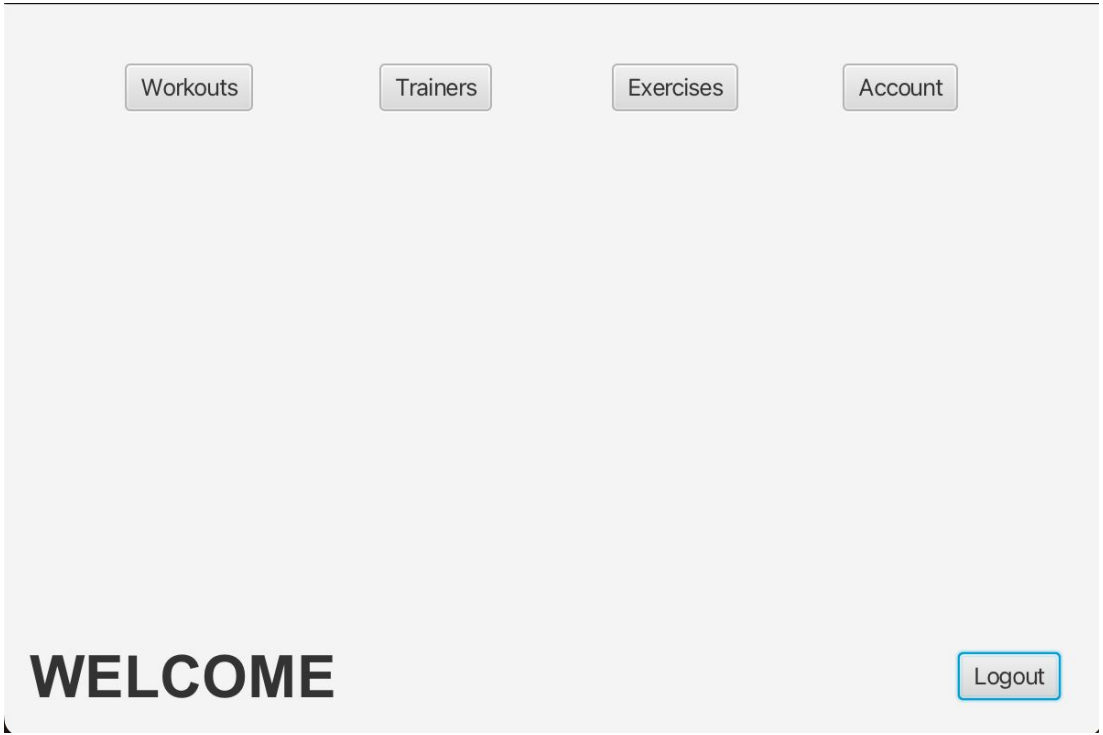
User Interface | First Page



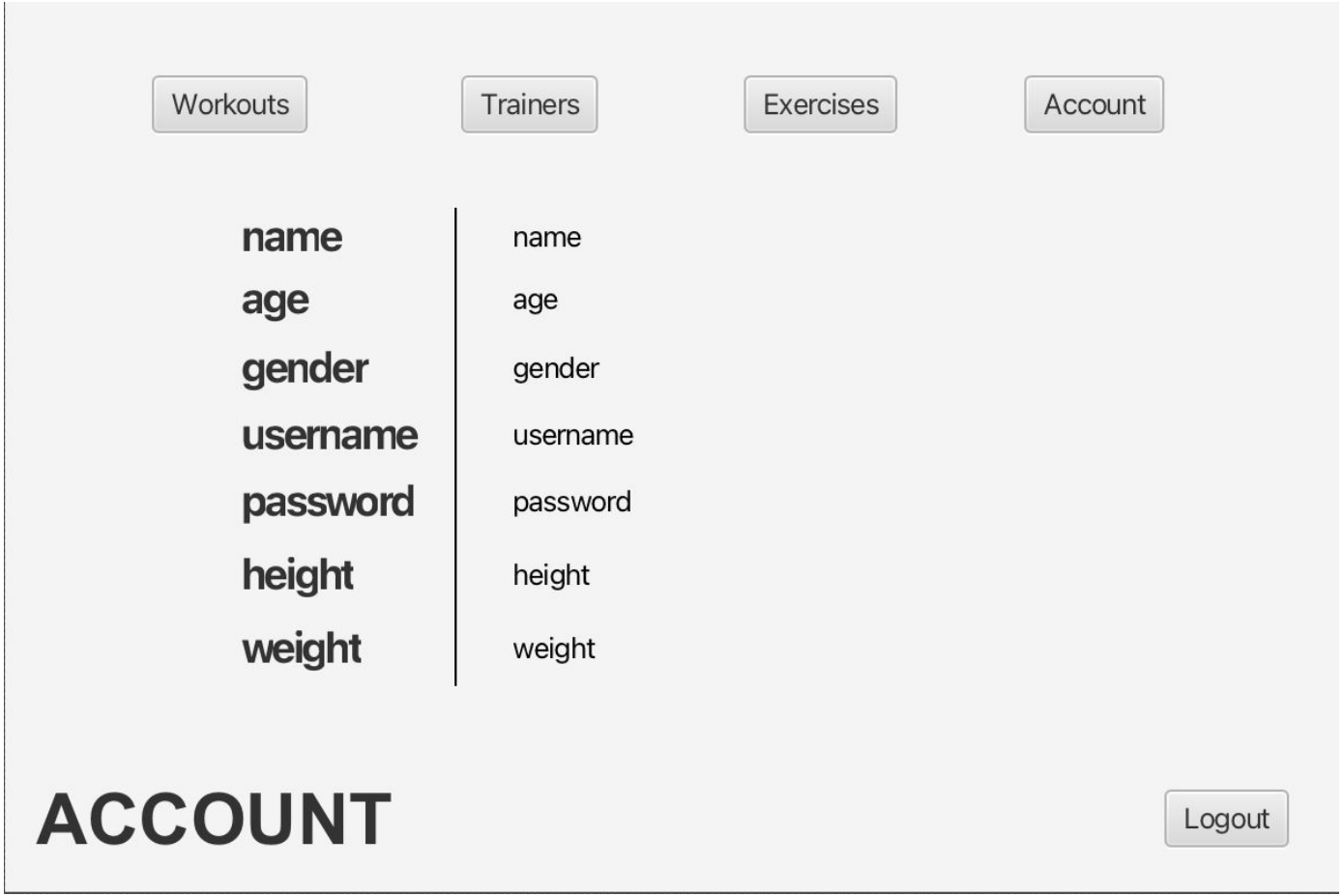
User Interface

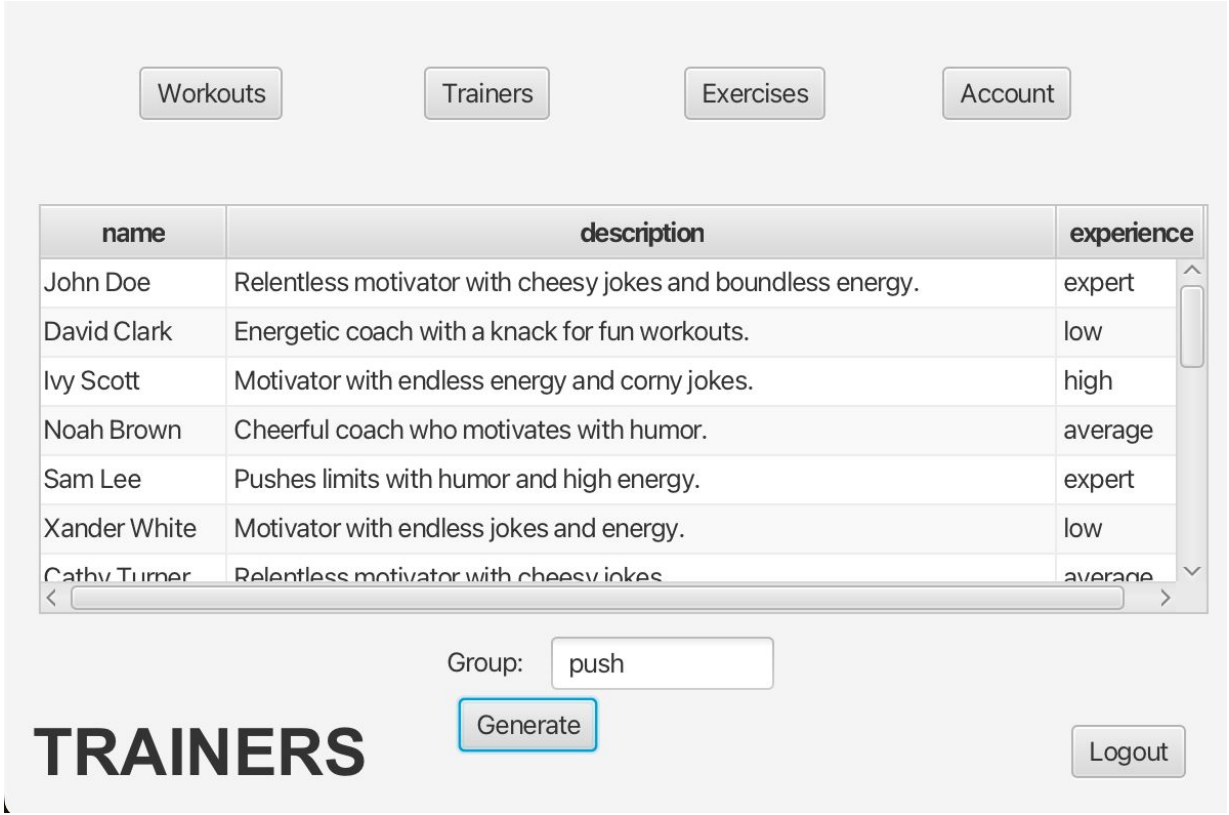


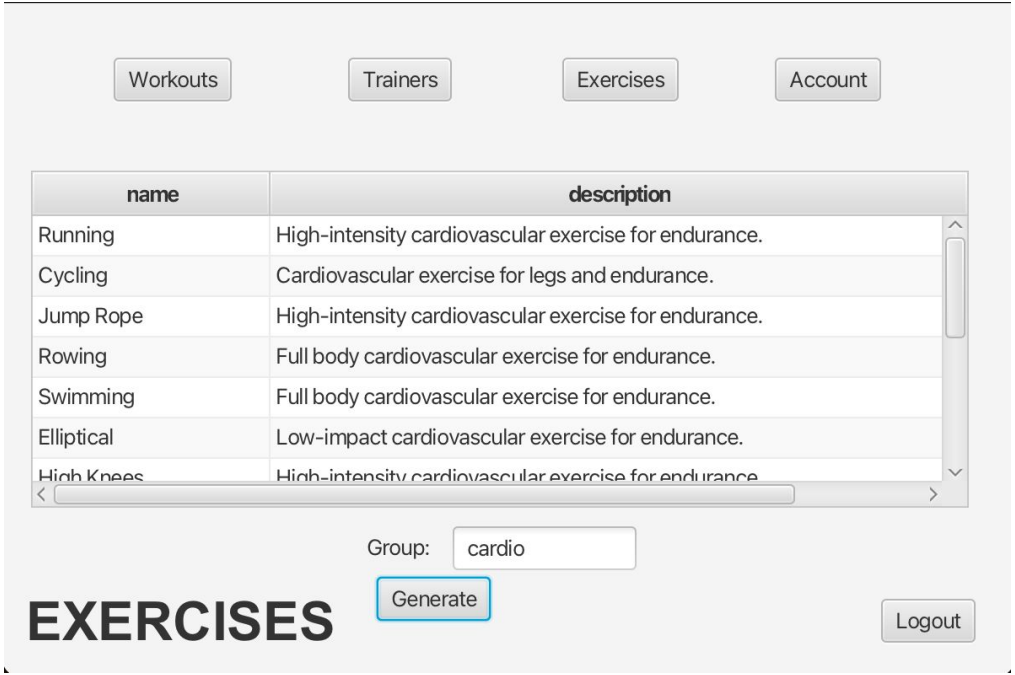
User Interface




Workouts
Trainers
Exercises
Account
Date
Group
Trainer
Ex 1
Ex 2
Ex 3
No content in table
Ex 1: Exercise 1
Ex 2: Exercise 2
Ex 3: Exercise 3
group:
group
trainer: trainer
Generate
date:
YYYY-MM-DD
Randomize
Submit workout
WORKOUTS
Logout


Workouts
Trainers
Exercises
Account
name
age
gender
username
password
height
weight
name
age
gender
username
password
height
weight
ACCOUNT
Logout


Workouts
Trainers
Exercises
Account
name
description
experience
John Doe
Relentless motivator with cheesy jokes and boundless energy.
expert
David Clark
Energetic coach with a knack for fun workouts.
low
Ivy Scott
Motivator with endless energy and corny jokes.
high
Noah Brown
Cheerful coach who motivates with humor.
average
Sam Lee
Pushes limits with humor and high energy.
expert
Xander White
Motivator with endless jokes and energy.
low
Group:
push
Generate
TRAINERS
Logout


Workouts
Trainers
Exercises
Account
name
description
Running
High-intensity cardiovascular exercise for endurance.
Cycling
Cardiovascular exercise for legs and endurance.
Jump Rope
High-intensity cardiovascular exercise for endurance.
Rowing
Full body cardiovascular exercise for endurance.
Swimming
Full body cardiovascular exercise for endurance.
Elliptical
Low-impact cardiovascular exercise for endurance.
High Knees
High-intensity cardiovascular exercise for endurance
Group:
cardio
Generate
EXERCISES
Logout

Technologies Used |

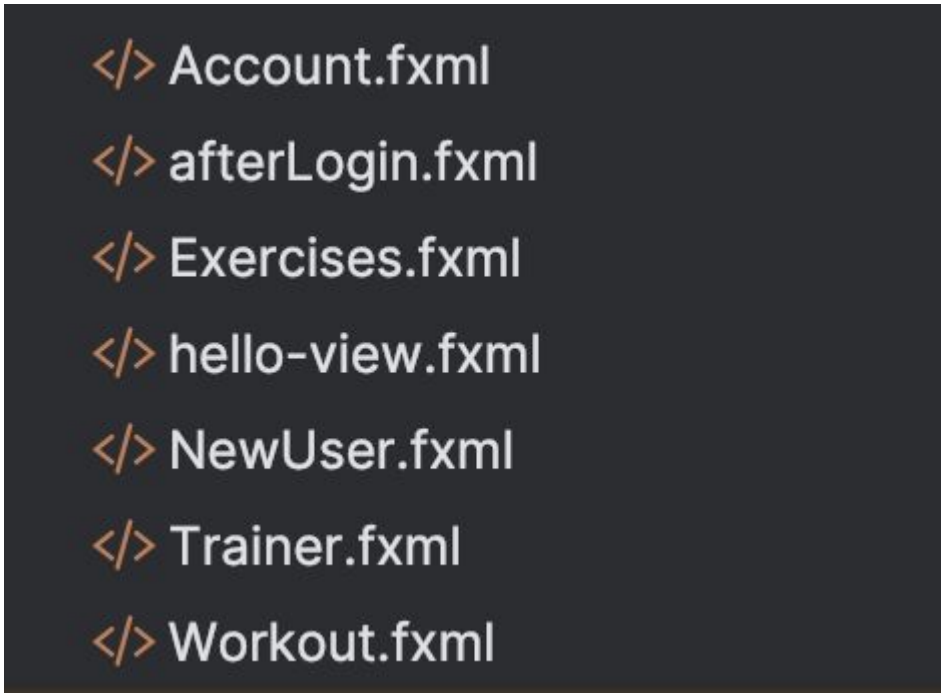
- Programming Language: Java
- GUI Framework: JavaFX
- Database: MySQL
- Build Tool: Maven

Implementation Details SQL-Connecting to MySQL |

```
public void connect() {  11 usages

    //String jdbcConnectorUrl = "jdbc:mysql://ambari-node5.csc.calpoly.edu:3306

    try {
        String url = "jdbc:mysql://localhost:3306/new_schema";
        Class.forName( className: "com.mysql.cj.jdbc.Driver");
        DriverManager.setLoginTimeout(5);
        connection = DriverManager.getConnection(url, username, password);

    } catch (SQLException e) {
        e.printStackTrace();
    } catch (ClassNotFoundException e) {
        throw new RuntimeException(e);
    }
}

public void close() {  7 usages
    try {
        if (connection != null && !connection.isClosed()) {
            connection.close();
        }
    } catch (SQLException e) {
        e.printStackTrace();
    }
}
```

```
public void generateExercises(ActionEvent event) throws IOException {  1 usage
    databaseConnector.connect();
    List<Map<String, Object>> exerciseRows = databaseConnector
            .runParametrizedQuery( query: "SELECT * FROM Exercises WHERE egroup = ?", groupBox.getText());

    Random random = new Random();

    // Shuffle the list and pick the first three unique exercises
    int exerciseCount = Math.min(3, exerciseRows.size());
    for (int i = 0; i < exerciseCount; i++) {
        int randomExerciseIndex = random.nextInt(exerciseRows.size());
        Map<String, Object> randomExercise = exerciseRows.remove(randomExerciseIndex); // Remove to avoid duplicates

        // Get the exercise's name and ID
        String exerciseName = (String) randomExercise.get("name");
        String exerciseID = String.valueOf(randomExercise.get("eID"));

        // Set the exercise's name and ID in the appropriate box
        if (i == 0) {
            exercise1Text.setText("Name: " + exerciseName);
            IDexercise1 = exerciseID;
        } else if (i == 1) {
            exercise2Text.setText("Name: " + exerciseName);
            IDexercise2 = exerciseID;
        } else if (i == 2) {
            exercise3Text.setText("Name: " + exerciseName);
            IDexercise3 = exerciseID;
        }
```

Implementing JavaFX



Demo

What did we learn?

- Built a good foundational app for tracking fitness goals
- Good login based system and username/password implementation
- Foundational SQL queries that can be repeated throughout the app for added functionality
    - Food / Protein intake
- Good experience with SQL application with free will
- GUI integration practice
- Server connection practice

Major Difficulties

- Wanted to spend longer to make a more fine tuned product
  - Progress report
- Felt somewhat limited in JavaFX since had never learned it
  - Watched youtube videos
- More project description
  - More specific instructions

Improvements

- Can develop the app with more aspects using the same logic
- Have more personalized options
- Admin mode to add exercises / add trainers

Thank you

Questions?