Content

1 System Design CRC cards

Class Name: ExerciseLog	
Responsibilities: ● Display all of a user’s previously recorded sets in a scrollable list. ● Present options allowing users to add, update, or delete recorded sets.	**Collaborators:** ● ExerciseRecorder ● ExerciseGroupSelect

Class Name: ExerciseGroupSelect	
Responsibilities: ● Provide users the option to search for exercises by clicking on a muscle group, or querying via a search bar.	**Collaborators:** ● ExerciseLog ● ExerciseSelect

Class Name: ExerciseSelect	
Responsibilities: ● Display list of all found exercises given query from previous page (ExerciseGroupSelect) ● Allow users to select any displayed exercises, moving them to a screen where they can log the exercise.	**Collaborators:** ● ExerciseGroupSelect ● ExerciseRecorder

Class Name: ExerciseRecorder	
Responsibilities: ● Display exercise in terms of Weight & Reps or Time & Distance depending on exercise type ● Allow user to modify exercise metrics ● Allow users to log exercise, saving the exercise metrics in their history	**Collaborators:** ● ExerciseLog ● ExerciseSelect

Class Name: Survey	
Responsibilities: ● Display survey questions and answer options ● Upon click, directs user to next question or the result page ● Store user's survey results and send it to backend	**Collaborators:** ● Plan

Class Name: Plan	
Responsibilities: ● Match user's survey results with a plan ● send the plan to frontend	**Collaborators:** ● Survey

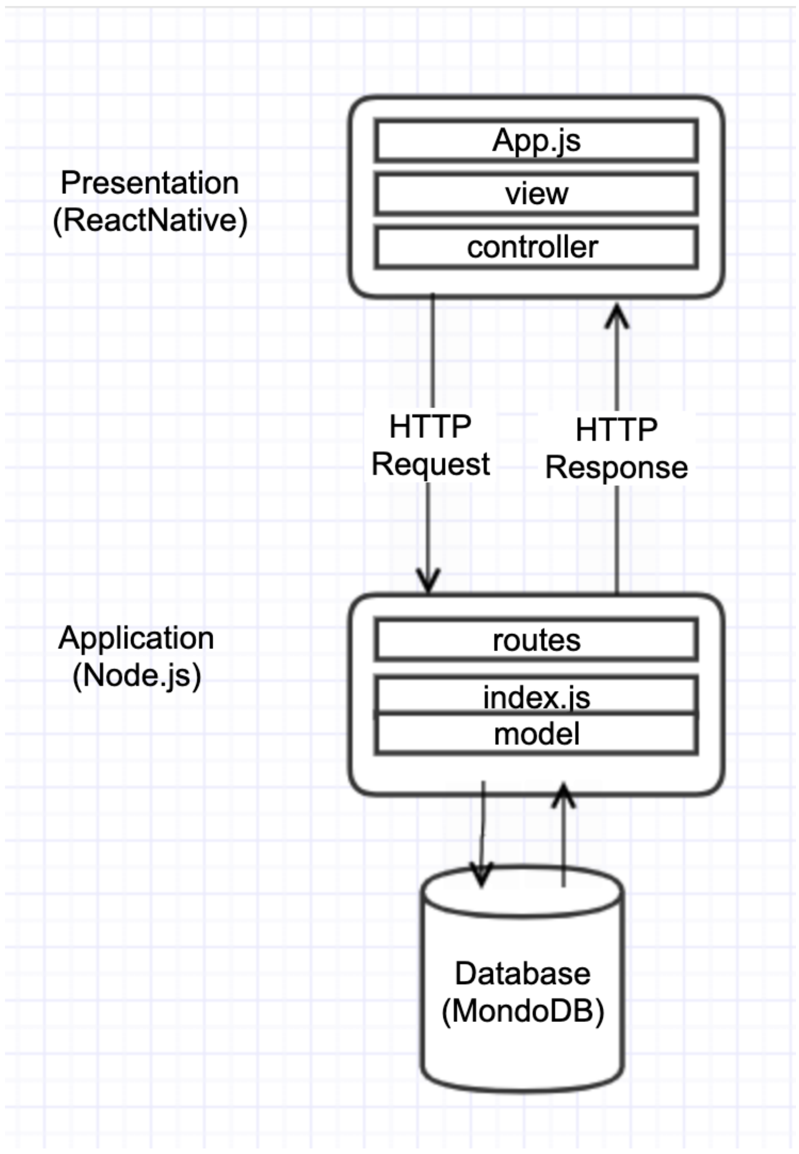
Class Name: LoginComponents	
Parent Class (if any): LoginComponents **Subclasses (if any): Login, Register**	
Responsibilities: **Login:** ● Interact with the database to authenticate the users' login information (Email address, password) ● Redirect the Users to the register page if they do not have an account ● Redirect the users to the information dashboard (Main page) **Register** ● Handle users' identity information's format ● Interact with the database to upload the users' registration information ● Redirect the Users to the login page if they already have an account ● Redirect the users to survey page	**Collaborators:** ● Survey ● MainPage

Class Name: MainPage	
Responsibilities: ● Display information of the plans, progress, goals ● Allow users to track new metrics	**Collaborators:** ● Survey ● Login

Class Name: ProfileScreen	
Responsibilities: ● Fetch the current user's information using a GET request ● Display current user's information ● Allow users to navigate to edit their profile	**Collaborators:** ● EditProfileScreen

Class Name: EditProfileScreen	
Responsibilities: ● Allow user to edit their profile ● Handle the updated user information back to the database with a PUT request ● Allow user to go back to the profile and not save his changes	**Collaborators:** ● ProfileScreen

2. System Architecture diagram (Three tiers-MERN Stack)
Reference: https://www.mongodb.com/mern-stack
2.1 Diagram



2.2 Explanation

- the front-end display tier (React Native), application tier (Express.js & Node.js), and database tier (MongoDB Atlas).

- React Native: build up interfaces through components, connect them to data on backend server, and render them as HTML.
- Express.js: has models for URL routing (matching an incoming URL with a server function), and handles HTTP requests & responses.
- MongoDB Altas: data storage

- Interactions among the tiers: Making HTTP Requests or GETs or POSTs from React.js, we can connect to Express.js functions, which in turn use MongoDB's Node.js drivers, either via callbacks for using Promises, to access and update data in your MongoDB database.

2.3.System Decomposition/Project Structure

Backend:

- models: directory that contains the data structure to model objects from response e.g. Users.js, Exercise.js
- routes: directory that contains files that define server endpoints e.g. users.js, Exercise.js
- config.js: config file that holds the credentials to connect to the MongoDB Atlas database
- index.js: entry point of backend server
- package.json: dependencies:

```
"dependencies": {
   "body-parser": "^1.20.0",
   "cors": "^2.8.5",
   "express": "^4.18.1",
   "mongoose": "^5.13.14",
   "morgan": "^1.10.0"
 }
```

Frontend:

- view: directory that contains all js files of the main screens of the mobile app
- App.js: entry point of the react native frontend (contains tab bar navigation)
- pakage.json: dependencies

```
"dependencies": {
   "@react-navigation/native": "^6.0.10",
   "@react-navigation/native-stack": "^6.6.2",
   "expo": "~45.0.0",
   "expo-splash-screen": "~0.15.1",
   "expo-status-bar": "~1.3.0",
   "react": "17.0.2",
   "react-dom": "17.0.2",
   "react-native": "0.68.2",
   "react-native-web": "0.17.7"
 }
```