

# **Product Backlog - getFit**

**Repository: <https://github.com/guttamc7/CS-490>**

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## **1. Problem Statement**

There has been an escalating trend on fitness and health in recent years. However, it has become extremely difficult to find the time and the motivation to workout regularly. Today, even with numerous fitness apps present, a mobile platform that allows us to connect with fellow fitness enthusiasts in a secure manner does not exist. Students and faculty around various campuses often find it difficult to search for that workout partner. Hence, with the introduction of our application, we aim to bridge this gap.

## **2. Background Information**

The inspiration for this application has been derived from our daily routines, in which it is very difficult to find the motivation and the time to work out. Our application focuses on providing a platform through which users can create personalized workout schedules around their daily routines. Users can also find and connect with other nearby users with similar time schedules. Our app not only aims to connect and motivate fitness enthusiasts but also aims in creating a healthier lifestyle at colleges.

Our application will be exclusively targeted towards students and faculty members around universities in America. Any user, using a cell phone device equipped with Android – 5.0 Lollipop will be able to access our application.

As mentioned before that there has been an increasing trend towards living a healthier and fitter life, leading to an array of applications on the Android market. For example: myFitnessPal, Fitocracy, RunKeeper and BodySpace are few of the available applications on both Android and iOS. However, there exist various limitations with these applications such as broadness, security, reliability, convenience and delayed response time. Our application explores a gap in the market, and aims to connect nearby users available to workout at similar times. We will be providing a smart and useful platform that will help in creating fitness communities around the country. Our difference lies in providing exclusiveness and value to the student body.

### 3. Environment and System Models

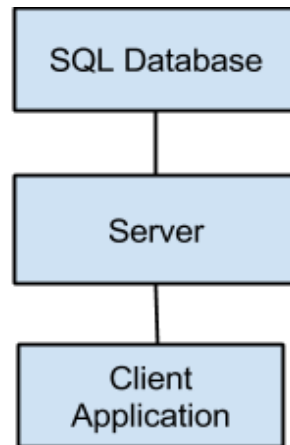


Diagram I: System model for the software. The client application communicates with a server that in turn write and read needed data from a database. The client application will use Android 5.0 Lollipop and the server will be written using Java and SQL.

- Our system model consists of three subsystems, the SQL database, the server and the client.
- The database stores all the information required:
  1. All information related to user accounts i.e. name, password, the profile picture, birthday, personal workout schedules, time availability, favorite exercises, location of recent workout and the last time the user had been active.
  2. Base list of exercises based on physical ability (Novice, Intermediate and Expert).
  3. Chat messages between the users.
- The server interacts with the database. The information is sent through the server which looks up the database and then returns an entry.
- The client applications send requests to the server to find relevant information pertaining to workouts, fitness partners, etc. The server queries the database and returns the respective entry from the database.

### 4. Functional Requirements

#### 4.1 Client-Server Interaction

- The **client application will request** data from the server.
- The **server will send the** requested data back to the client application.
- The **client application will send information** to the server in order to store it.

#### 4.2 Server-Database interaction

- The **server will store the data** sent by the client in a SQL Database.

- The **server will retrieve data** from the SQL Database and sent it to the client.

#### **4.3 User-Client Interaction**

- The user can create an account by entering his name, birthdate, profile picture, password and email (.edu is required) and later edit his/hers user profile.
- Provided that the user has created an account he/she can login by entering username and password.
- After logging in the user can perform the following actions:
  - Enter time schedules as to when they are free to workout
  - Create personal workout exercises
  - Choose the difficulty level of the workout plan that fits them best
- Provided that the user has created an account he/she can search for people nearby who are going to workout during the times that he/she has entered. They can also browse through user workout plans and then connect with them to set up workout meetings.

### **5. Non-functional Requirements**

- **Usability**
  - The usability is very important on the application side since non-technical users will use the app. There should never be any hesitation of how to use the app. Everything including advanced features such as geo-location should be easily accessible.
- **Reliability**
  - A system crash on the server side should never result in lost data. This is especially important since the entire software is built upon the availability of that data. The client application should also be very stable to be user friendly.
- **Scalability**
  - The system should be easily scalable since the number of users can change quickly. A system crash due to an increased number of users is not acceptable.
- **Security**
  - All communication between the client application and the server needs to be encrypted. Even though most information sent between the application and the server will be public data, an acceptable cryptographic protocol has to be implemented to protect user data.
- **Performance**
  - We will ensure that our application has a quick response time in order to enhance the usability of our app.
- **Quality**
  - Utmost importance must be given to the quality of our application by checking for critical bugs/errors and test it properly so that the users don't have to face any problems.

- **Extensibility**

- We will be designing the code such that it can easily allow us to incorporate additional features into our app and server.

## 6. User cases

*a. Must Be Done:*

<u><b>User Actions</b></u> <i>As a user, one would want to:</i>	<u><b>System Responses</b></u>
<b>1. Create a new account.</b>	
<ul style="list-style-type: none"> <li>● Tap the 'Register' button.</li> </ul>	<ul style="list-style-type: none"> <li>● Registration activity begins and information window shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● Enter name, username, .edu email address and password. Next Step.</li> </ul>	<ul style="list-style-type: none"> <li>● Check username availability and create new profile if available, else prompt for a new entry.</li> </ul>
<ul style="list-style-type: none"> <li>● Choose picture on phone.</li> </ul>	<ul style="list-style-type: none"> <li>● Prompt to upload photo in separate UI.</li> </ul>
<ul style="list-style-type: none"> <li>● Confirm registration.</li> </ul>	<ul style="list-style-type: none"> <li>● Pop up registration result and return to main UI with user logged in.</li> </ul>
<b>2. Log in to my account.</b>	
<ul style="list-style-type: none"> <li>● Tap the app logo on the device to run the app</li> </ul>	<ul style="list-style-type: none"> <li>● Welcome screen shows up, followed by the login UI.</li> </ul>
<ul style="list-style-type: none"> <li>● Enter username or email address and password. Tap login.</li> </ul>	<ul style="list-style-type: none"> <li>● Confirm login details and log into account if information is correct, else show failure message and return to login screen so that the user can log in again.</li> </ul>
<b>3. Edit profile</b>	
<ul style="list-style-type: none"> <li>● Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>● Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap on settings button</li> </ul>	<ul style="list-style-type: none"> <li>● Show setting UI.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap edit account button</li> </ul>	<ul style="list-style-type: none"> <li>● Show account details and fields that are open for editing.</li> </ul>
<ul style="list-style-type: none"> <li>● Change the respective account</li> </ul>	<ul style="list-style-type: none"> <li>● Store the changes</li> </ul>

information	
<ul style="list-style-type: none"> <li>Verify the changes by entering the password once again</li> </ul>	<ul style="list-style-type: none"> <li>If password matches, then display confirmation and return to settings UI.</li> </ul>
<b>4. View tutorial on how to use the app.</b>	
<ul style="list-style-type: none"> <li>Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>Tap settings button.</li> </ul>	<ul style="list-style-type: none"> <li>Settings UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>Tap help.</li> </ul>	<ul style="list-style-type: none"> <li>Start five step tutorial in a separate UI.</li> </ul>
<ul style="list-style-type: none"> <li>Tap next or back until end of tutorial is reached.</li> </ul>	<ul style="list-style-type: none"> <li>Change instructions according to the buttons pressed.</li> </ul>
<ul style="list-style-type: none"> <li>Tap on stop tutorial.</li> </ul>	<ul style="list-style-type: none"> <li>Close tutorial and return to settings UI.</li> </ul>
<b>5. Create personal time availability schedule.</b>	
<ul style="list-style-type: none"> <li>Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>Welcome UI shows up which contains login screen.</li> </ul>
<ul style="list-style-type: none"> <li>Login into the app by entering password and username or email address</li> </ul>	<ul style="list-style-type: none"> <li>Check for credentials: if correct then, successfully display Main UI page else, ask user to enter credentials again.</li> </ul>
<ul style="list-style-type: none"> <li>Click on 'Create Schedule' button.</li> </ul>	<ul style="list-style-type: none"> <li>A weekly calendar shows up.</li> </ul>
<ul style="list-style-type: none"> <li>Tap on any day in the calendar and add the time that the user is free to work out at.</li> </ul>	<ul style="list-style-type: none"> <li>Save the respective times for that week in the database.</li> </ul>
<b>6. View basic workout plans.</b>	
<ul style="list-style-type: none"> <li>Tap the app logo on the device and run the app.</li> </ul>	<ul style="list-style-type: none"> <li>Display the Main UI.</li> </ul>
<ul style="list-style-type: none"> <li>Tap on 'Select Workout Plan' button.</li> </ul>	<ul style="list-style-type: none"> <li>Display proficiency level (Basic, Intermediate and Expert).</li> </ul>
<ul style="list-style-type: none"> <li>Choose the proficiency level, which matched the user.</li> </ul>	<ul style="list-style-type: none"> <li>For that respective proficiency level display the workout plans.</li> </ul>
<ul style="list-style-type: none"> <li>Choose the workout plan that fits the user</li> </ul>	<ul style="list-style-type: none"> <li>Add the workout plan to the user's</li> </ul>

best.	workout plan list and take the user back to the Main UI.
<b>7. Create personal customized workout plans.</b>	
<ul style="list-style-type: none"> <li>Tap the app logo on the device and run the app.</li> </ul>	<ul style="list-style-type: none"> <li>Display the Main UI.</li> </ul>
<ul style="list-style-type: none"> <li>Tap on 'Create Personalized Workout Plan' button.</li> </ul>	<ul style="list-style-type: none"> <li>Display the UI for this action.</li> </ul>
<ul style="list-style-type: none"> <li>Tap on the plus button at the top right corner.</li> </ul>	<ul style="list-style-type: none"> <li>Display the UI for this action. The UI will contain three textboxes (First for entering the exercise name, second for the time, third for Number of times performed, fourth for weight) and a done button.</li> </ul>
<ul style="list-style-type: none"> <li>Enter the exercise name, number of times performed, weight and time duration. Tap on done button.</li> </ul>	<ul style="list-style-type: none"> <li>Save the exercise details by sending the information to the server, which will in turn send it to the database.</li> </ul>
<ul style="list-style-type: none"> <li>Repeat until all of the exercises have been added and then Tap on the Save button on the top left corner.</li> </ul>	<ul style="list-style-type: none"> <li>Take user back to the Main UI.</li> </ul>
<b>8. Find fitness partner</b>	
<ul style="list-style-type: none"> <li>Tap "Find Fitness Buddy"</li> </ul>	<ul style="list-style-type: none"> <li>UI showing the option for finding the buddy</li> </ul>
<ul style="list-style-type: none"> <li>Provide preferences such as time/gym location etc.</li> </ul>	<ul style="list-style-type: none"> <li>Providing input boxes for preferences</li> </ul>
<ul style="list-style-type: none"> <li>Load personal preferences from your own profile</li> </ul>	<ul style="list-style-type: none"> <li>Send the request back to server</li> </ul>
<ul style="list-style-type: none"> <li>Browse the list of users matching your preferences</li> </ul>	<ul style="list-style-type: none"> <li>Receive and display the response from the server</li> </ul>
<ul style="list-style-type: none"> <li>Select a user of your choice and view his/her information</li> </ul>	<ul style="list-style-type: none"> <li>Send the request to server to load more details about the selected</li> </ul>
<ul style="list-style-type: none"> <li>Ability to contact your selected user through the chatting functionality</li> </ul>	<ul style="list-style-type: none"> <li>App receives the user data from the server and displays it</li> </ul>

<b>9. Chat with another fitness buddy</b>	
<ul style="list-style-type: none"> <li>After viewing a user profile from “Find Fitness Buddy”, select “Chat”</li> </ul>	<ul style="list-style-type: none"> <li>App sends a chatting request back to the server</li> </ul>
<ul style="list-style-type: none"> <li>View any previous chatting history with this user</li> </ul>	<ul style="list-style-type: none"> <li>Server loads the chatting history if necessary</li> </ul>
<ul style="list-style-type: none"> <li>See if the user is online/offline</li> </ul>	<ul style="list-style-type: none"> <li>Server checks if the other user is online/offline and responds back</li> </ul>
<ul style="list-style-type: none"> <li>Send a message to this user and receive any response back</li> </ul>	<ul style="list-style-type: none"> <li>Server acts as an intermediary for chatting</li> </ul>
<b>10. Rate workout plans</b>	
<ul style="list-style-type: none"> <li>Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>Tap the ‘Rate’ button.</li> </ul>	<ul style="list-style-type: none"> <li>A new windows shows up which contains the custom workout plans, basic workout plans and workout plans which have been done with other people.</li> </ul>
<ul style="list-style-type: none"> <li>Tap on the workout plans.</li> </ul>	<ul style="list-style-type: none"> <li>A new UI shows up which contains stars</li> </ul>
<ul style="list-style-type: none"> <li>Choose the appropriate ratings and tap on the ‘save’ button.</li> </ul>	<ul style="list-style-type: none"> <li>Save the ratings for the workout plans.</li> </ul>
<b>11. View Trending workouts</b>	
<ul style="list-style-type: none"> <li>Tap the app logo to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>Swipe to see the ‘Timeline’</li> </ul>	<ul style="list-style-type: none"> <li>‘Timeline’ shows up of most highly rated workouts</li> </ul>
<ul style="list-style-type: none"> <li>Tap on a workout</li> </ul>	<ul style="list-style-type: none"> <li>View details of the workout</li> </ul>
<ul style="list-style-type: none"> <li>Tap ‘Add to Schedule’</li> </ul>	<ul style="list-style-type: none"> <li>Redirects user to add to personal schedule</li> </ul>



b. Will Be Done If Time Allows:

<b><u>User Actions</u></b> <i>As a user, one would want to:</i>	<b><u>System Responses</u></b>
<b>11.Be push notified for motivational quotes</b>	
<ul style="list-style-type: none"> <li>● Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>● Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap settings button.</li> </ul>	<ul style="list-style-type: none"> <li>● Settings UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap Boolean for push notifications when app hasn't been opened for a while.</li> </ul>	<ul style="list-style-type: none"> <li>● Save preferences to database.</li> </ul>
<b>12. Add Friends to network</b>	
<ul style="list-style-type: none"> <li>● Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>● Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap "Find Fitness Buddy".</li> </ul>	<ul style="list-style-type: none"> <li>● UI showing the option for finding the buddy.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap on plus button next to the name of the people in the list.</li> </ul>	<ul style="list-style-type: none"> <li>● Add that particular person to the user's friend's list.</li> </ul>
<b>13. Challenge Friends</b>	
<ul style="list-style-type: none"> <li>● Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>● Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap on friends button.</li> </ul>	<ul style="list-style-type: none"> <li>● Show UI, which contains the friend list.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap the friend's name.</li> </ul>	<ul style="list-style-type: none"> <li>● Shows friends details.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap Challenge button on the top right corner.</li> </ul>	<ul style="list-style-type: none"> <li>● Show UI that contains a text box and send button.</li> </ul>
<ul style="list-style-type: none"> <li>● Enter challenge. Tap send.</li> </ul>	<ul style="list-style-type: none"> <li>● Send notification to the friend about the challenge.</li> </ul>

<b>14. Track your workout</b>	
<ul style="list-style-type: none"> <li>● Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>● Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● View today's workout</li> </ul>	<ul style="list-style-type: none"> <li>● Load the workout for today</li> </ul>
<ul style="list-style-type: none"> <li>● See the progress made since last time with the number of sets/repetitions performed</li> </ul>	<ul style="list-style-type: none"> <li>● Display the workout details</li> </ul>
<ul style="list-style-type: none"> <li>● Update this progress with today's routine</li> </ul>	<ul style="list-style-type: none"> <li>● Store the new workout progress</li> </ul>
<b>15. Personal Profile</b>	
<ul style="list-style-type: none"> <li>● Tap the app logo on the device to run the app.</li> </ul>	<ul style="list-style-type: none"> <li>● Main page UI shows up.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap on settings button</li> </ul>	<ul style="list-style-type: none"> <li>● Show setting UI.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap edit account button</li> </ul>	<ul style="list-style-type: none"> <li>● Show account details and fields that are open for editing.</li> </ul>
<ul style="list-style-type: none"> <li>● Tap 'Calculate BMI'</li> </ul>	<ul style="list-style-type: none"> <li>● Calculate and display the Body Mass Index of the User</li> </ul>
<ul style="list-style-type: none"> <li>● Tap 'Calculate Body Fat%'</li> </ul>	<ul style="list-style-type: none"> <li>● Prompt user to enter given fields</li> <li>● Display the Body Fat% of the user</li> </ul>