Project Name: FitHub

Project Description:

We wanted to have an app that assist in maintaining a healthy lifestyle. We envisioned an app where people can post workouts online and share with the rest of the community what has worked for them. Right now, access to important fitness information isn’t as easily accessible on mobile devices. Either people have to sign up for a gym membership beforehand or hire a personal trainer to understand how and when to exercise. So we wanted a solution that makes it easier for people to get this information. Users will be able to post workouts for people with and without gym memberships. Also users will be able to add these workouts to their calendar so they know what workout to do on any day of the week. Users will be able to look back at the calendar and see what they did on each day they scheduled a workout to track their progression. This will essentially act as a workout archive.

The end result of this project will be a fully functioning android app that meets all the minimal requirements and possible overreach goals that we may accomplish. Integrating with multiple platforms will be the main overreach, should we reach that point.
Project Milestones:

Semester 1 -

1. Setup server - November 2, 2016
2. Get Facebook login working correctly - November 21, 2016
3. Get SQL database setup and pre populate with necessary information - December 1, 2016
4. Finish basic Calendar and Profile design - December 16, 2016

Semester 2 -

1. Complete sidebar functionality for navigating through screens - January 20, 2017
2. Complete Calendar functionality integrating with SQL database - February 3, 2017
3. Complete Create Workout screen with backend support - February 17, 2017
4. Complete Search screen and associated SQL queries - February 24, 2017
5. Complete Feeds for follow functionality - March 17, 2017
6. Finalize all Javadoc documentation - April 7, 2017

Project Budget and Resources:

Android Tablets: These will be used to test our app and determine overall quality of product. These will have no cost as they will be provided by the department.

Facebook API: This API will assist in logging in for the app. It will also simplify this crucial part of the app and expedite development of the rest of the functionalities.

Google Calendar: This API will assist in keeping a schedule for the workouts and archive the daily information.

SQL Database: SQL will be used for the backend and store information on workouts and exercises.

SQL Database: This will be used to host and demonstrate our project. We are still deciding between eHost and Amazon hosting. Regardless, the server should cost no more than $30.
Android Studio: This environment will be used to develop the app in the correct Android format.

Total Cost: $30.00

Work Plan:

Front-end Team: Wilson, Jeremy, Alejandro
Back-end Team: Keith, Janrae, Cloud
Documentation: Alejandro, Cloud
Quality Assurance Officer (Unit tests): Alejandro
Project Video: Everyone

Github link:

https://github.com/kjmonaghan/SeniorDesign

Preliminary Project Design:

FitHub is an application that manages every aspect of fitness ranging from keeping track of nutrition, creating a calendar of workouts, and even being able to utilize it to create workout sessions with friends/team as a social media type feature.

Create a profile: When a user first downloads and opens the app, they will be prompted to create an account. The assumption will be that they do NOT have an account yet, although it is certainly possible that they either got a new phone/device or are using someone else’s phone/device and already have an account. We want users to login in with Facebook to simplify and expedite the account creation process. After the successful creation of an account, the user will be taken to the home page, where they will now have access to all of the capabilities of the app, such as creating a workout, sharing a workout, entering their weight and nutritional goals, and following individuals who post workout routines.

Login: Facebook’s API uses OAuth for token-based authentication and, as a result, users will not have to type in their login credentials every time they want to use the app; conversely, they will be able to open the app and immediately engage in the task they want to complete.

Navigation: There will be a sidebar on the right side of the app for the user to traverse through all of the screens of the app. User can toggle the sidebar by a button in the top right corner of every screen.

Workouts: Workouts are key pieces of data for this app. We will keep track of a created workout through a assigned workout id number. This structure will have a name for the workout,
estimated time of completion, short description, timestamp of post, and a list of nodes that contain exercises and the amount of reps associated with that exercise. Also there will be a comment section associated with each workout id. Within the list of exercises, next to each exercise will be a button to activate a popup of the information of that exercise.

**Exercises:** Exercises can be thought of as the building blocks of a workout. These exercises store a name for the exercise, a short description of how to do the exercise, and the muscle group that the exercise is targeting.

**Manage Profile:** When it comes to tracking personal progress from performing workouts or following a healthy diet, user’s may update their physical measurements through their profile and decide whether to share it publicly or keep it private. On this screen will be their Facebook picture, first name, last name, and a short little blurb about themselves. Users may also view their list of people whom they follow through their profile. Their schedule for the day would also be displayed and this would only be viewed if the user viewing is looking at their own profile. Users will also be able to see other users profiles through the search function.

**Create a workout:** Users will be able to create a workout by selecting specific exercises that are pre-loaded within the app. Upon selecting an exercise, the user will be able to specify how many repetitions, sets, and/or seconds they require for the exercise. After creating the workout, it will be listed under the user’s feed. The user will then have the option to post it on their calendar and/or share their workout. If the workout is posted then it is shown within all of the follower’s feeds as well. Users may have the option to follow people through these workouts.

**Manage calendar:** Users will be able to view a calendar that shows a schedule of workouts for the users. When accessing the calendar, users will be shown their workout for a particular month by default. On a daily basis, users may record what they had ate on that day to keep track of their diet into their calendar. The associated time of workout will determine how much of the days time the workout will take up. Users can also store other health information here such as what they had to eat and an estimate of the calorie intake.

**Adding workout to schedule:** Joining a workout that someone else creates allows users to invite their friends and acquaintances to join them at the gym for an upcoming workout. While it is very simple to either text or GroupMe your friends about going to workout, it is not simple to share your workout routine with them. To accomplish this the user can simply tap on the “Add to calendar” button associated with a workout. They can see this button through a search for a workout or on another user’s workout feed.

**List workouts for the day(push notification):** This feature serves as both a reminder of your workout(s) for the day and as a form of motivation to ensure that you don’t accidentally schedule something during your planned workout. Users can access their daily schedule by going to their calendar or profile page.

**Post helpful workouts and diets:** With the proliferation and popularity of user-created content on both the web and mobile applications, as well as the natural tendency of the fitness community to be open and transparent, it is very important to provide a platform where users can post and share their workouts and diets.

**Follow other users:** If a user knows a friend who uses the app or someone who consistently post quality workouts, they may follow those users and perform their workouts. This is a great way for people who are new to working out find workouts to follow based on their preferences. It will also help generate ideas for new workouts that users may create for the future. You can find other users by using the search functionality.
**Workout Feed:** Each user will have a screen for their workout feed. This will consist of workouts that they have posted and also workouts that the users that they are following have posted. The most recent will be at the top of the screen.

**Filter workouts by area of body:** When most people start working out, they usually only know how to workout a specific area of their body or how to perform a specific workout (running, squats, etc.). Thus, in order to allow users to quickly and efficiently find workouts for the areas of their bodies that they do not know how to workout, we will provide the ability to filter workouts by area of body. This will basically act as a search function for the app. There will also be a tag feature to help further filter the workouts for a more precise result.

**Search:** In order to look for a specific user to follow, workout to view or exercise to learn about, the user will be able to type in keywords to query through our databases. When a user comes up the user will be able to either follow or view profile. When an exercise comes up the user will be able to view its information or start a workout with that exercise. When a workout comes up the user will be able to add that workout to their calendar or view the creator's profile. This function will also be needed in the process of creating a workout as they will need a way to add multiple exercises to the workout.

**Comments under workouts:** Whether they are words of encouragement or suggestions to further benefit progress, users may comment under their own workouts or other users workouts. This will allow users to be able to communicate with each other through each other's workouts. The comment system will be associated with a posted workout in the database.

**Ethical and Intellectual Property Issues:**

Ethics: The main ethical issue with this application is the use and storage of user information. This ethical issue is raised in 3.12 of the Eight Principles included in the Software Engineering Code of Ethics and Professional Practice. We must develop software and documents that respect the privacy of those affected by the software. In the case of our app, we must respect the privacy of our users and not share their information like a user’s email address with third parties or unauthorized individuals. Therefore, a user’s public profile will have a restricted amount of information which will be limited to their name, a picture, and a short description. When two users authorize each other, they will be able to view each other's full profile, which may include their workouts, email addresses, and other information associated with the app which users may want to keep private. We will also do our best to prevent unauthorized direct access to our database. Also, as an example, some users will want to keep their body weight (and any changes in body weight that they are tracking on the app) confidential. Thus, we will not view this information or allow it to be shared with other users of the app unless it is explicitly shared by the user.

Intellectual property surrounding user content creation (copied from QuantConnect): As the creators of the Fithub platform and, obviously, administrators of the server/database, we will have access to all of the data that users created and submit, specifically their workout routines. With the proliferation of social media and web-based content sharing, we recognize that some of the users on Fithub might be promoting their workout routines on sites such as Instagram, Workout Trainer, and Gym Hero and potentially monetizing their content. Thus, to
prevent users from being skeptical/hesitant about sharing their workouts to the community on Fithub, we will have an intellectual property policy that states that users own all context they submit/create on Fithub and that it will not be shared with anyone unless they explicitly share it with another user. We realize that their intellectual property is valuable; we will do our best to protect it and keep it safe. However, users must recognize that other users of the Fithub platform are not held to the same intellectual property policy and, in theory, could steal and/or monetize any content created and/or shared on the platform.

**Change Log:**

Change Log 1: (Project Description)
- Users will be able to look back at the calendar and see what they did on each day they scheduled a workout to track their progression. This will essentially act as a workout archive.
- This was appended to the project description as we felt that this was another key feature that our app could offer.

Change Log 2: (Project Milestones)
- Added and edited a few of the milestones that were listed in the Initial Project Description. We felt that the initial milestones were not specific enough to achieve progress in this project.

Change Log 3: (Project Budget and Resources)
- Elaborated on all of the resources and how they will be used in the project. Also added a few new resources.

**Front-end Mockups:**
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, October 1</td>
<td>Chest Workout</td>
<td>5:00pm</td>
</tr>
<tr>
<td></td>
<td>Calorie Count</td>
<td>1,150</td>
</tr>
</tbody>
</table>
Chest Workout
Monday, October 1
5:00pm - 6:15pm

- Bench Press 4x8
- Pushups 3x12
- Incline Dumbbell Press 4x4

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