FITNESS CHEF

PROJECT PLAN AND SECOND INCREMENT REPORT

SPRING 2017

Team – 1

Nageswara, Rao Nandigam – 61

Chakilam, Revanth – 9

Syed, Moin – 86

Sarda, Devender – 82

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1. Project Goals and Objectives

Motivation: In today's busy-busy world, it's hard to stay fit and keep track of what we should eat and what we shouldn't. With this underlying motivation, we came up with an idea to create an application which helps you do just that. Stay fit by keeping track of your eating habits and exercise routines.

Significance: Though we have multiple applications on fitness and nutrition in the market place, this application stands out as it combines both the dietary plan and exercise routine which a user can follow to make a healthy living and also we have put image recognition functionality which is not available in many of the applications today.

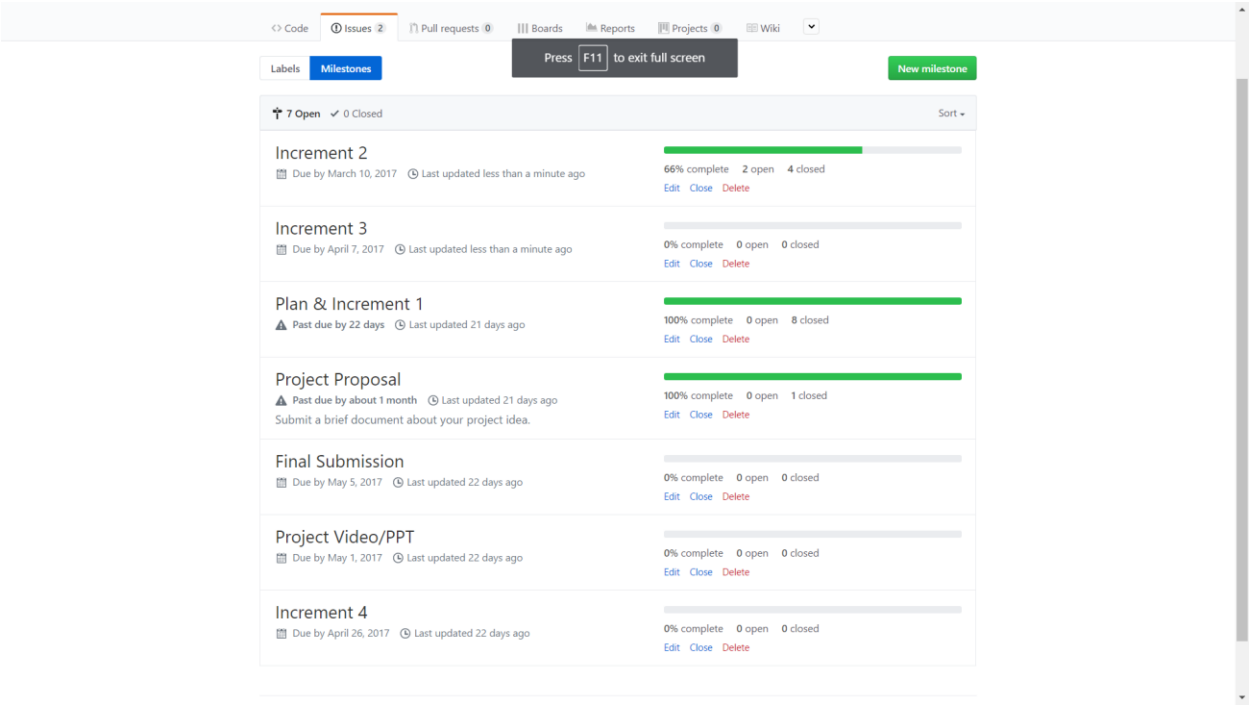
The Objective: The objective of this application is to make people fit and make them follow a diet for a healthy lifestyle.

System Features:

1. Register & Sign Up Option.
2. Create a plan for individual user.
    a. We will take weight and height of the user while doing registration and set target for day, week and month.
3. Track user calories based on Food + Exercise = Total Calories.
4. Display user progress with intuitive graphs and charts.
5. Image Recognition: User can upload images of food item's he/she consumes, and our application calculates the approximate calories based on the image and food.
6. Exercise
    a. User has an option to select different exercises and enter inputs to track calories burned.
7. Pie chart
    a. You will have pie chart that for calories from meals. i.e. Breakfast, lunch and dinner.

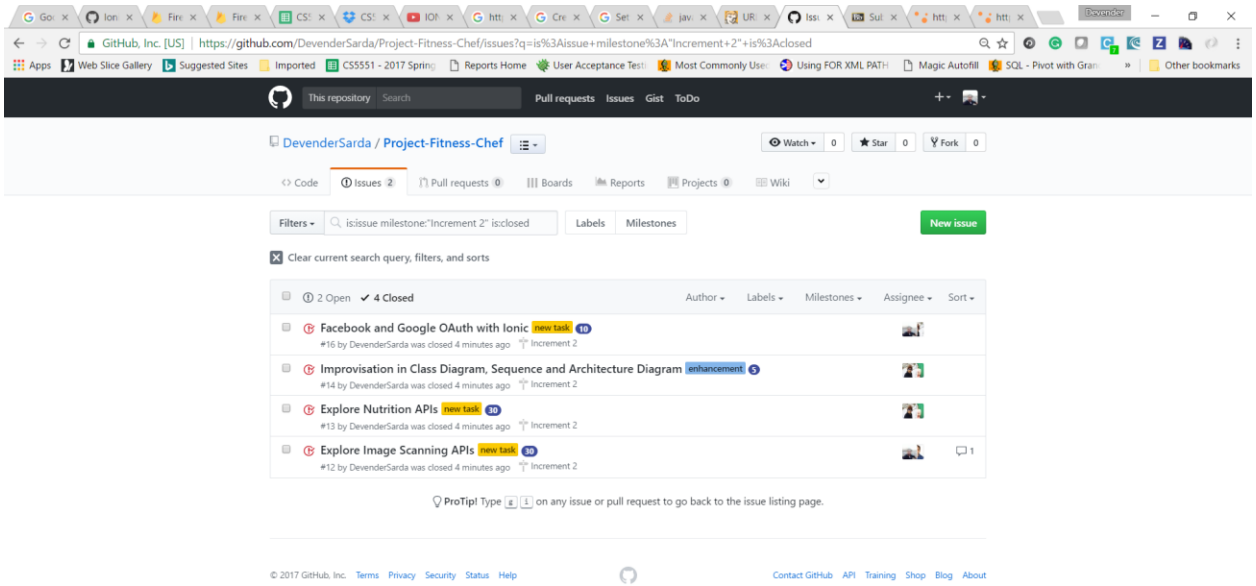
2. Project Plan and Management

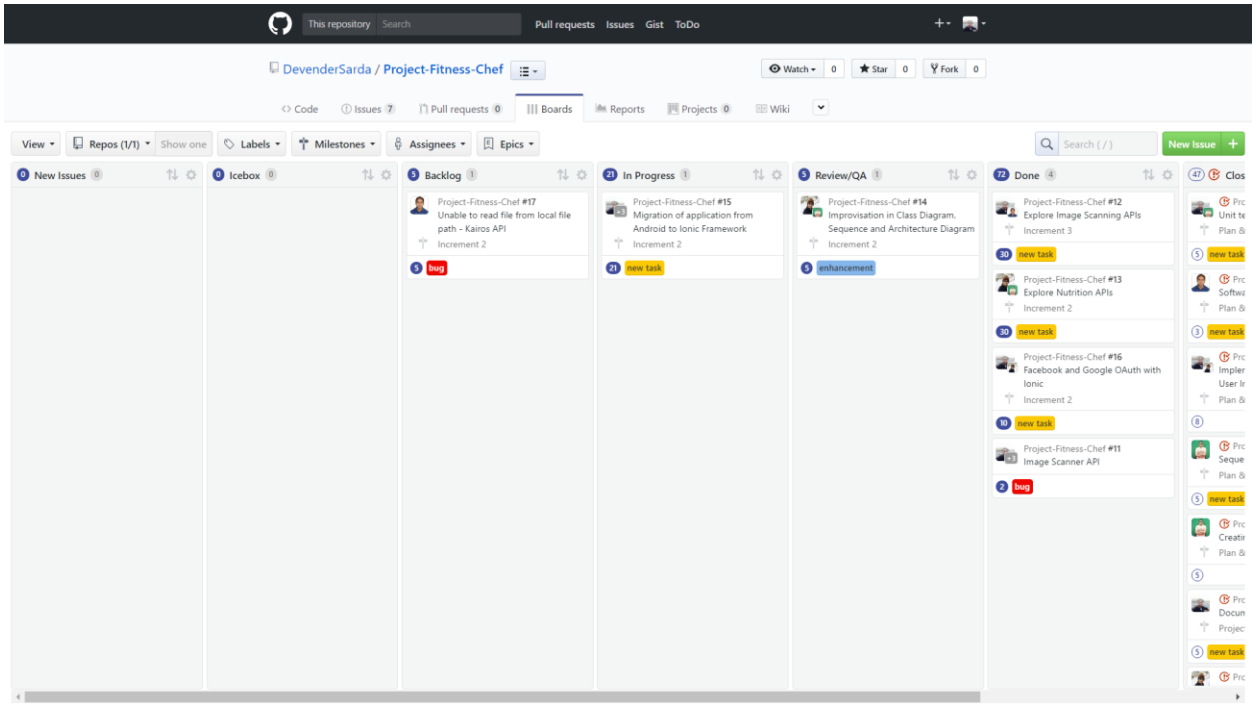
1. Project Plan: Schedule for the whole project is created



2. Tasks and Issues Screenshot:

These are the issues that describe the tasks with contributors allocated on each and every tasks. It is assigned with the level of difficulty and the tasks are successfully closed as they are completed.





3. Project Timelines and Task Responsibility

3.2.1 Project Timelines

The Project is submitted in 4 increments and the aim is to achieve the said goals and tasks reported in the project

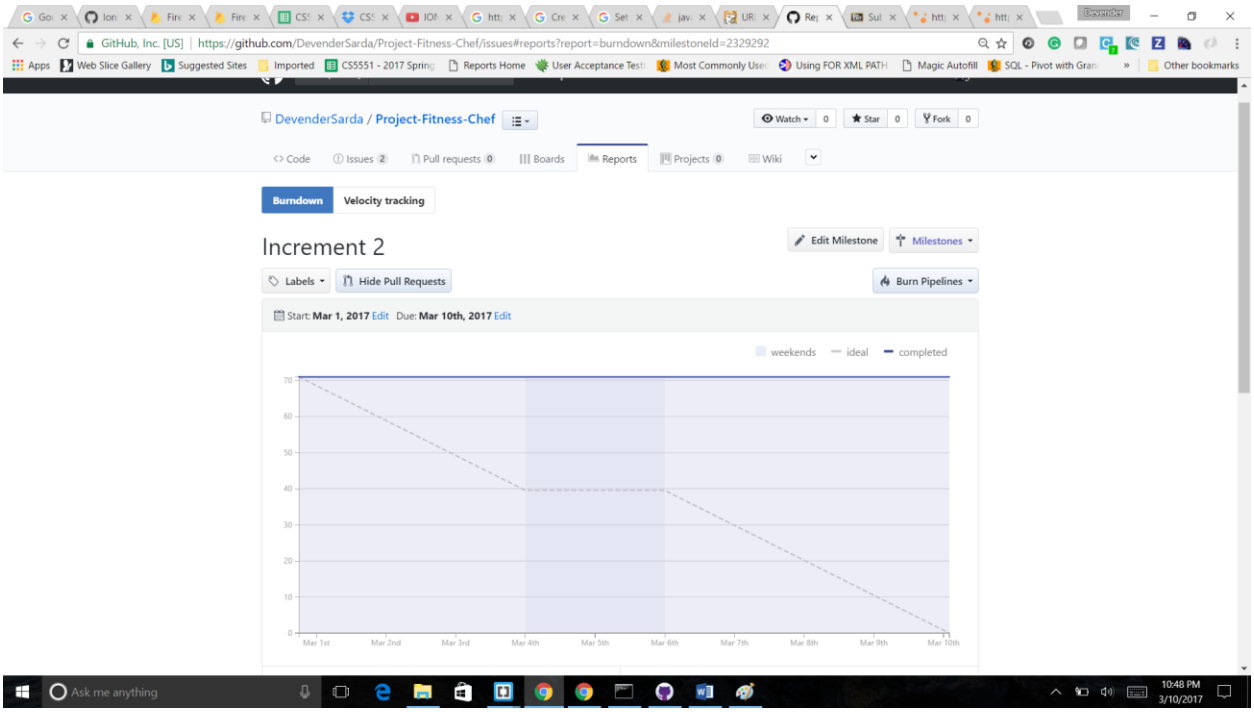
3.2.2 Members

- Nageswara Rao Nandigam
- Syed Moin
- Revanth Chakilam
- Devender Sarda

3.2.3 Task Responsibility

Each member has their own task and projected with limited timeline. Nageswara Rao Nandigam explored Kairos API, involved in migration of code to ionic framework, improved Sequence Diagram and helped in documentation & unit testing of the application. Devender was involved in migration of code to ionic framework, exploring Image scanning APIs like Google Cloud Platform API, integrated Google OAuth, involved in project management and unit testing. Syed Moin was involved in migration of code to ionic framework, exploring Nurtition APIs like NurtitionIX API, implemented Facebook OAuth, improved Architecture Diagram and unit testing. Revanth Chakilam majorly involved in styling and designing of the application, created html and css files for login, register pages, exploring APIs for the application, improved class diagram and helped in unit testing of application.

4. Burn Down Chart



4. Functionality Report

The Project fitness chef mostly focusses on the nutrition and health benefits.

In the second increment, we have migrated the application from Android to Ionic Application and designed the pages main, login, signup, goal, details etc.

The user having an account can login directly. New Users has the facility to sign up in to the application. The new users can create an account based on the personal email id or through the social network O authentication. End users are provided with a choice to select the O authentication using either face book or google mail. Once the user connects to the application. He/she should set a goal whether to gain the weight or lose the weight or maintain the stability.

The users are asked with their height and weight in order to calculate the amount of calories intake and suggest them optimum nutrition for the betterment of their health.

In the details section, the users are asked to provide the personal details including location and date of birth.

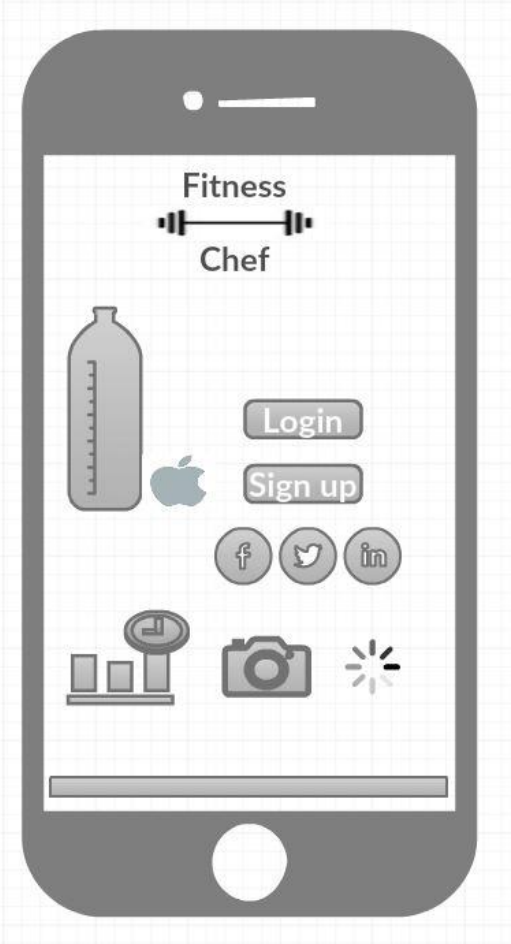
From the user entered details an API is called based on the inputs and the necessary result is collected from the API in JSON format .

4.1 Existing Services/ REST API:

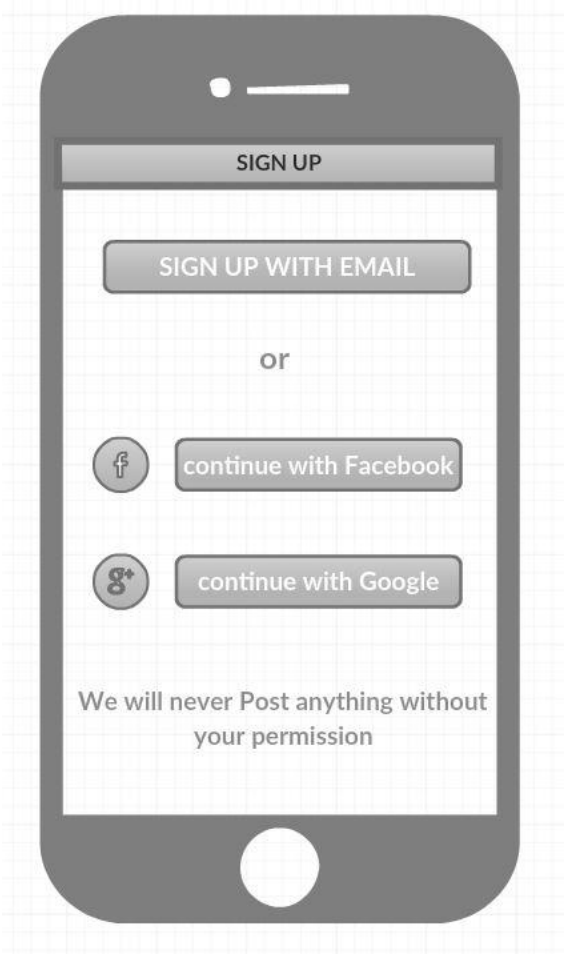
- Facebook OAuth API using Ionic
- Google OAuth API using Ionic
- Android studio framework
- Ionic Framework
- Storage using Firebase

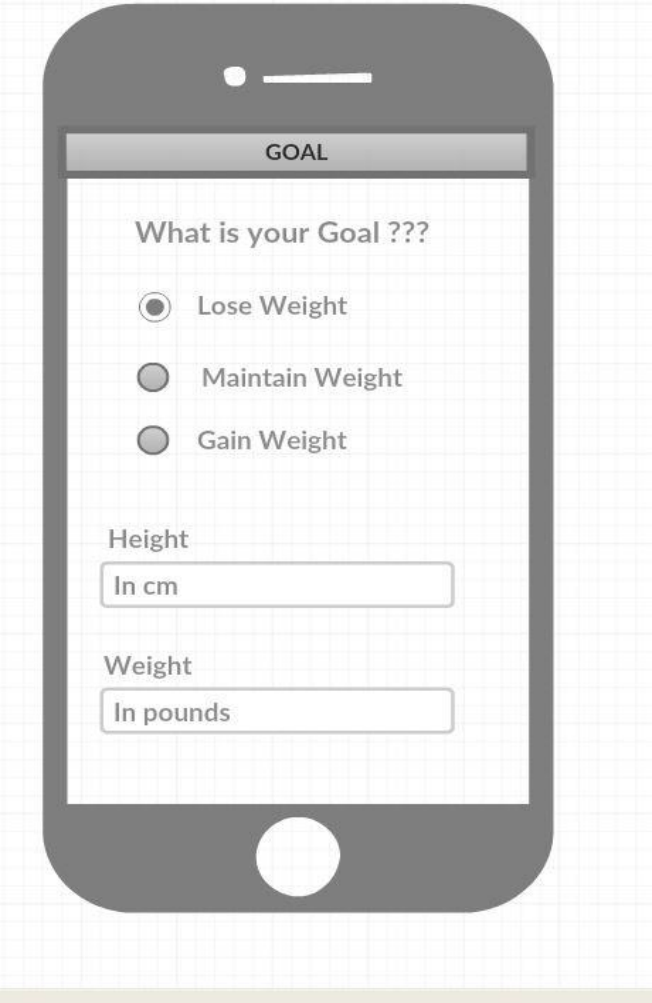
4.2 Detail Design of Features:

4.2.1 Wireframes and Mockups




LOGIN
Continue with Facebook
Sign in with Google
We will never Post anything without your permission
or
Email
Password
Sign in
Forgot password?
By continuing, you agree to our Terms of Service and Privacy Policy

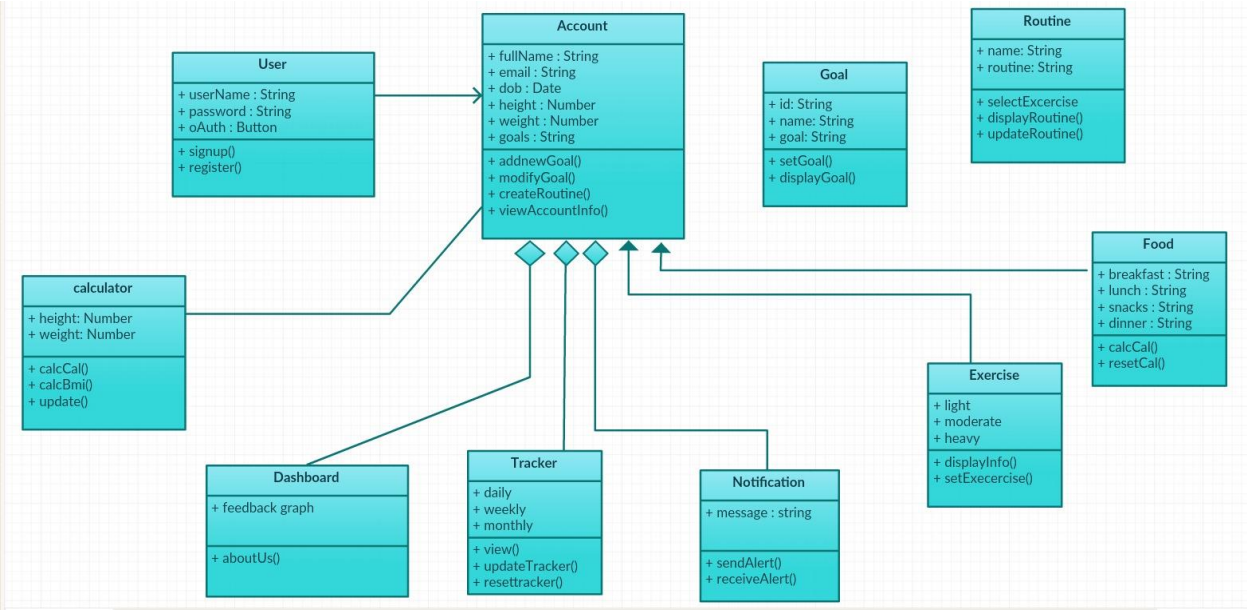

SIGN UP
SIGN UP WITH EMAIL
or
continue with Facebook
continue with Google
We will never Post anything without your permission


GOAL
What is your Goal ???
Lose Weight
Maintain Weight
Gain Weight
Height
In cm
Weight
In pounds

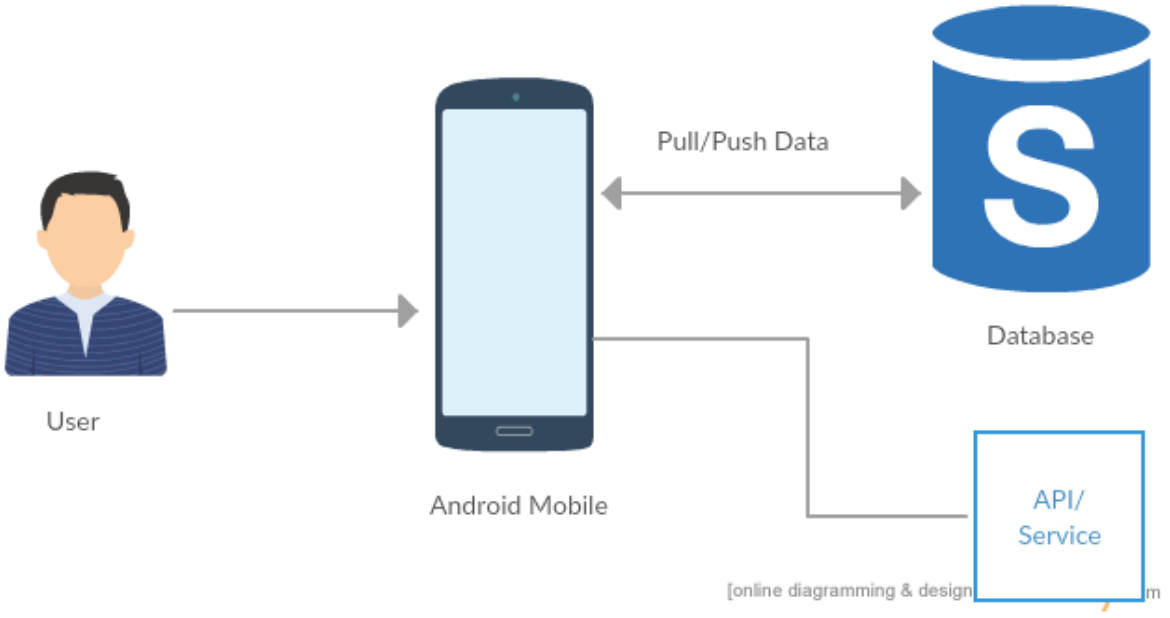

Details
Name
Full name
Gender
male
female
First Cry
DD/MM/YYYY
Location
City

4.2.2 Architecture diagram/Sequence diagram/Class diagram/Use case diagram

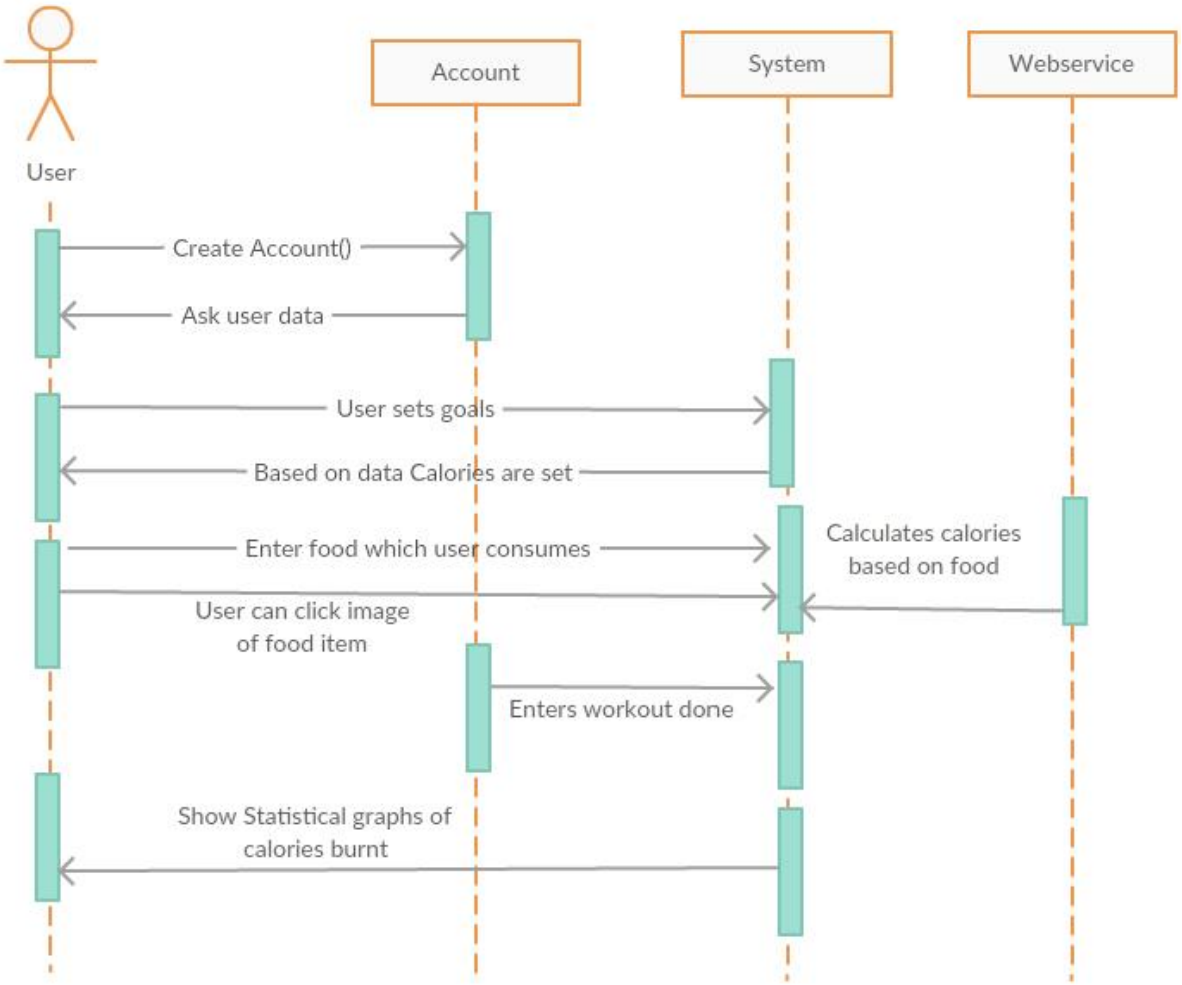
Class diagram



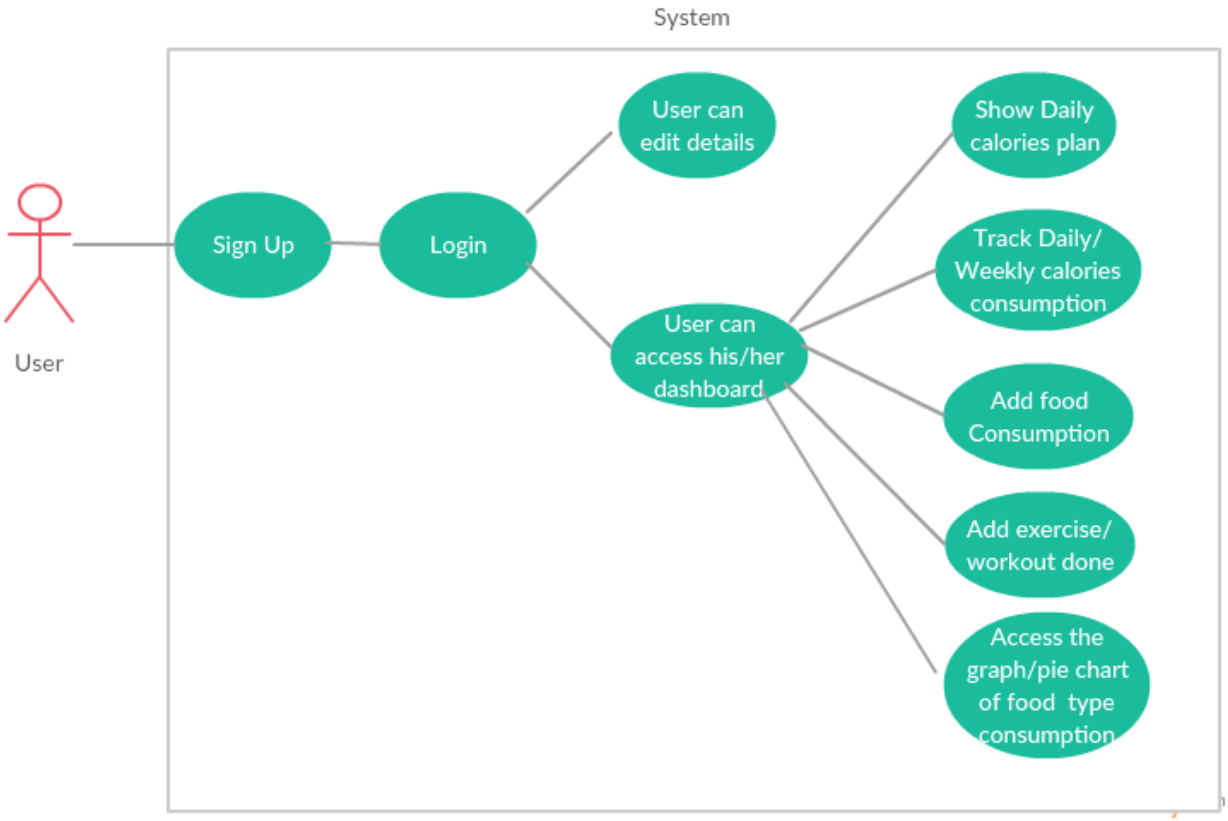
Architecture diagram



Sequence Diagram


User
Account
System
Webservice
Create Account()
Ask user data
User sets goals
Based on data Calories are set
Enter food which user consumes
Calculates calories based on food
User can click image of food item
Enters workout done
Show Statistical graphs of calories burnt

Use case Diagram



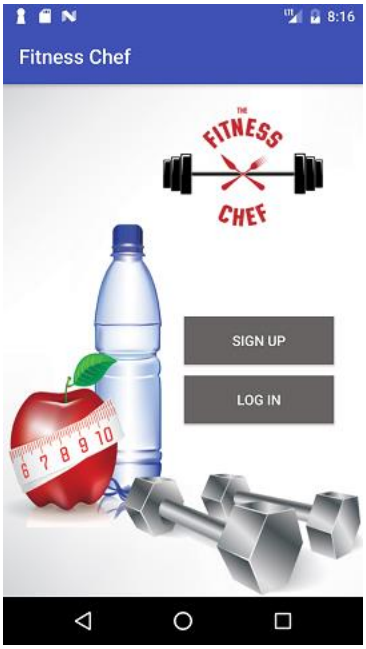
4.3 Testing:

Unit test cases

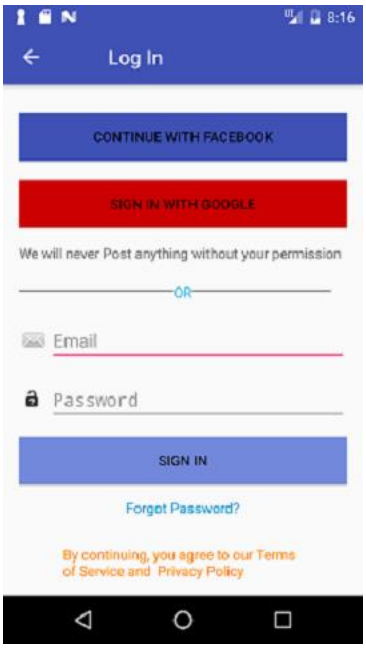
S.No	Test Case Title	Description	Expected Outcome	Result
1	Successful user Verification	The user should login with their password and email id	User should login successfully	Pass
2	Unsuccessful User	Login to the system with a wrong password	Login should fail with wrong password	Pass
3	Successful user login	The user should login with their password and email id	User should login successfully and enter in to the application.	Pass
4	Oauthentication	User can be able to login with facebook or gmail login.	User can create a new login or can login with social oauthentication.	Pass
5	New user should signup	After providing the details new user gets registered successfully	User registration should happen successfully	Pass
6	Invalid Email	The emails which are not valid are not accepted.	User should provide a valid email adress while registration or login.	failed
7	Goal	User should select his goal out of valid three options and provide his/her height and weight.	Application throws an error if user doesnot select any valid option or if user leaves the fields empty.	Pass
8	Details	User should provide the personal details and location etc	The user details should be captured.	Pass
9	Google oauth	User should provide user name and password	login successfully	failed
10	Image scan API	If user provide Image URL from online	Will get respective Image classifier	Pass

4.4Deployment

Main Page

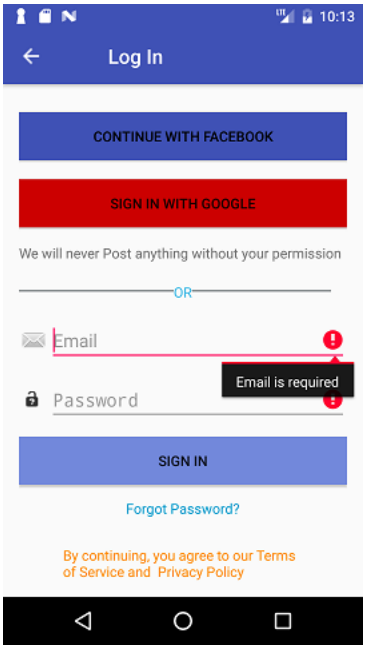


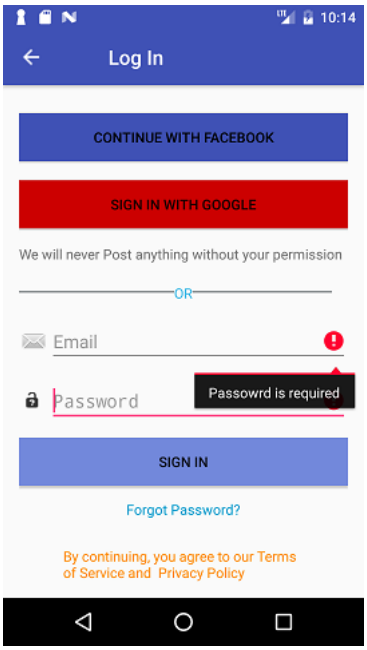
Login Page



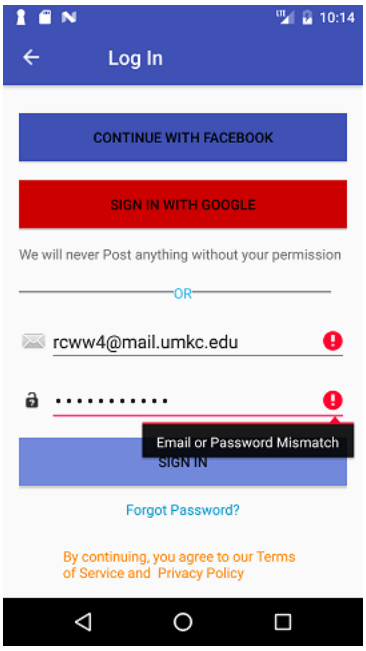
Login Page validations

- **When user leaves the login fields empty**



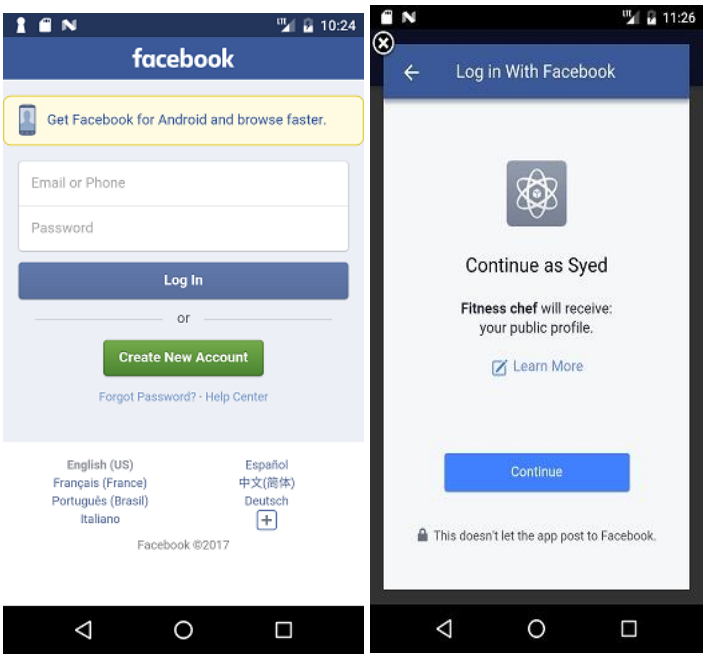


- **When the email and password mismatches**



Signup page

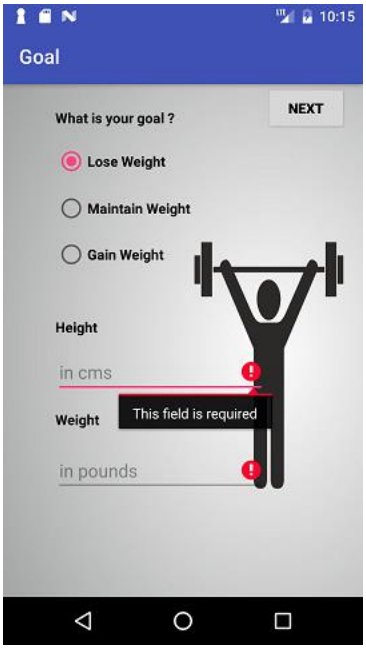
Oauth Facebook



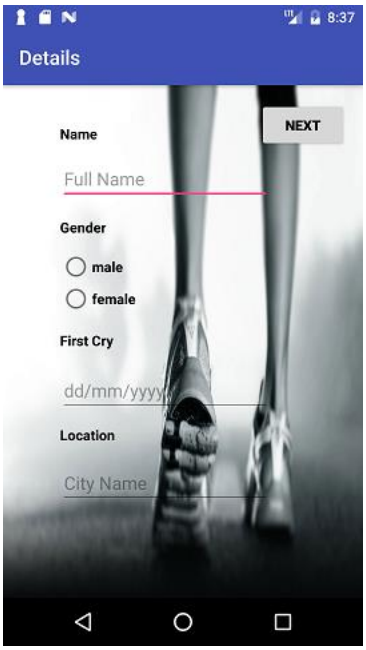
Goal Page

Goal Page Validations:

- **When user leaves the fields empty**



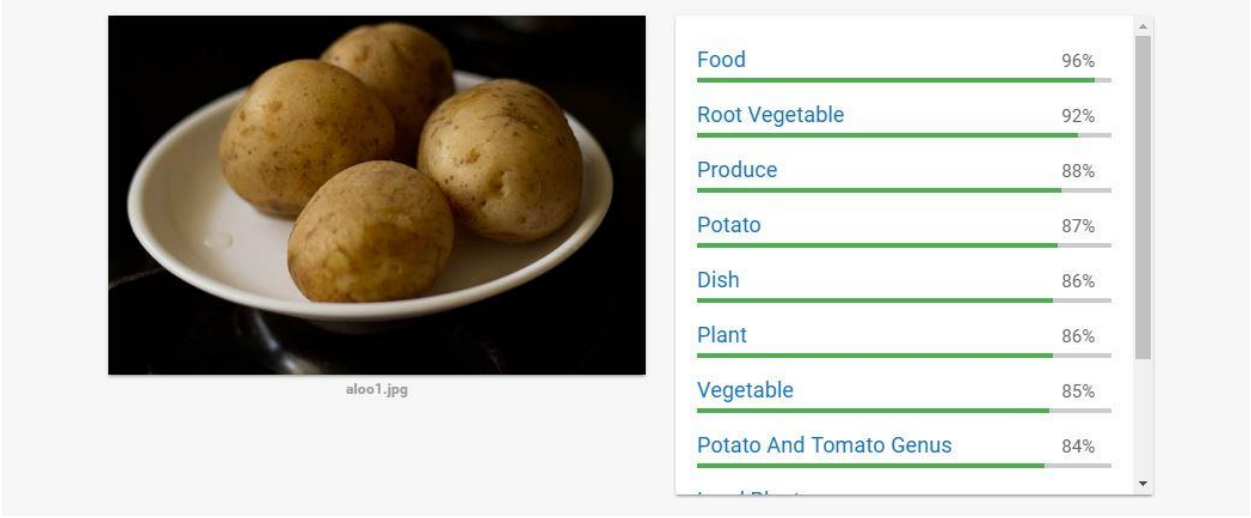
Details page



4.4.2 APIs used in the Application

We explored multiple image scanning APIs and narrowed down to 2 APIs: Google Cloud API and IBM Kairos visual recognition.

Image Scanning API using Google Cloud API:



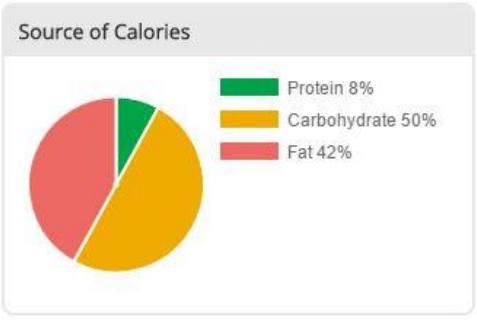
IBM Kairos API:


```
[
 {
  "classes": [
   {
    "class": "cafe au lait",
    "score": 0.69,
    "type_hierarchy": "/food/beverage/coffee/cafe au lait"
   },
   {
    "class": "coffee",
    "score": 0.86
   },
   {
    "class": "beverage",
    "score": 0.925
   },
   {
    "class": "food",
    "score": 0.925
   },
   {
    "class": "coffee drink",
    "score": 0.556,
    "type_hierarchy": "/food/beverage/coffee drink"
   },
   {
    "class": "Turkish coffee",
    "score": 0.554,
    "type_hierarchy": "/food/beverage/Turkish coffee"
   },
   {
    "class": "chocolate color",
    "score": 1
   }
  ],
  "classifier_id": "default",
  "name": "default"
 }
]
```

JSON

Classes	Score
cafe au lait	0.69
coffee	0.86
beverage	0.93
food	0.93
coffee drink	0.56
Turkish coffee	0.55
chocolate color	1.00

Nurtition APIs – NurtitionIX



1 cup Aloo Gobi

Nutrition Facts

Aloo Gobi

Serving Size: 1 cup

Amount Per Serving	
Calories 111	Calories from Fat 49
	% Daily Value*
Total Fat 5.5g	8%
Saturated Fat 0.9g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 230.1mg	10%
Total Carbohydrates 14.5g	5%
Dietary Fiber 2.8g	11%
Sugars 1.7g	
Protein 2.5g	
Vitamin A	1%
Vitamin C	45.7%
Calcium	2.8%
Iron	6.9%

* Percent Daily Values are based on a 2000 calorie diet

How long would it take to burn off 110 KCal?

Walking (3mph)	30 minutes
Running (6mph)	11 minutes
Bicycling (10mph)	15 minutes

Values estimated based on person weighting 140 lbs. Login to personalize.

4.4.3 Github Link:

The below is the Link for the GitHub Repository in which the project documentation and source code and the project, its analysis in burndowns and Zen hub tools are also present

https://github.com/DevenderSarda/Project-Fitness-Chef

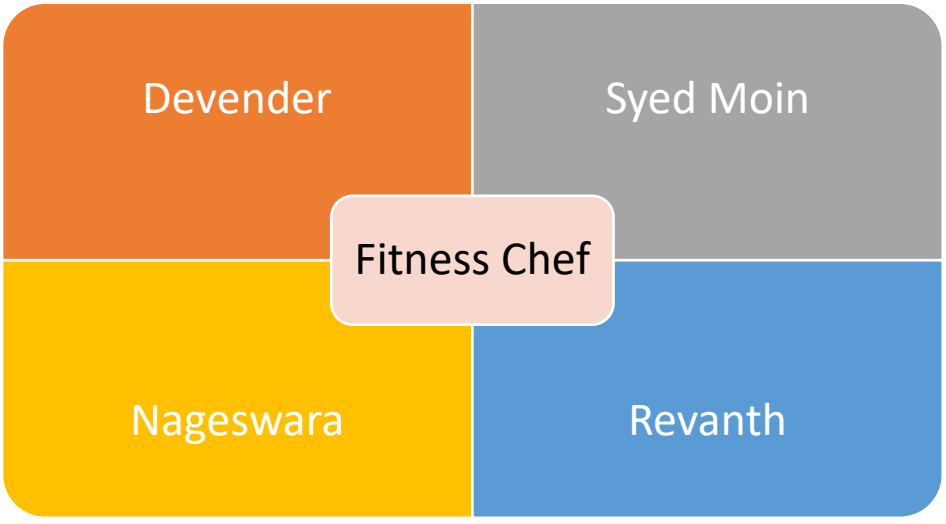
4.5Project Management

4.5.1 Implementation status report

4.5.1.1 Work completed

- **Description**
  - Fitness chef android application
  - Login and Registration Page
  - Design and working of tracking calories page

4.5.2.2 Contribution



4.5.1.2 Work to be completed

- **Description**
  - Integration of APIs with Master code
  - Implement Home page
  - Explore of Exercise Apis

- **Responsibility**
  - Integration of APIs with Master code - Revanth & Nageswara Rao
  - Explore of Exercise APIs - Devender & Moin
  - Implement Home page – Team Task

5. Bibliography

https://www.nutritionix.com/

https://developer.android.com/about/versions/nougat/index.html

https://material.io/icons/

https://developers.facebook.com/

https://developer.nutritionix.com/admin/

https://visual-recognition-demo.mybluemix.net/

https://cloud.google.com/vision/

https://ionicframework.com/docs/