FITNESS CHEF

FINAL PROJECT 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.

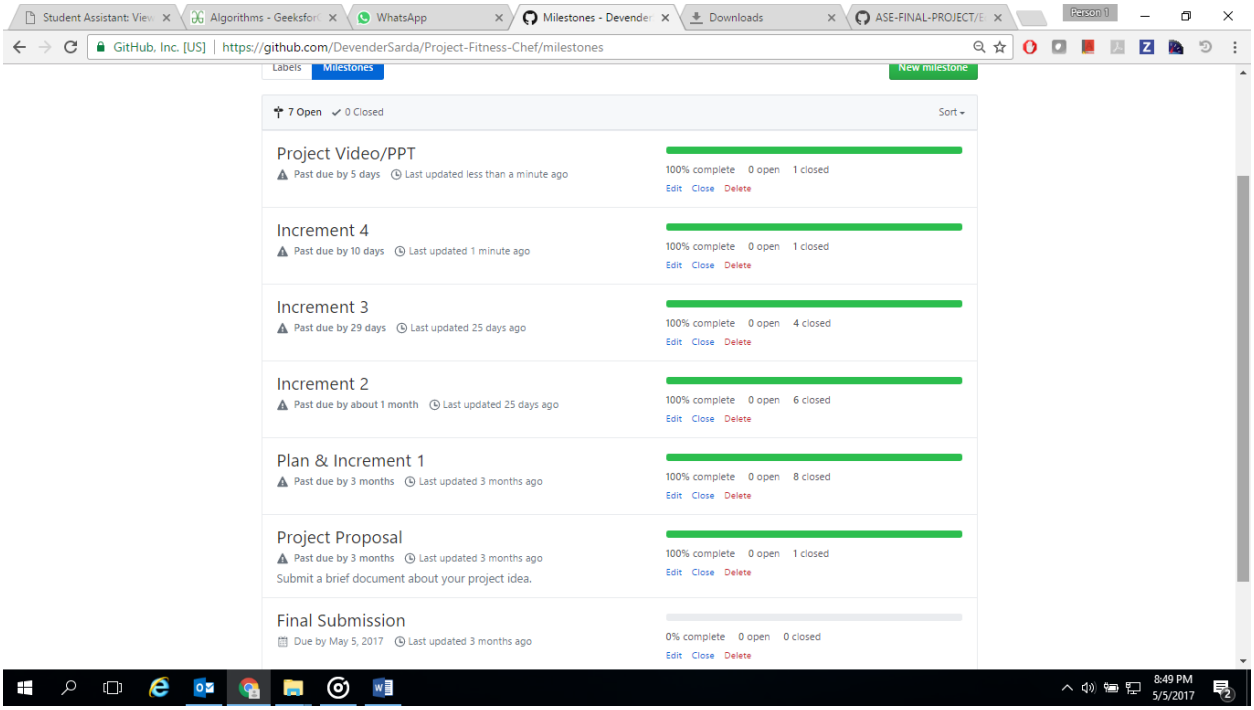
The Objective: The objective of this application is to make people fit and make them follow a diet for a healthy lifestyle.

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.

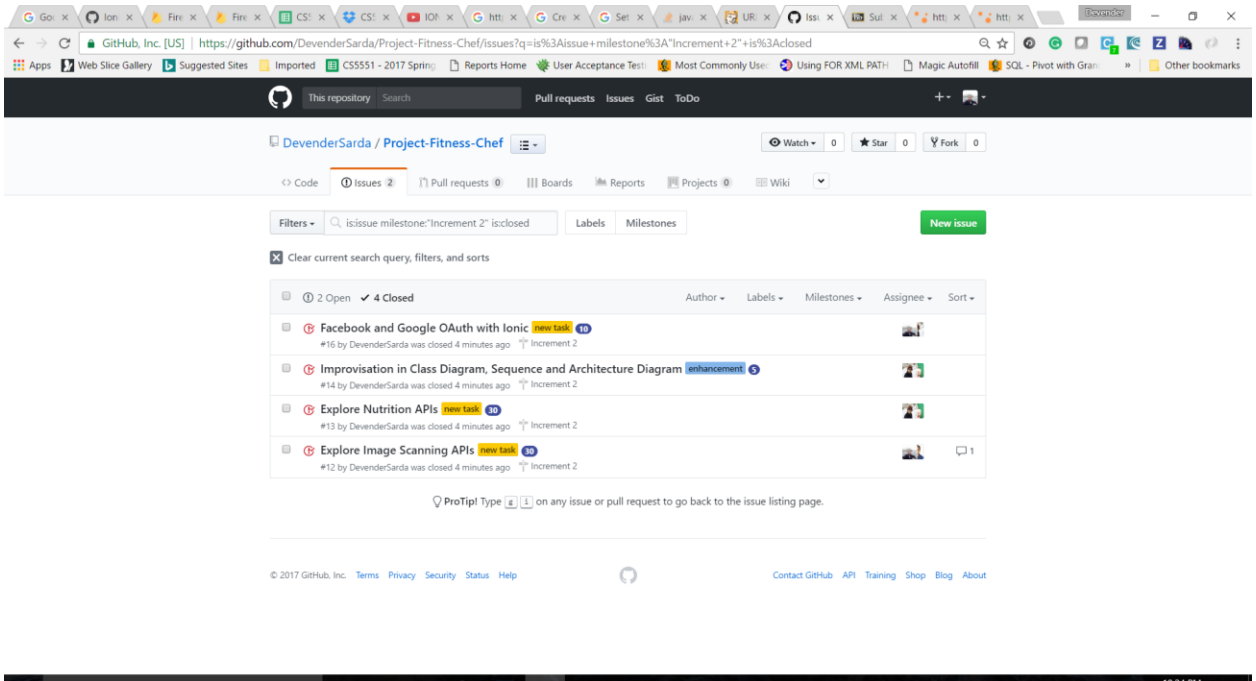
2. Project Plan and Management

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.


GitHub, Inc. [US] | https://github.com/DevenderSarda/Project-Fitness-Chef/issues?q=is%3Aissue+milestone%3A"Increment+2"+is%3Aclosed
This repository Search
Pull requests Issues Gist ToDo
DevenderSarda / Project-Fitness-Chef
Watch 0 Star 0 Fork 0
Code Issues 2 Pull requests 0 Boards Reports Projects 0 Wiki
Filters is:issue milestone:"Increment 2" is:closed
Labels Milestones
New issue
Clear current search query, filters, and sorts
2 Open 4 Closed
Author Labels Milestones Assignee Sort
Facebook and Google OAuth with Ionic new task 10
#16 by DevenderSarda was closed 4 minutes ago Increment 2
Improvisation in Class Diagram, Sequence and Architecture Diagram enhancement 5
#14 by DevenderSarda was closed 4 minutes ago Increment 2
Explore Nutrition APIs new task 30
#13 by DevenderSarda was closed 4 minutes ago Increment 2
Explore Image Scanning APIs new task 30
#12 by DevenderSarda was closed 4 minutes ago Increment 2
ProTip! Type g i on any issue or pull request to go back to the issue listing page.
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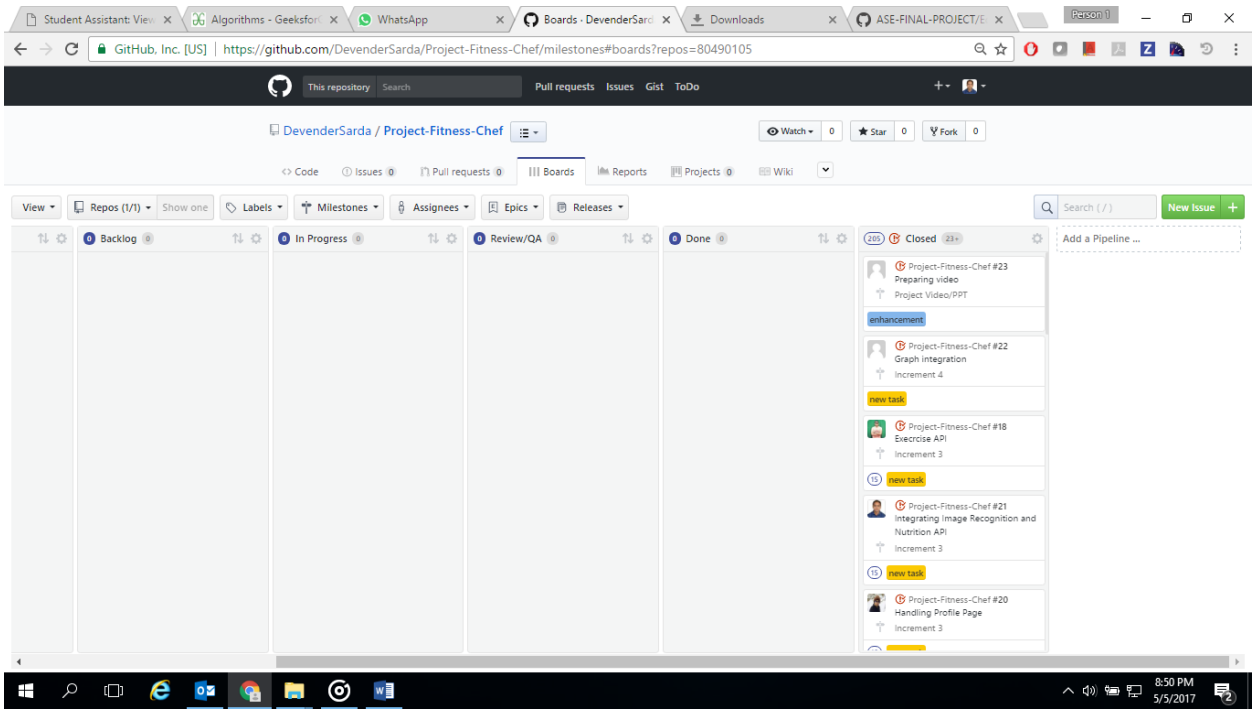
Contact GitHub API Training Shop Blog About


Ask me anything
10:34 PM
3/10/2017


GitHub, Inc. [US] | https://github.com/DevenderSarda/Project-Fitness-Chef/milestones#boards?repos=80490105
This repository Search
Pull requests Issues Gist ToDo
DevenderSarda / Project-Fitness-Chef
Watch 0 Star 0 Fork 0
Code Issues 0 Pull requests 0 Boards Reports Projects 0 Wiki
View Repos (1/1) Show one Labels Milestones Assignees Epics Releases
Search (/) New Issue
Backlog 0
In Progress 0
Review/QA 0
Done 0
205 Closed 23+
Add a Pipeline ...
Project-Fitness-Chef #23
Preparing video
Project Video/PPT
enhancement
Project-Fitness-Chef #22
Graph integration
Increment 4
new task
Project-Fitness-Chef #18
Execrcise API
Increment 3
15 new task
Project-Fitness-Chef #21
Integrating Image Recognition and Nutrition API
Increment 3
15 new task
Project-Fitness-Chef #20
Handling Profile Page
Increment 3
8:50 PM
5/5/2017

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 implemented Kairos API and nutrition API, food recognition by capturing from camera, calculating and displaying the calories back to the application, saving the historical data and allowing the user to update the food intake for any of the previous date, displaying daily progress with some intruitive pie chart and bar graph, weekly target increment with an interative graph. Devender implemented Fitness News Feed/Tips API like Get News API, interactive news feed for the user to stay longer in the application, resolving mashup issues, involved in project management, documentation, creation of wireframes, and unit testing. Syed Moin implemented Register pages, profile page of the user, database connections, updating and retrieving the data dynamically , involved in documentation and unit testing. Revanth Chakilam implemented Fitness part of the application i.e., he implemented Exercise guide for Cardio and Strength, calculation of calories based on meal/exercise, adding them dynamically to the target count, creation of details page, Home page, application icon, floating button animations in the home page, data validations in the entire applications, majorly involved in styling and designing of the application, preparing unit test cases, designing architecture.

4. Functionality Report

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

In the project, we have mainly concentrated on integrating our application and connection all the apis explored. We have completed the major chunks of our application with a little bit of styling and features to be added for the last increment.

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 Authentication. End users are provided with a choice to select the Authentication using either Facebook or Google. 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 .

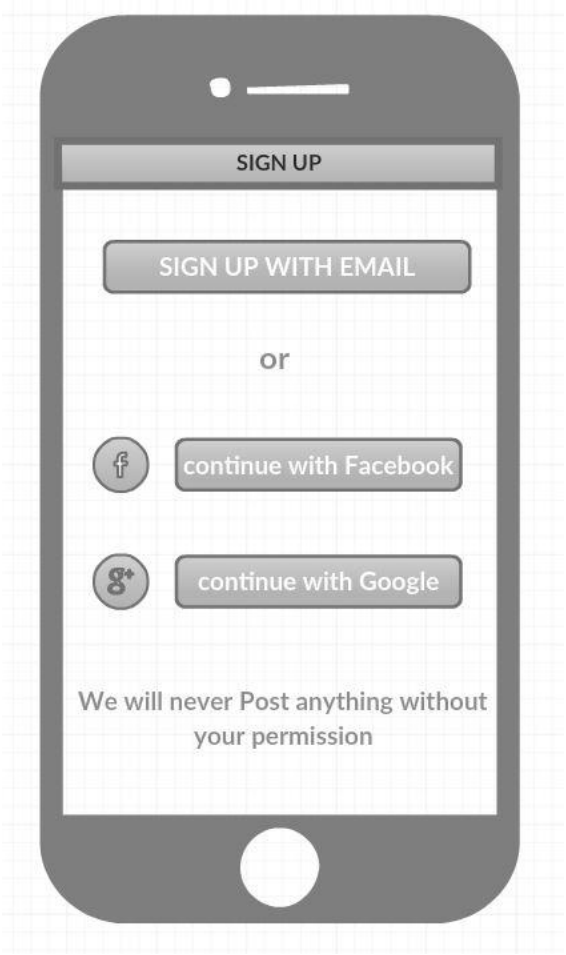
4.1 Existing Services/ REST API:

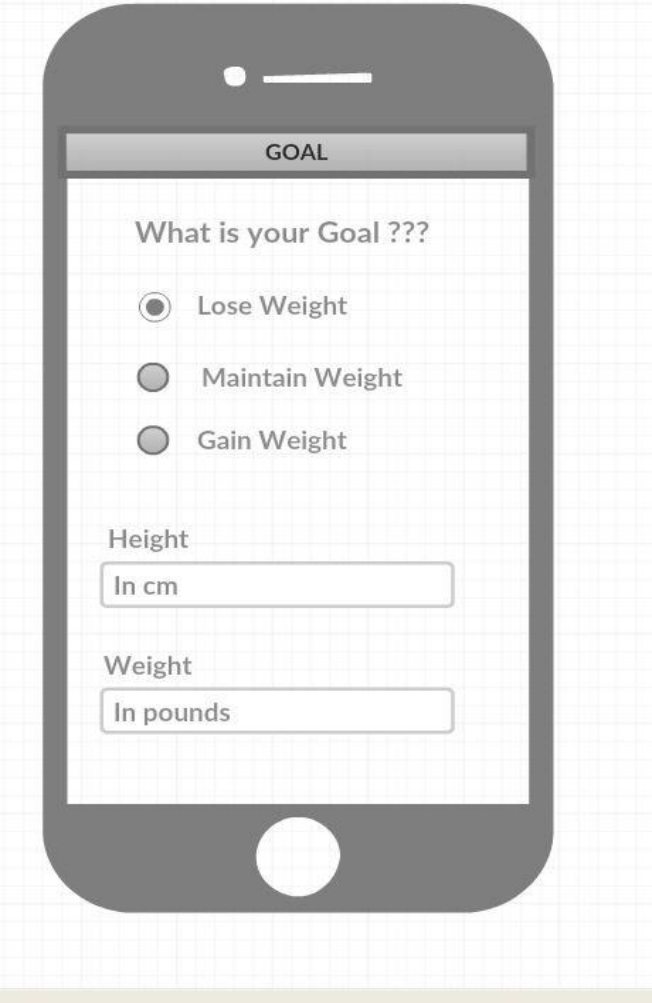
- Facebook OAuth API using Ionic
- Google OAuth API using Ionic
- Android studio framework
- Storage using Shared Preferences

4.2 Detail Design of Features:

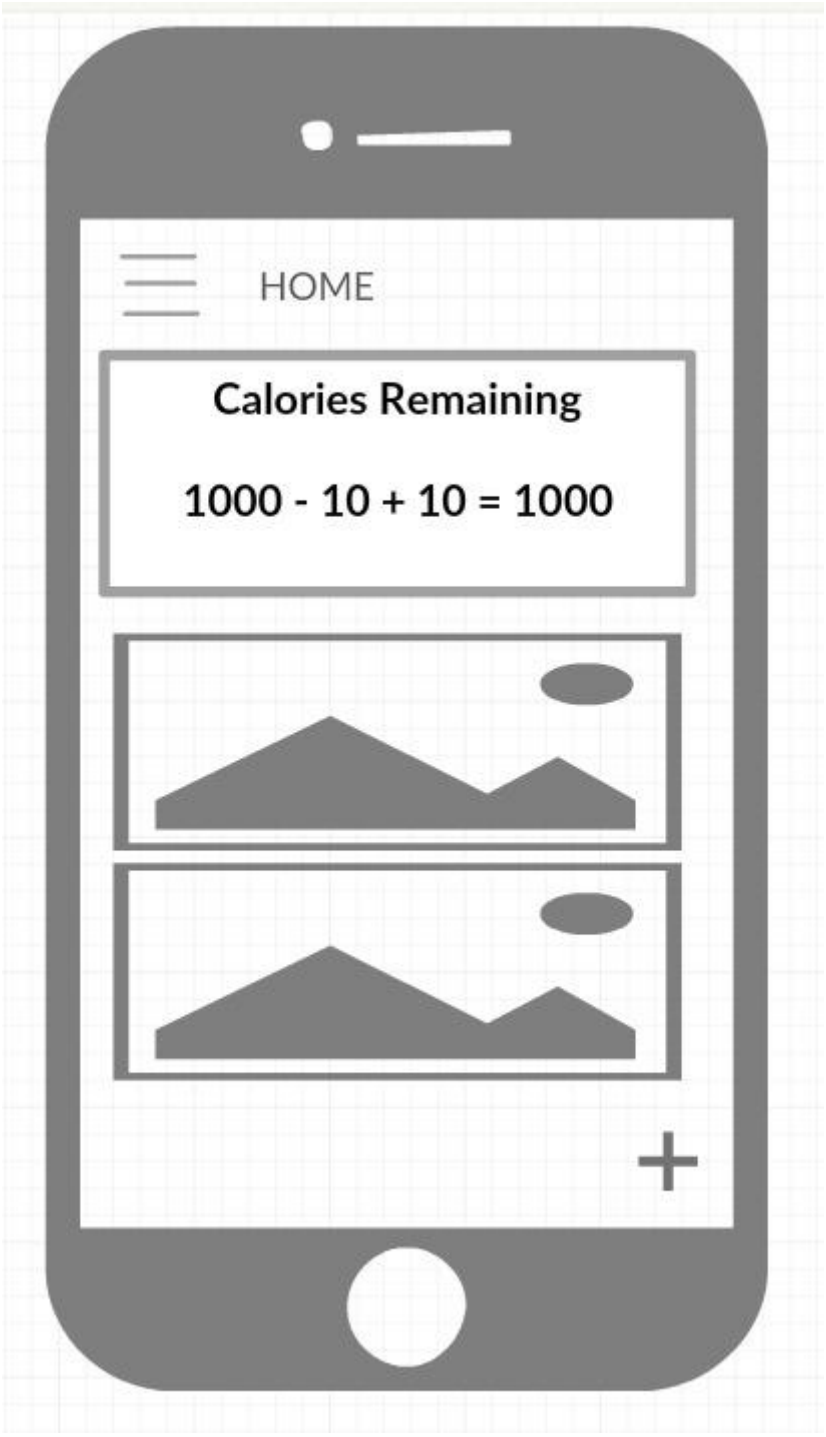
4.2.1 Wireframes and Mockups


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

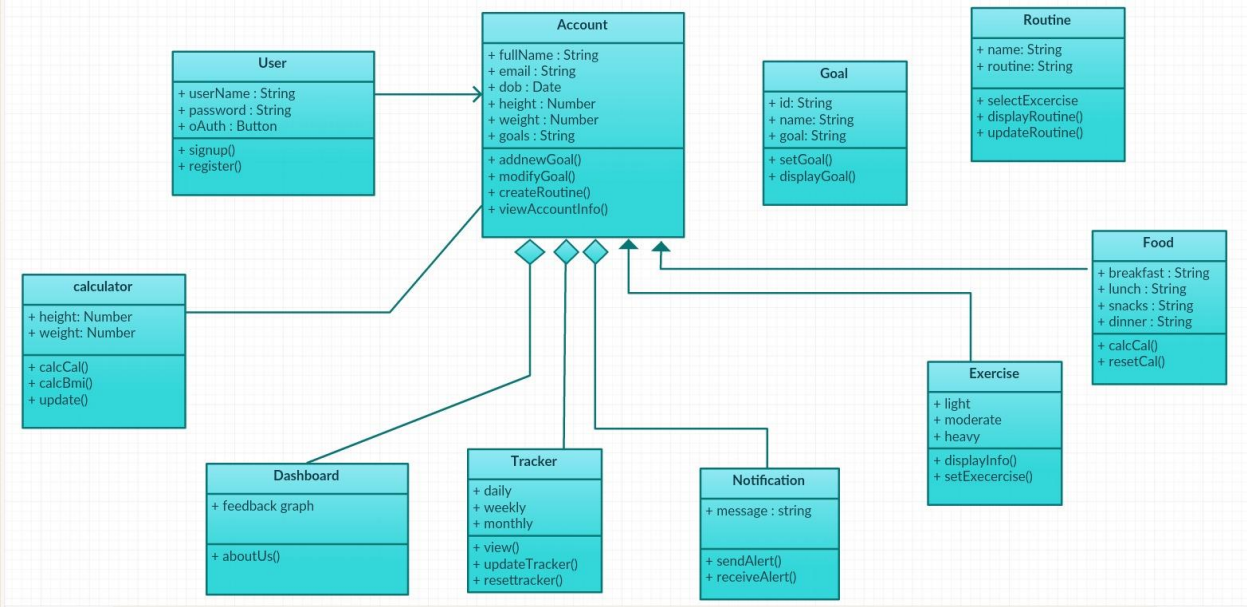

GOAL
What is your Goal ???
Lose Weight
Maintain Weight
Gain Weight
Height
In cm
Weight
In pounds


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

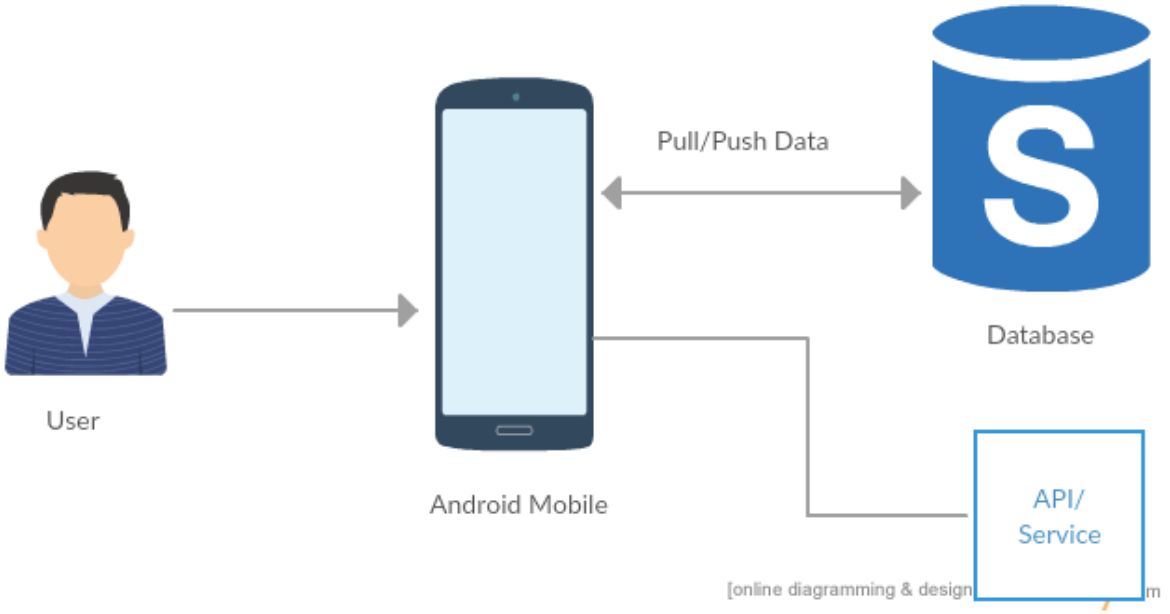

HOME
Calories Remaining
1000 - 10 + 10 = 1000

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

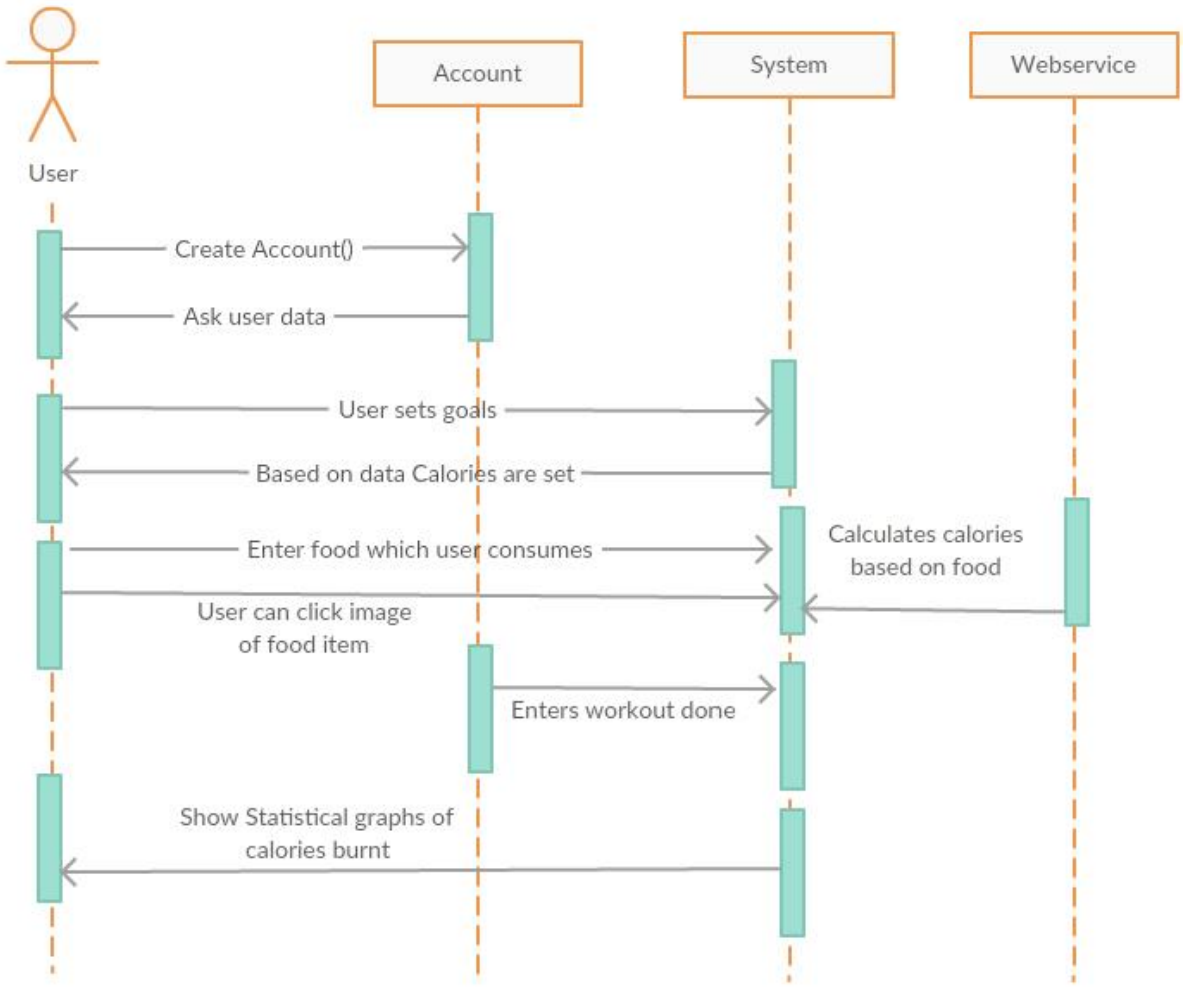
Class diagram



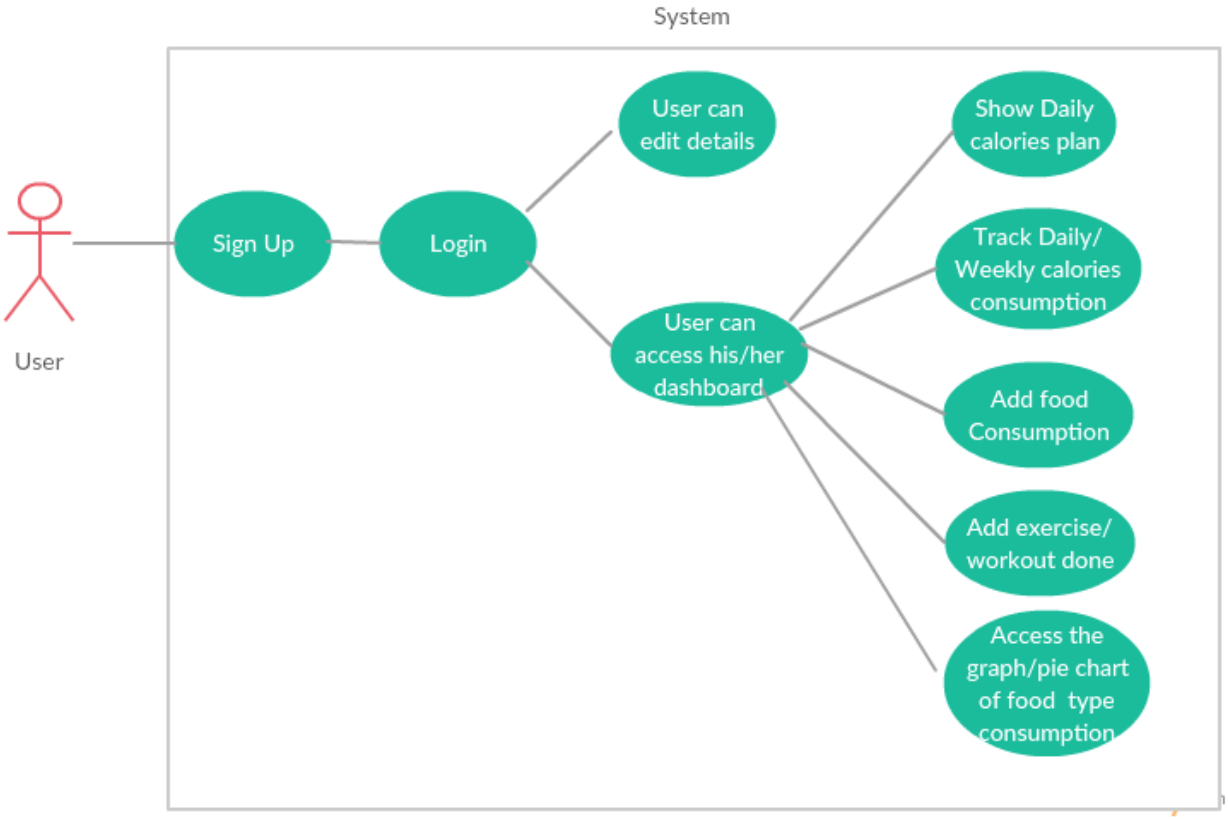
Architecture diagram



Sequence Diagram



Use case Diagram



4.3 Testing:

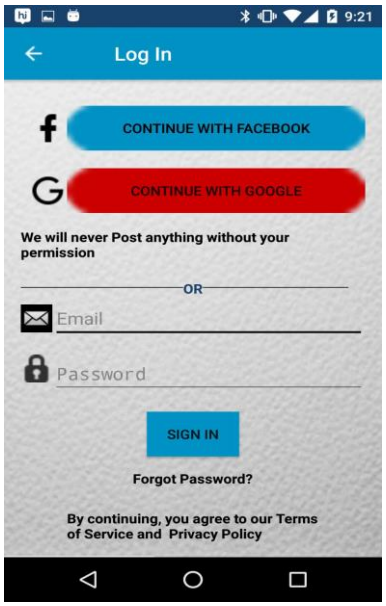
Unit test cases

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 verification due to wrong password	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	pass
10	Image scan API	If user provide Image URL from online	Will get respective Image classifier	Pass
10	Image scan API	If user provide Image URL from online	Will get respective Image classifier	Pass
11	Calorie Count	When ever user enters any meal/exercise, the calories must be deducted from the target count in the home page dynamically.	The target calorie count is reduced and is shown to the user in the home page.	Pass
12	BMI target	When ever user is registering in the application, user provides the height, weight, goal etc. Based on those inputs we calculate the intake the user needs to take daily.	The input data is captured and based on the logic written in java the target intake goal is displayed to the user.	Pass
13	Profile	If the user wants to change the weight/height/ goal, it can be updated from profile page.	When the user updates any of the details, the target intake must be updated dynamically from the home page.	Pass
14	Capture	While entering the meal user has a facility to **capture the food** along with the search option and manual entry option.	The respective food is recognized and returns with the calorie count.	Pass
15	Historical Data	By selecting any of the previous date user can update and view the calorie intake that has been recorded.	user can enter the data for any date prior to the current date.	Pass
16	Daily increment	User has an option to view the dashboard for his daily intake.	The dashboard option shows a pie chart and a bar graph for the daily count which gives a clear understanding of the food intake	Pass
17	Weekly Progress	By selecting the progress button, user can follow the weekly progress by viewing a graph curve.	The graph curve for the weekly progress is successfully dipslayed to the user.	Pass
18	Floating Fly	Fitness chef provides user with an interactive UI and animations inside the application.	If the user clicks on the fly option, an animation appears showing all the options in a one touch go.	Pass

4.4Deployment

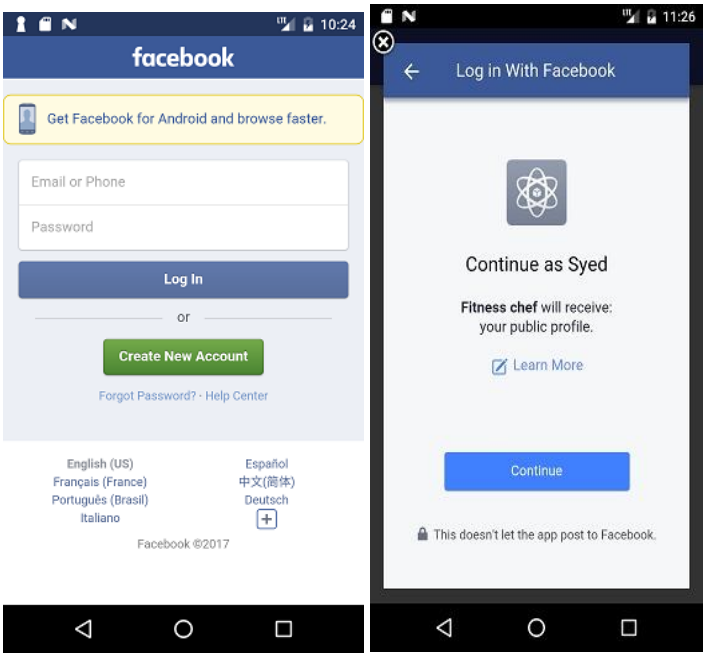
Main Page

Login Page



Signup page

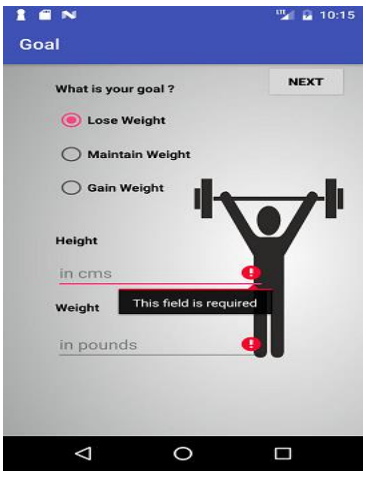
Oauth Facebook



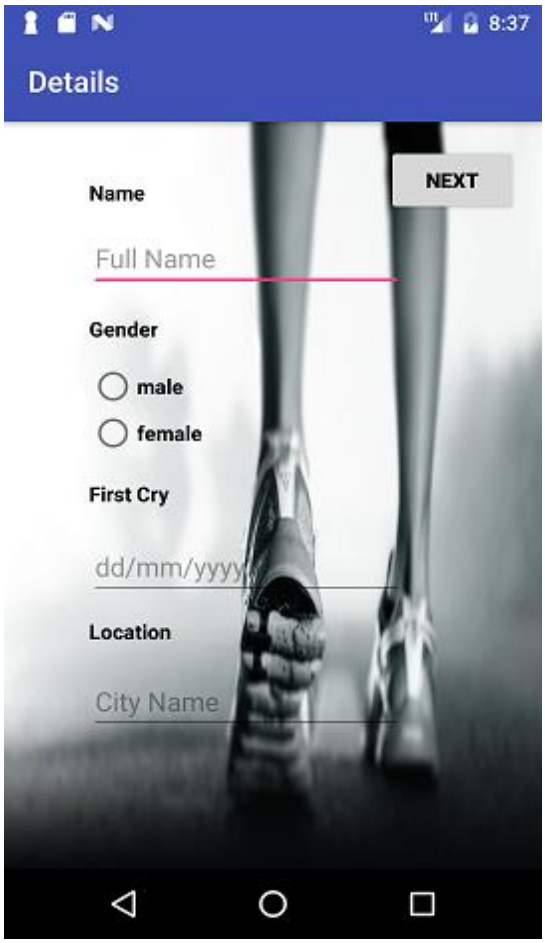
Goal Page

Goal Page Validations:

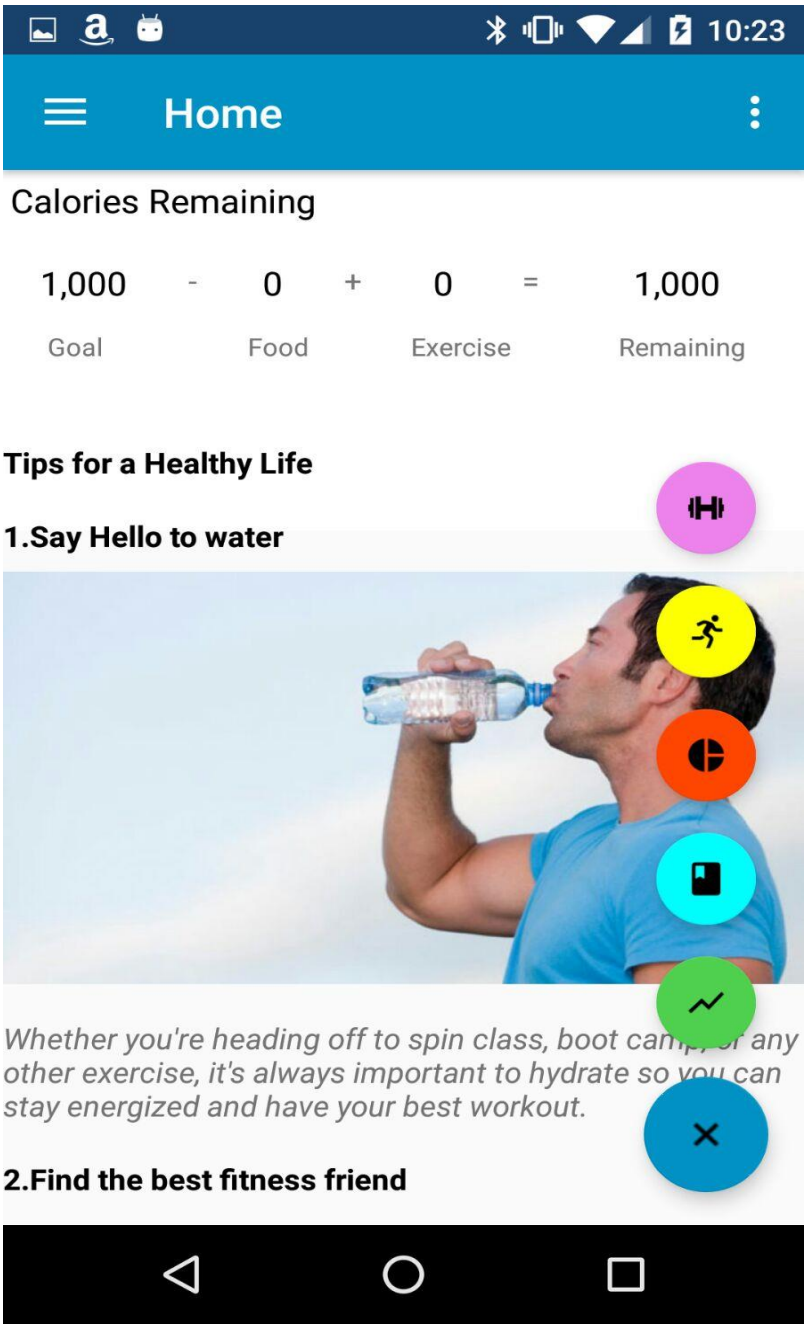
- **When user leaves the fields empty**



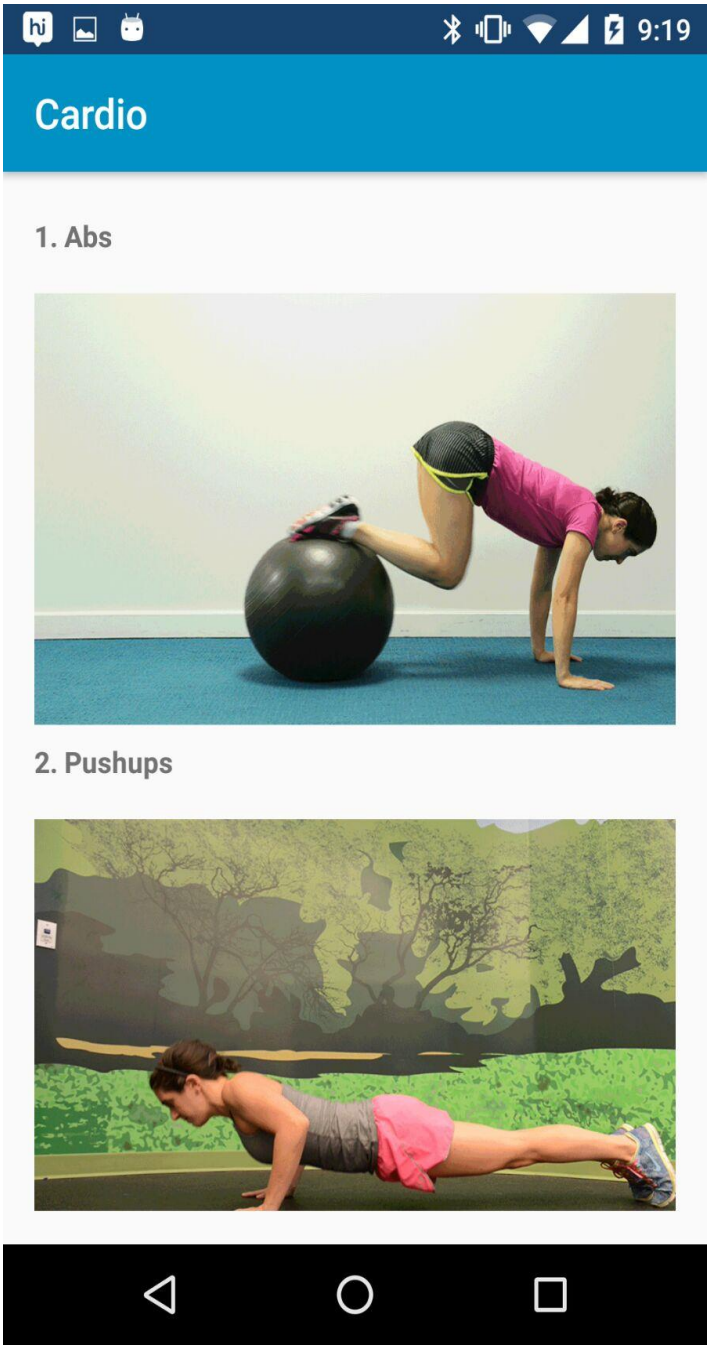
Details page



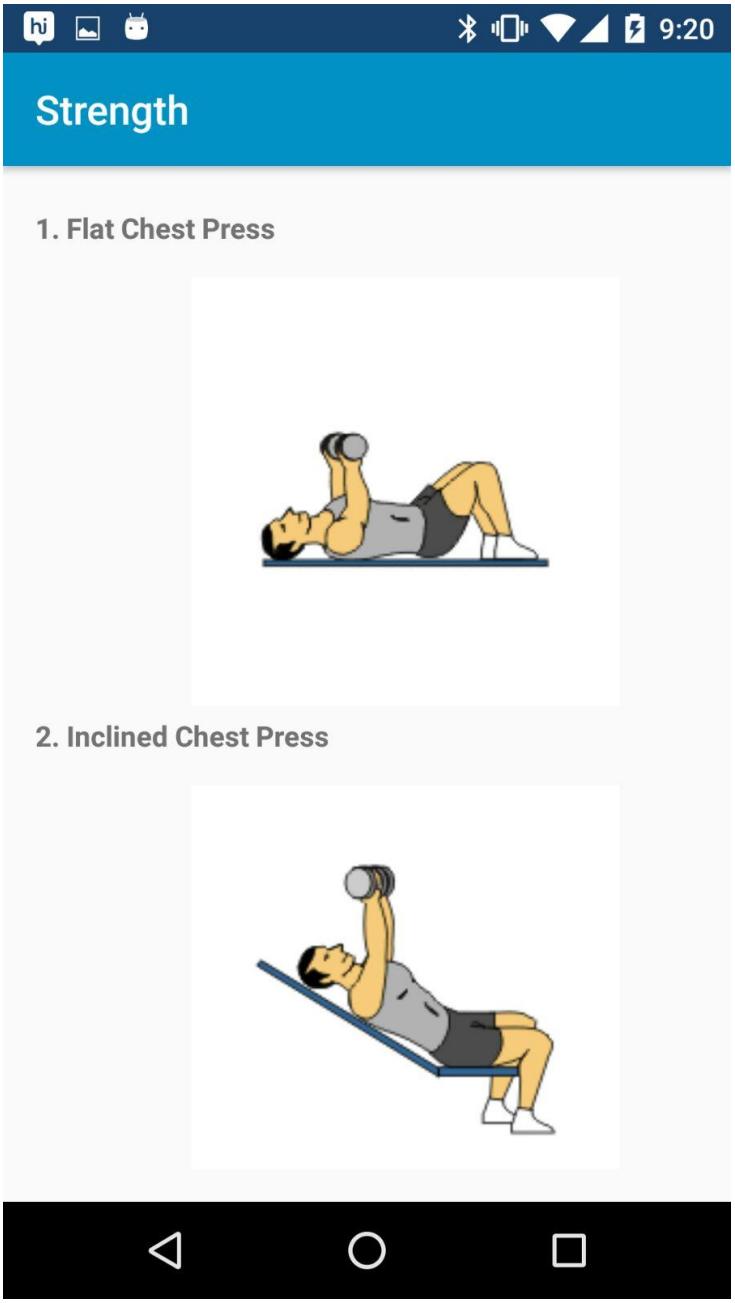
4.4.3 Home page:



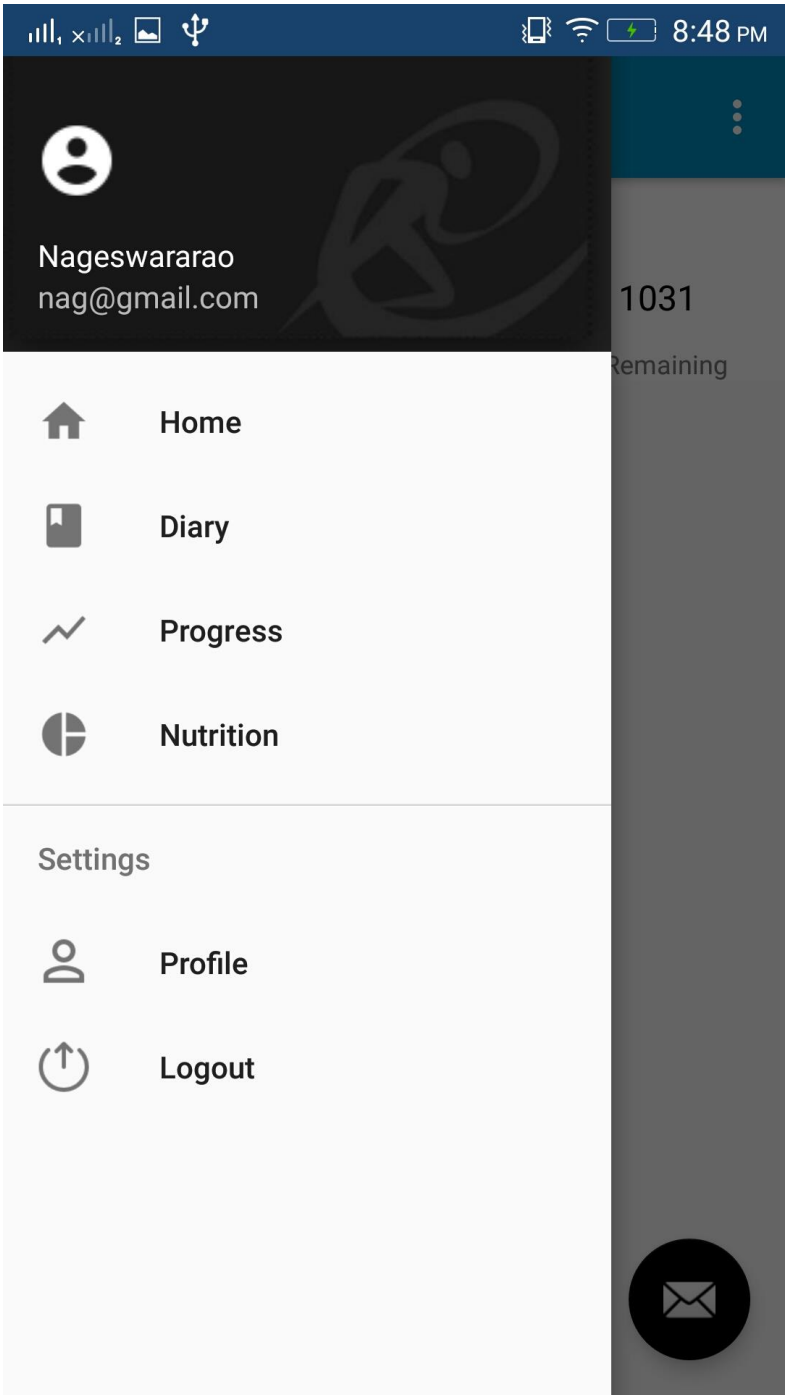
Cardio tips Page:



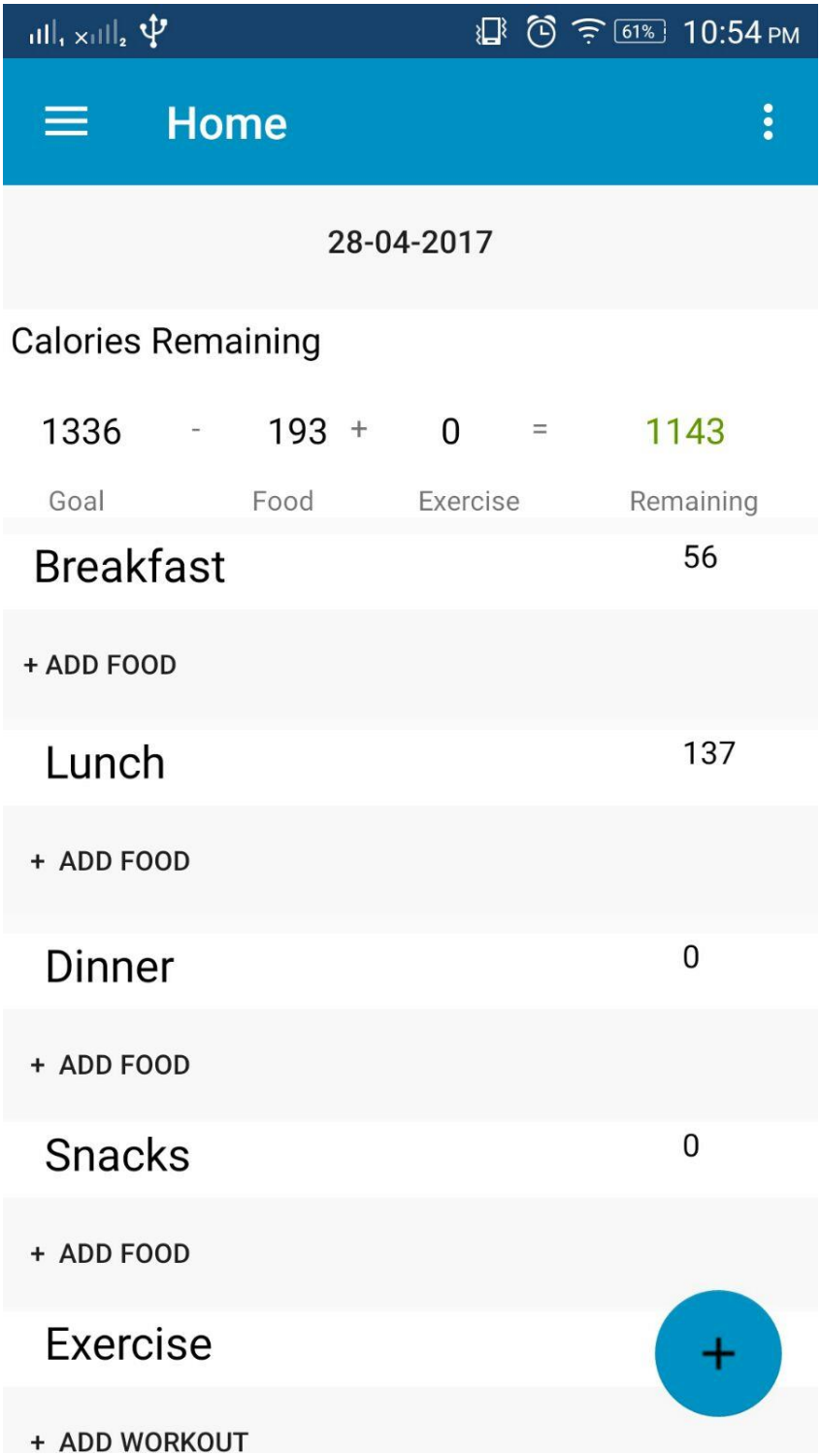
Strength Tips Page:-



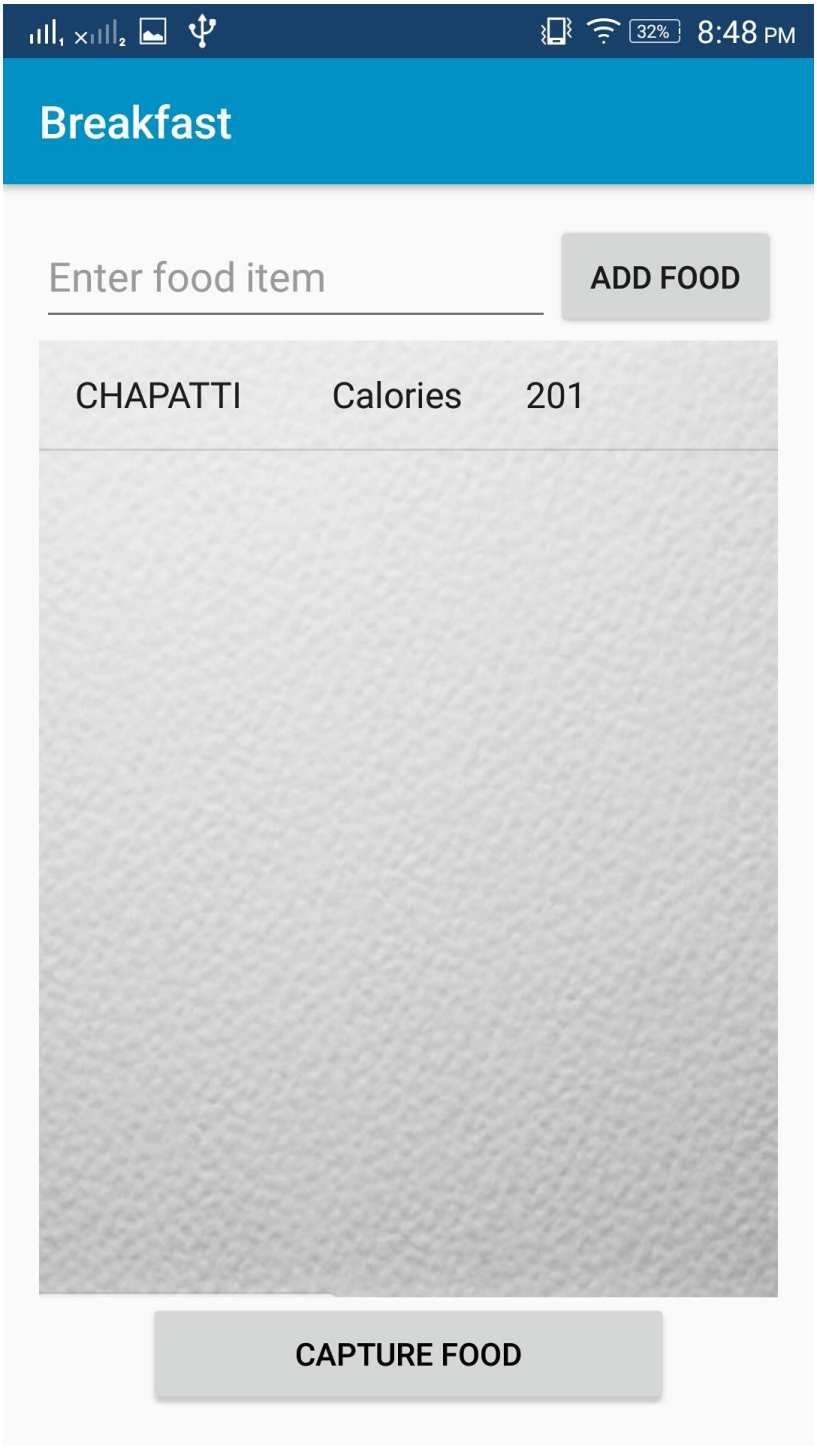
Navigation List :-

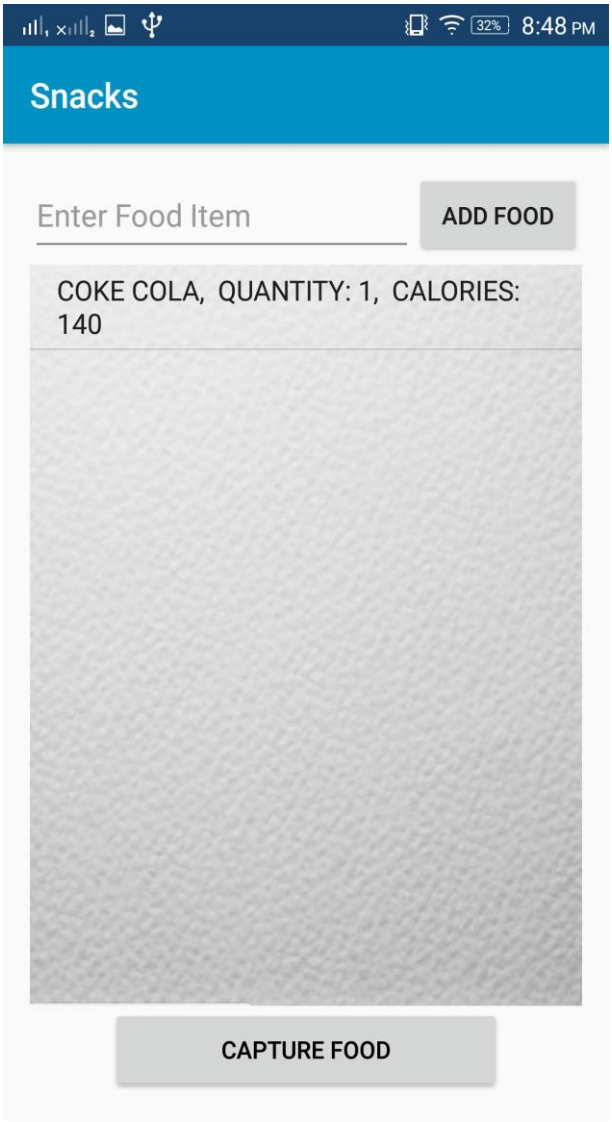


Diary Page: User can enter his food items what he ate from here



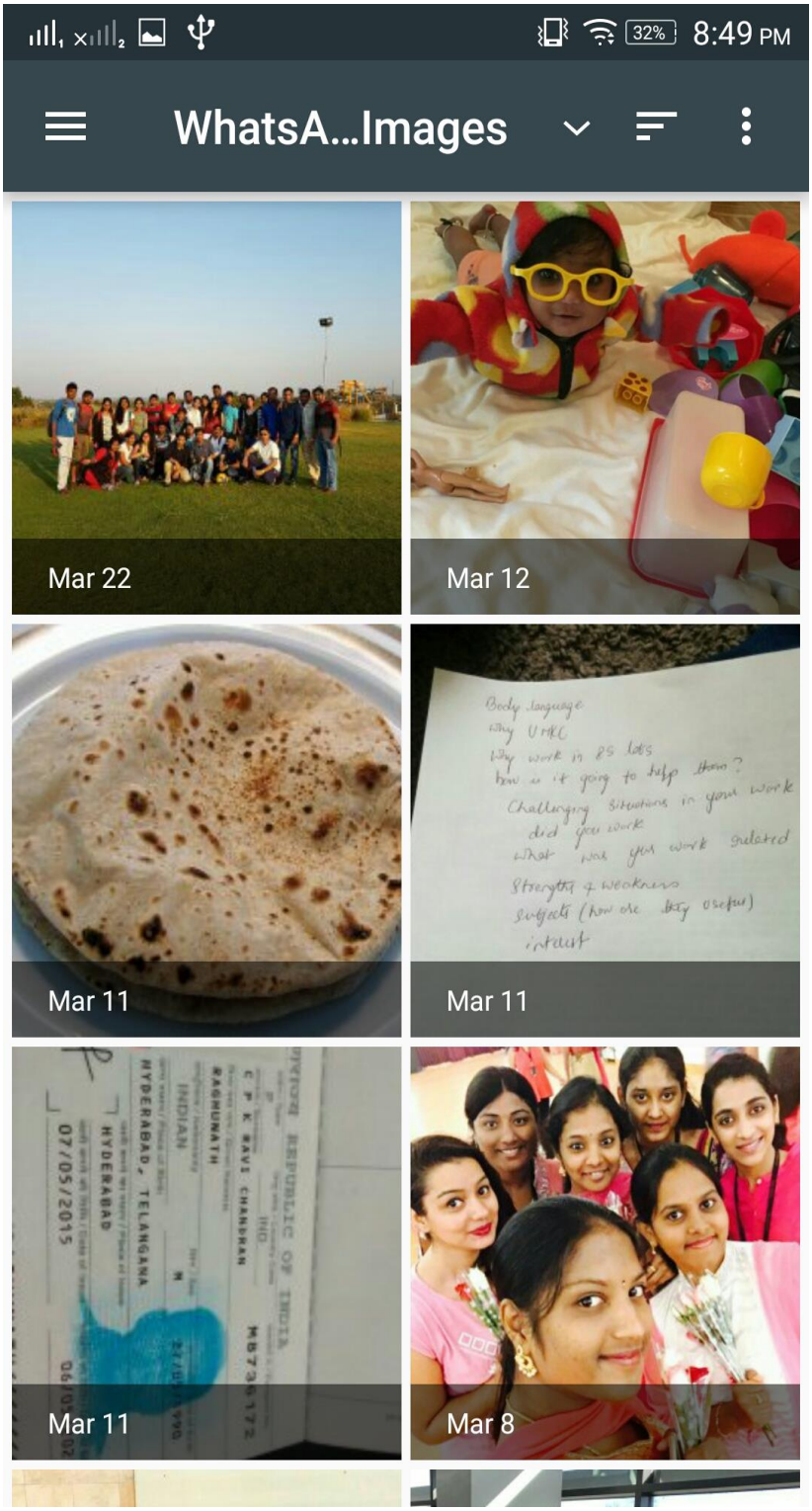
User can add food item from search list or can scan the food item to add



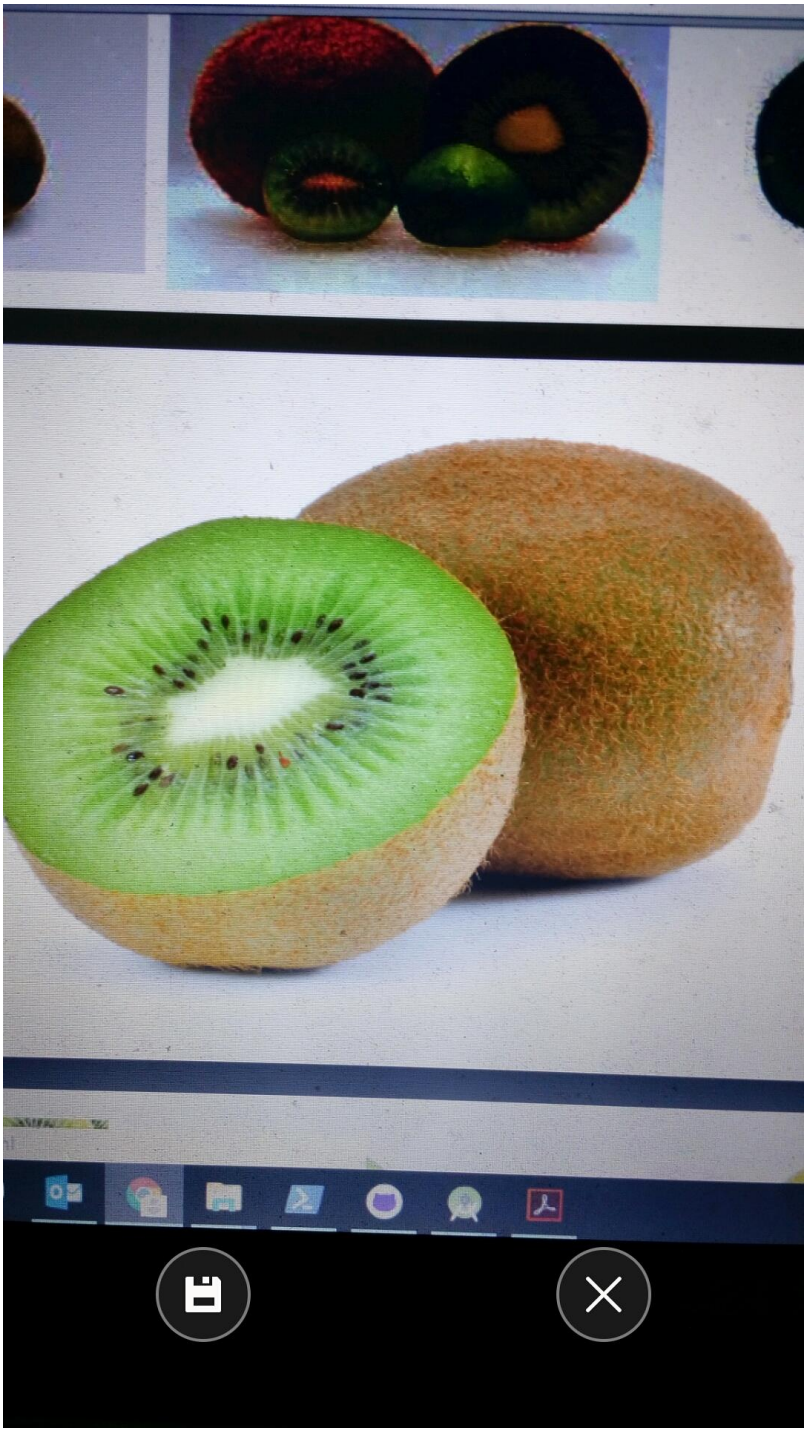

8:48 PM
Snacks
Enter Food Item
ADD FOOD
COKE COLA, QUANTITY: 1, CALORIES: 140
CAPTURE FOOD


8:48 PM
Exercise
Exercise Name
ADD WORKOUT

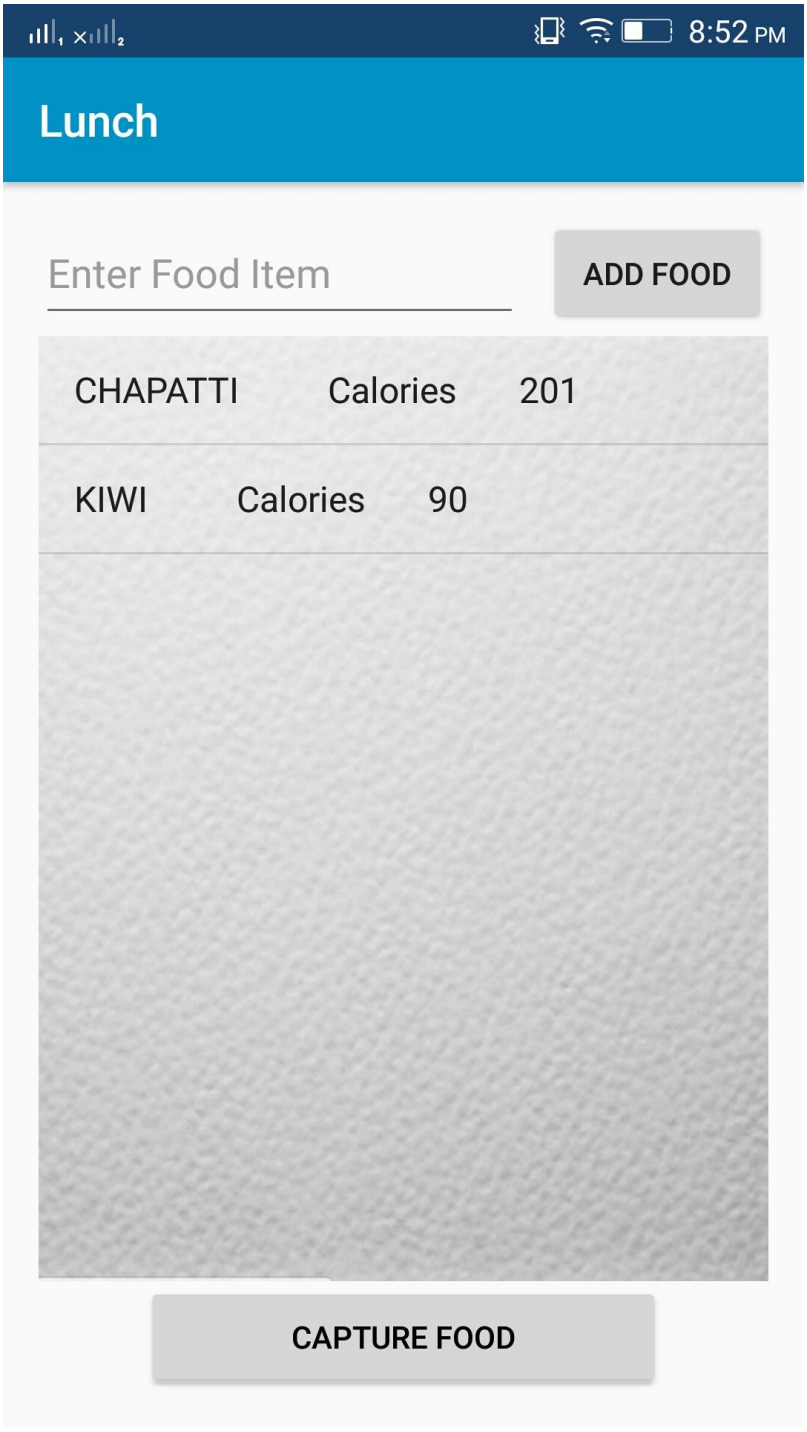
User can add food item from camera or Gallery


8:49 PM
WhatsA...Images
Mar 22
Mar 12
Mar 11
Mar 11
Mar 11
Mar 8

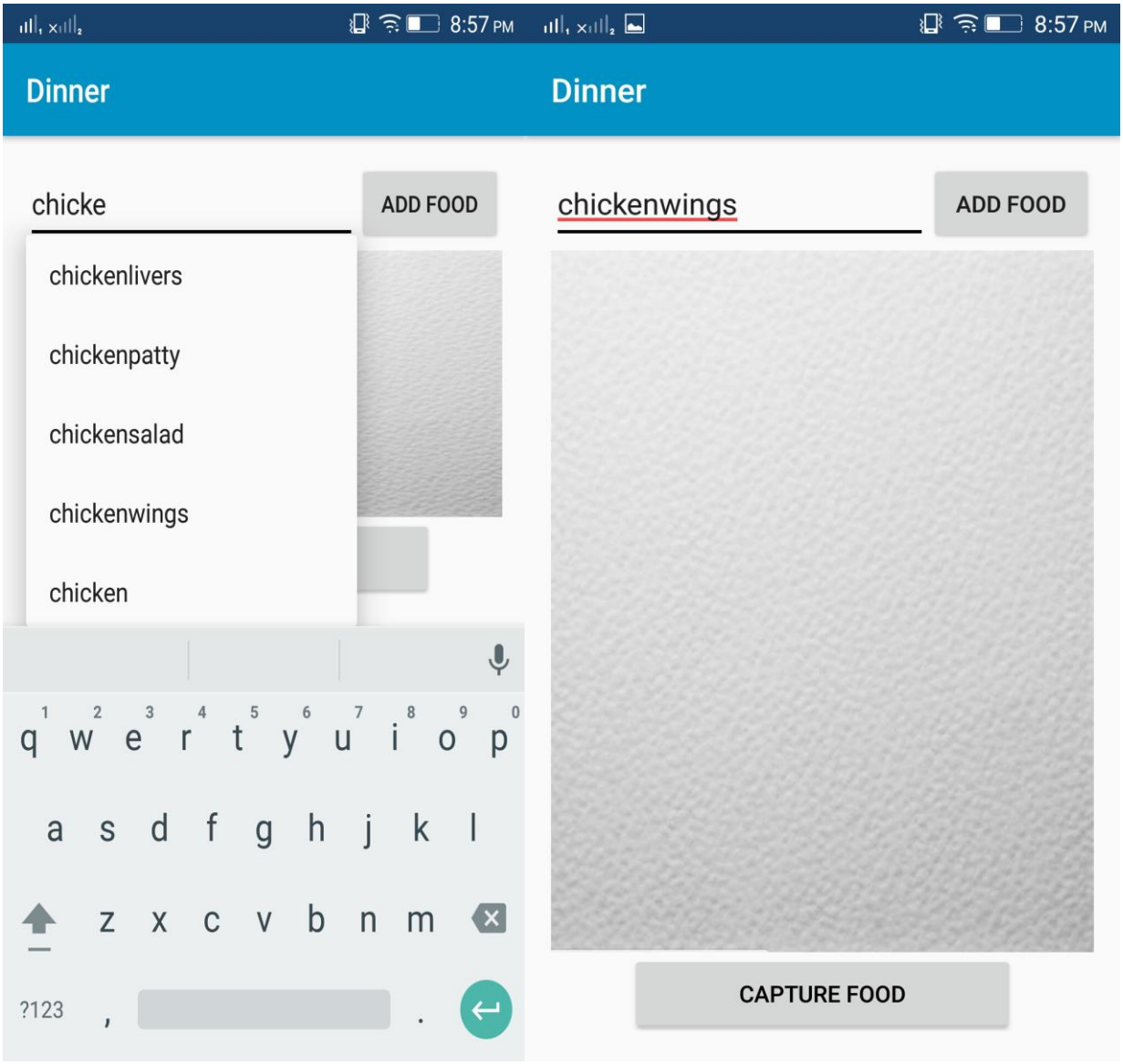
Taking photo of Kiwi fruit to add

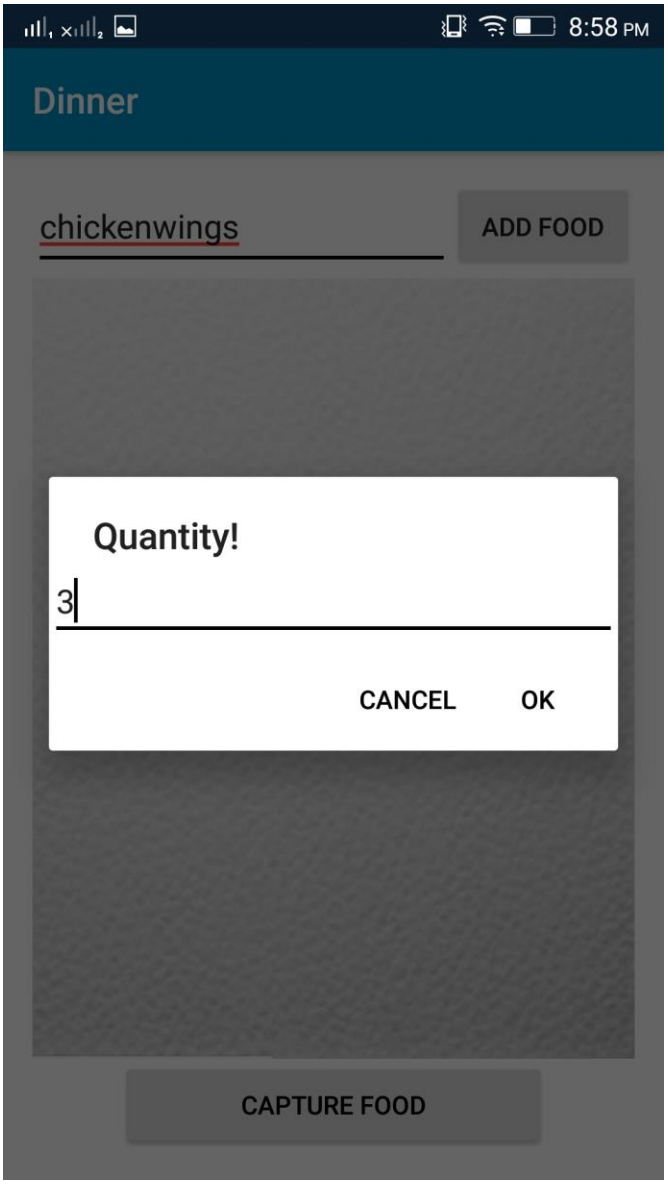


After adding food item you can see food item added with name and no of calories of that item



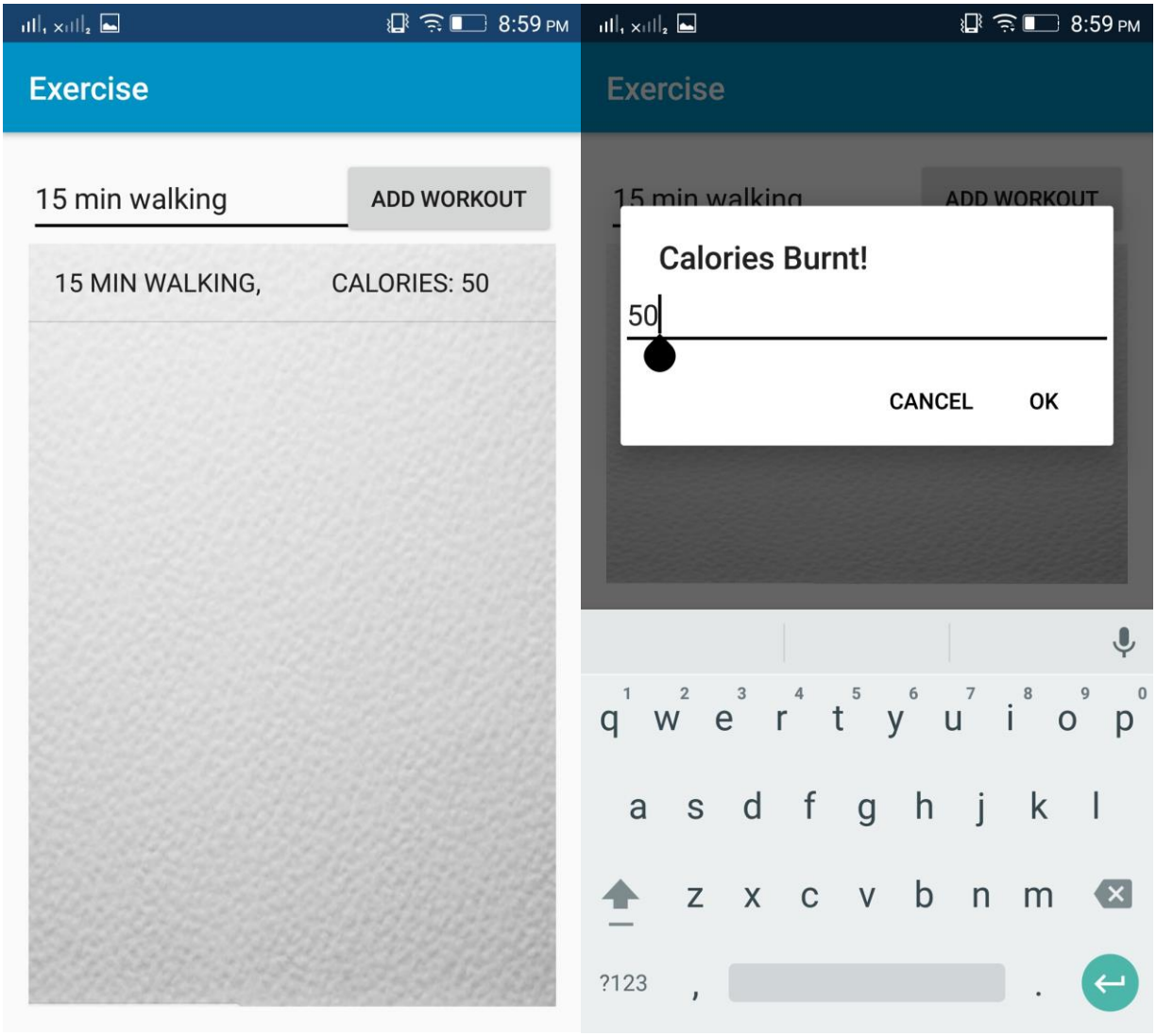
User can enter manually from food database



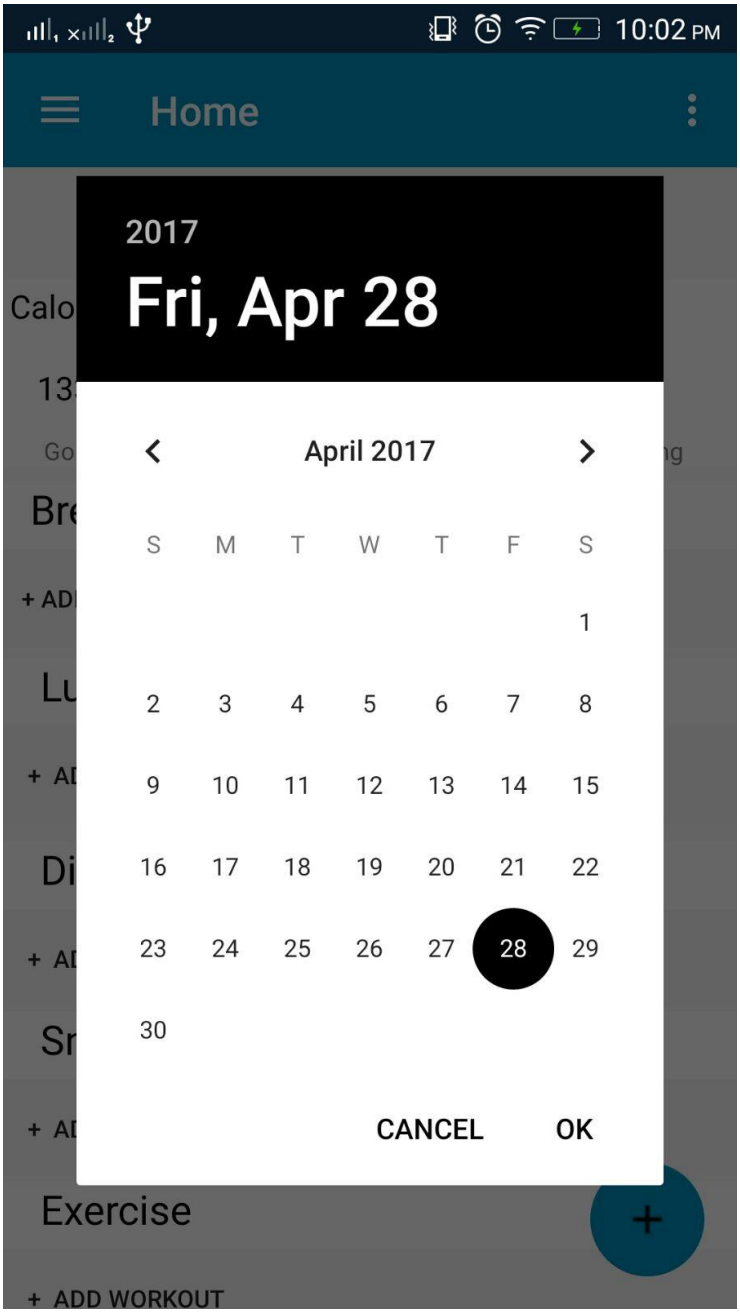

8:58 PM
Dinner
chickenwings
ADD FOOD
Quantity!
3
CANCEL
OK
CAPTURE FOOD

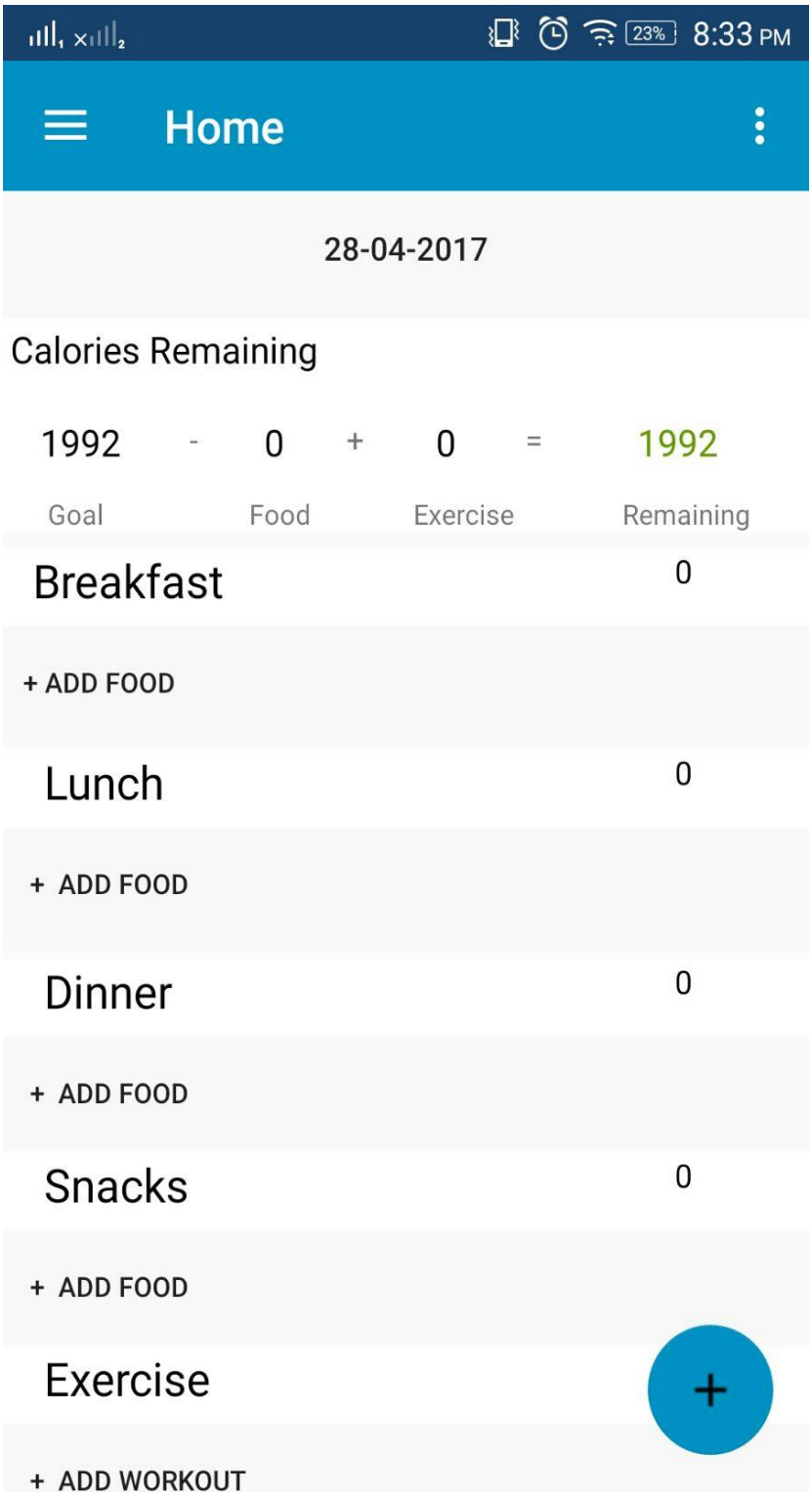

8:58 PM
Dinner
chickenwings
ADD FOOD
CHICKENWINGS, QUANTITY: 3,
CALORIES: 3240
CAPTURE FOOD

User can even add exercise workout

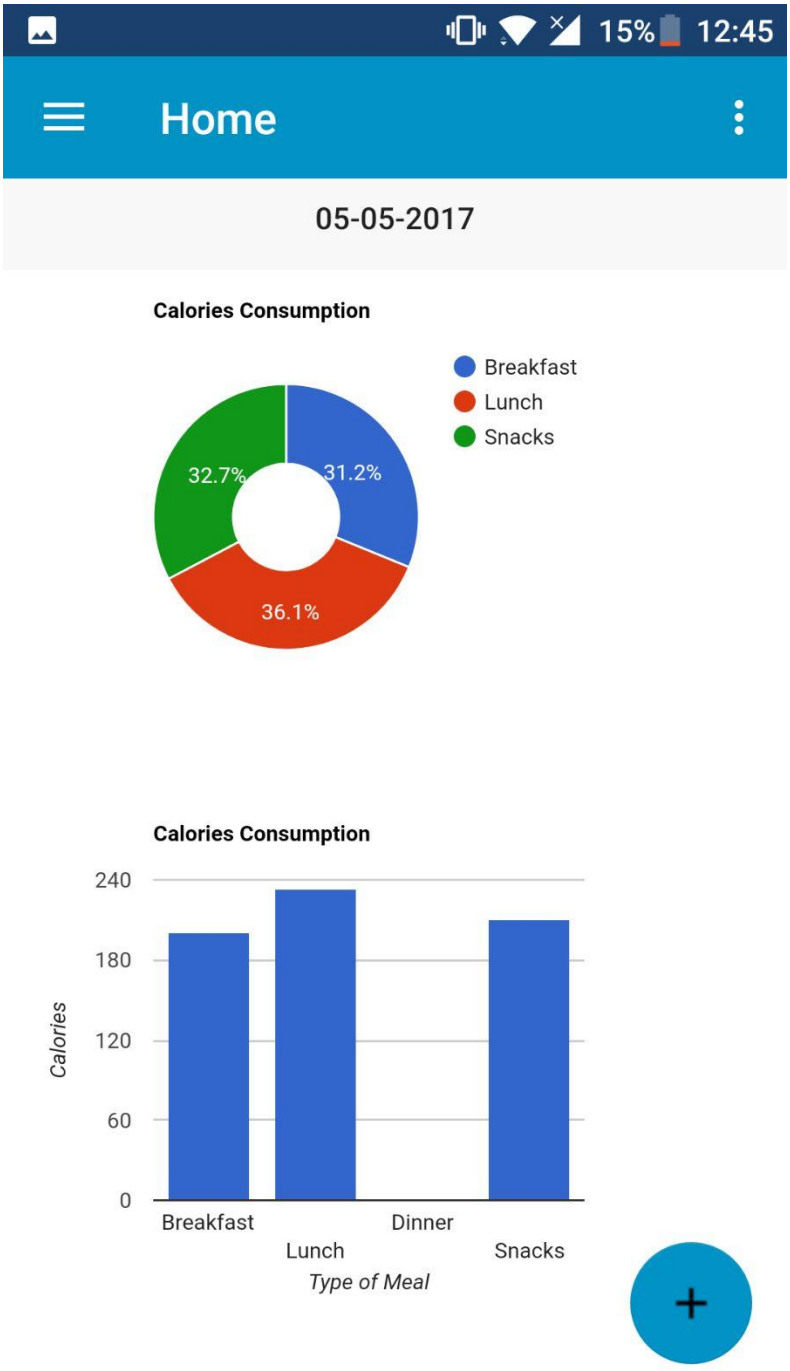


User can even change the date and can add the food items if he forgot to add

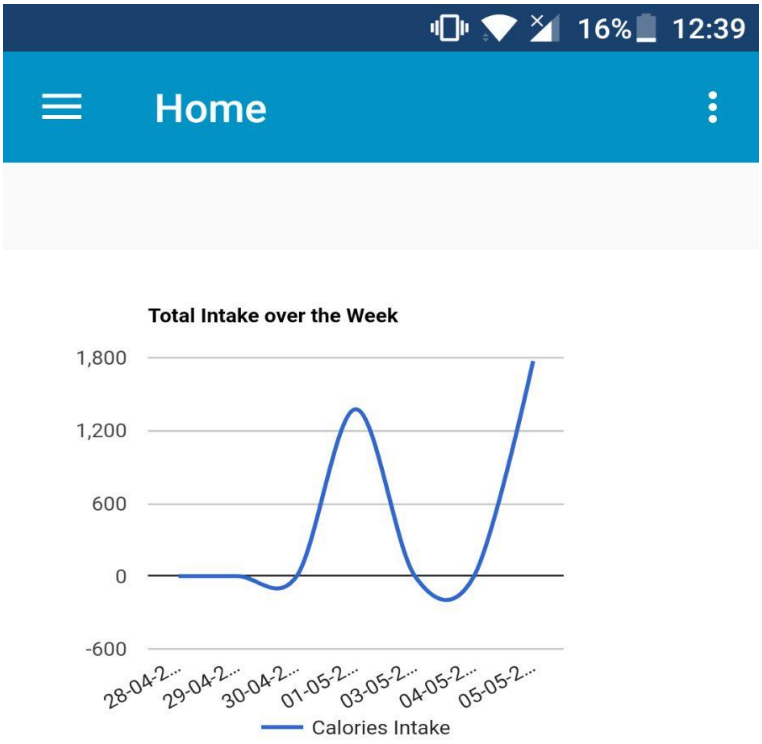



23% 8:33 PM
Home
28-04-2017
Calories Remaining
1992 - 0 + 0 = 1992
Goal Food Exercise Remaining
Breakfast 0
+ ADD FOOD
Lunch 0
+ ADD FOOD
Dinner 0
+ ADD FOOD
Snacks 0
+ ADD FOOD
Exercise
+ ADD WORKOUT

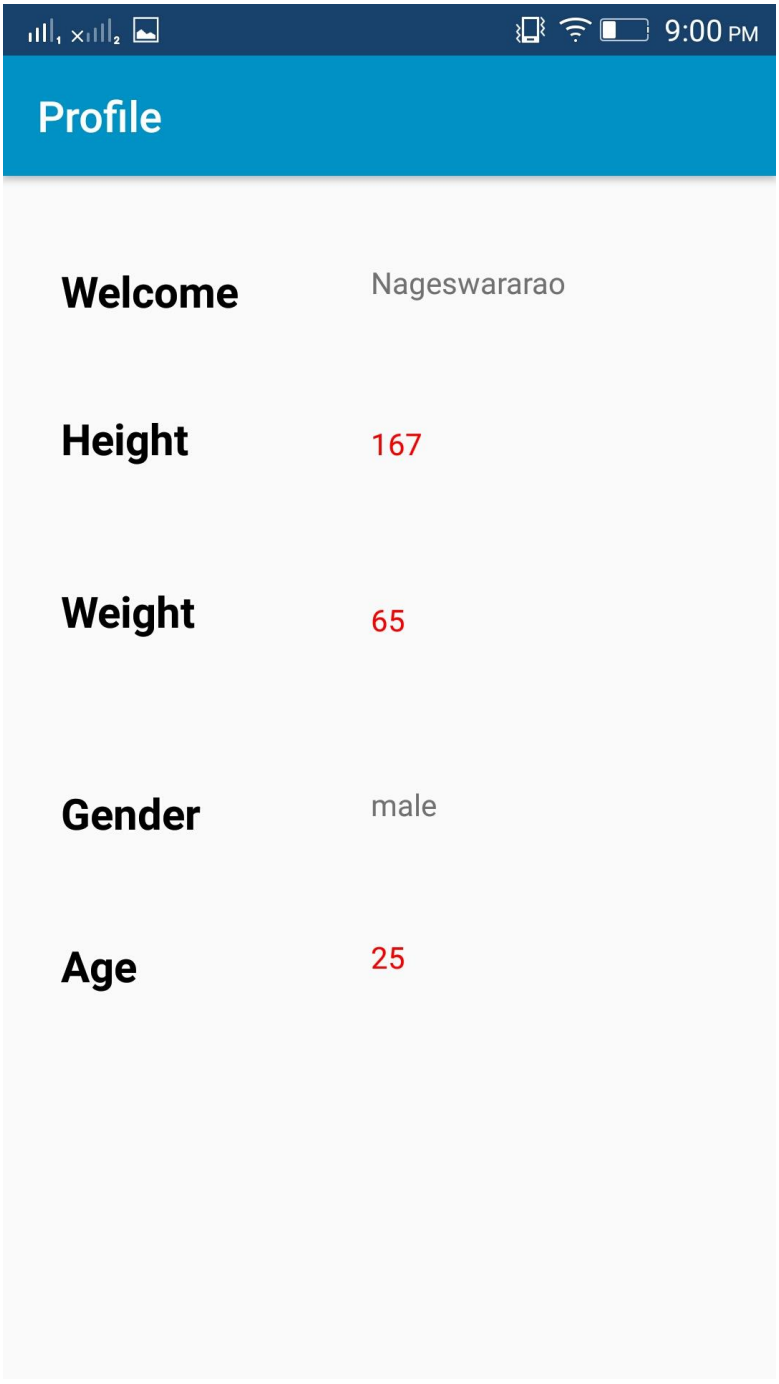
Dashboard Page: user even can see how much he ate per meal visually



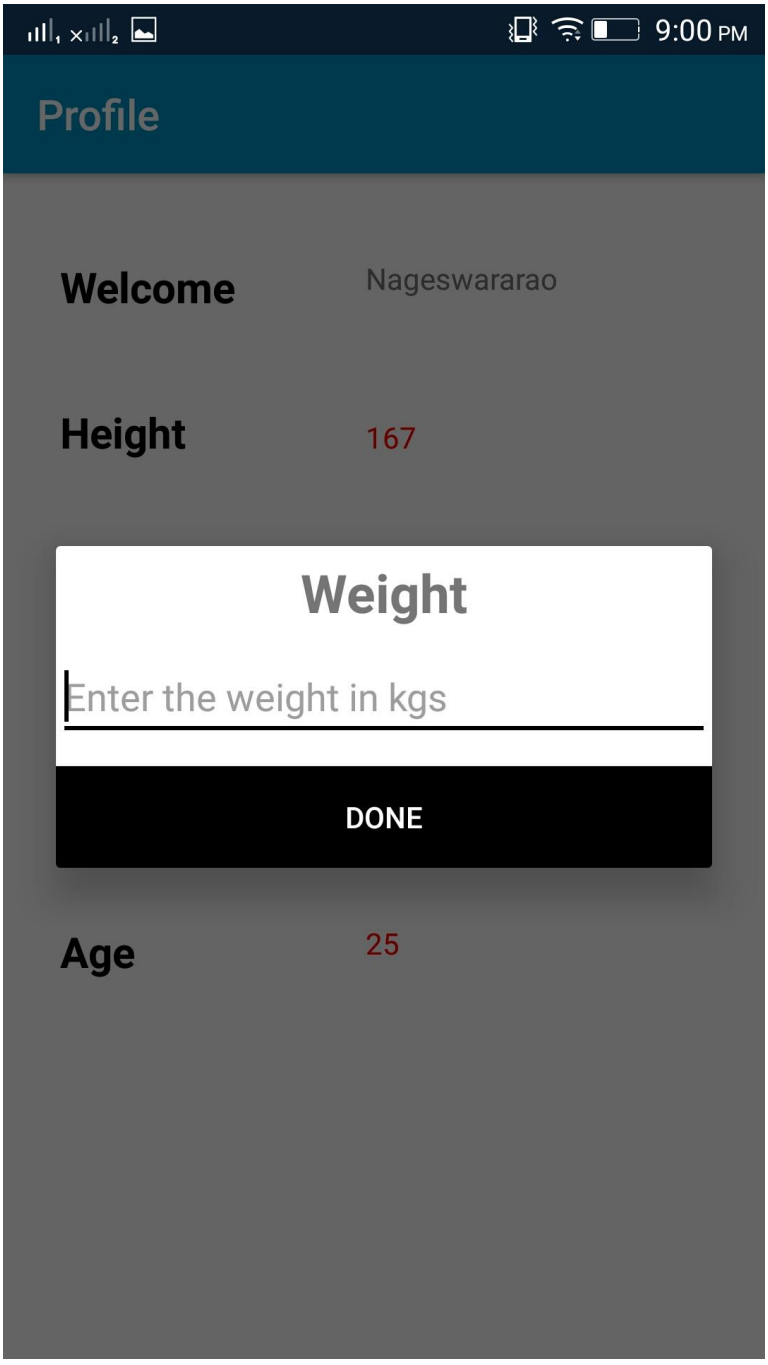
User can check the daily progress of each day intake in line graph

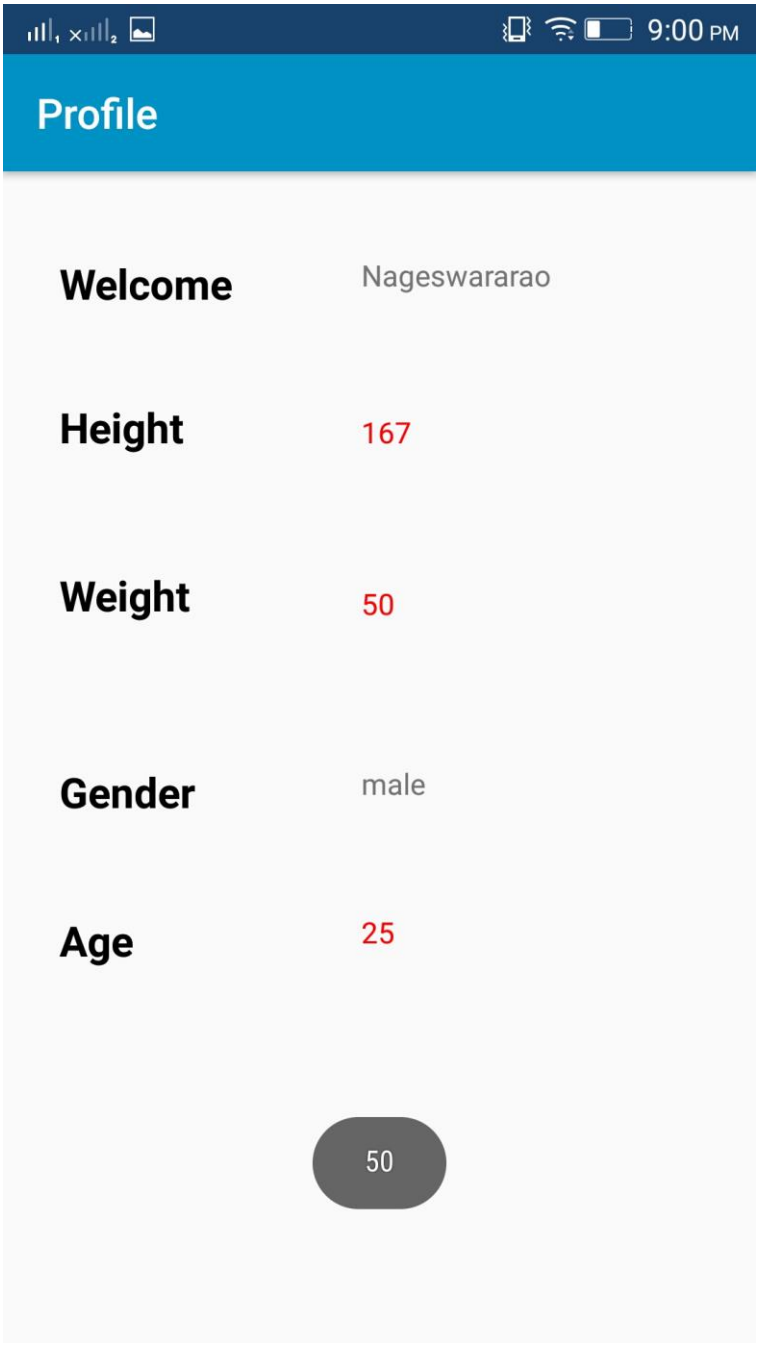


Profile page:



User can update the profile page based on that no of calories intake will change




9:00 PM
Profile
Welcome
Nageswararao
Height
167
Weight
50
Gender
male
Age
25
50

Technologies used:

Presentation Slides:-

https://drive.google.com/file/d/0B9_MGoHQBV3iWWtqcy1uMHdfTEE/view

4.4.4 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

4.4.5 YouTube link:

Demo of the project is present in following link.

https://www.youtube.com/watch?v=dpub2RgPROc

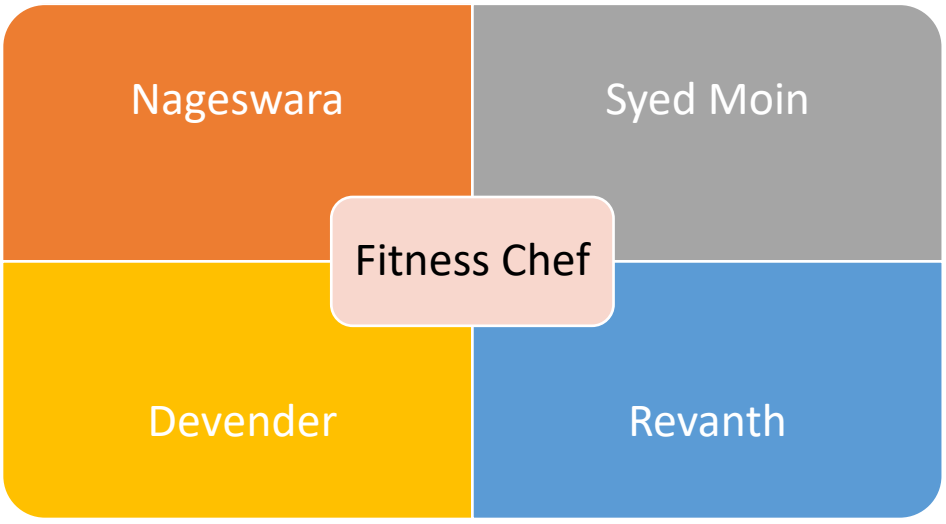
4.5Project Management

4.5.1 Implementation status report

4.5.1.1 Work completed

- **Description**
  - Fitness chef android application
  - Login and Registration Page including end to end validations
  - Calculation of target intake using the user inputs
  - Dynamically updating calorie counter based on the addition
  - Food recognition using a camera and displaying the respective calories
  - Interactive and responsive graphs for daily, weekly improvement
  - Cardio and strength exercise guide for beginners
  - Privilege to view/update the historical data of any previous day is achieved
  - Animations using floating button for rich UI experience

4.5.2.2 Contribution



4. Bibliography

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https://developers.facebook.com/

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

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

http://stackoverflow.com/