

# Smart Eating

## **Final Report**

Project group 10

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## Contents

I. Introduction.....	3
II. Objectives.....	3
III. Project Deployment & Project management .....	4
Project Deployment - User Manual:.....	4
Project Management Report: .....	19
Final Project Evaluation: .....	24
Existing Services/Rest API: .....	24
Management Structure: .....	25
Project Contribution: .....	26
IV. Project Design: .....	28
Wireframes .....	28
Architecture Diagram: .....	41
UML Class Diagram: .....	42
UML Sequence Diagram: .....	43
V. Project Deployment: .....	44
Android Application:.....	44
Web Application Deployment: .....	54
Server Implementation: .....	57
VI. Presentation Slides: .....	58
VII. GITHUB URL: .....	60
VIII. YouTube URL:.....	60
IX. Bibliography:.....	61

## I. Introduction

Smart Eating is an android/web application which is used to find the recipes and search restaurants based on his choice. The user can get a list of recipes based on the keyword he gives and then by selecting a recipe, he can get a list of ingredients which are used to make a recipe and the process of preparing it.

The list of restaurants is obtained based on the location and food item given by the user. From the resultant restaurants, user can get menu and reviews. The user can also add his personal review.

A person might have allergic reaction towards few food items like peanuts, milk, eggs, etc. and he must be very careful while consuming the food. Hence, this application provides the user to add items which are allergic to user so that the application can highlight the items which are allergic to him. Thus, the user can differentiate what to eat and what not to.

The application smart eating also provides an option for translating the text for travelling users so that they can know each item in detail.

## II. Objectives

The main goal of the project is to develop a smart eating system which initially allows the user to find a restaurant by selecting a location, range of miles within which the restaurant should be searched, type of the restaurant which can be selected from a dropdown menu containing the details like Mexican, Chinese, Italian, Indian. Then the user can select all the allergies he has towards food and also the diseases he has.

A list of restaurants is populated based on the search criteria. Menu of the selected restaurant is then displayed which contains the details of all the food items and also it will suggest the user whether the food item contains the ingredients that are allergic to user and also if the item is healthy or not based on his diseases.

### III. Project Deployment & Project management

#### Project Deployment - User Manual:

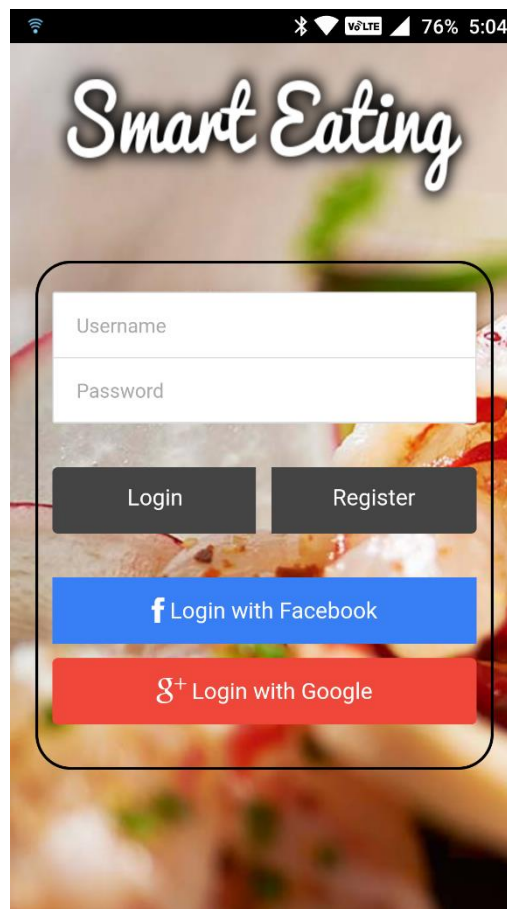
##### User Manual Contents:

1. How to Start Smart Eating Application:
2. User Registration
3. Login to the Smart Eating application:
4. Home Page
5. Search Recipe
6. Manage allergies
7. Search Restaurant.
  - I. Get Menu
  - II. Get Review
8. Translate
8. Change Password:
9. About us:

## 1. How to Start Smart Eating Application:

To start the Smart Eating application please follow the below mentioned steps.

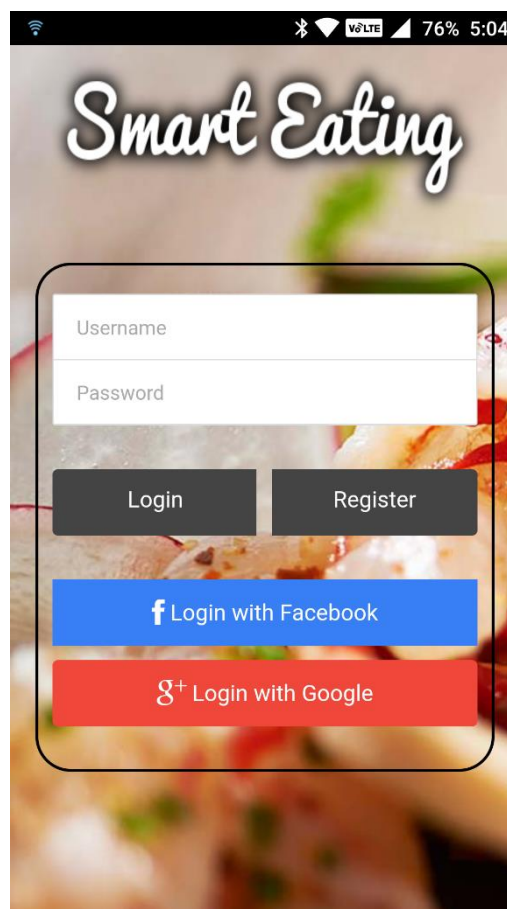
- a. Click on the **Smart Eating icon** on application menu.
- b. After clicking the Smart eating icon, the application will starts and Login page will display.
- c. Login page contains below options.
  - i. Login
  - ii. Register
  - iii. Login with Facebook
  - iv. Login with Google



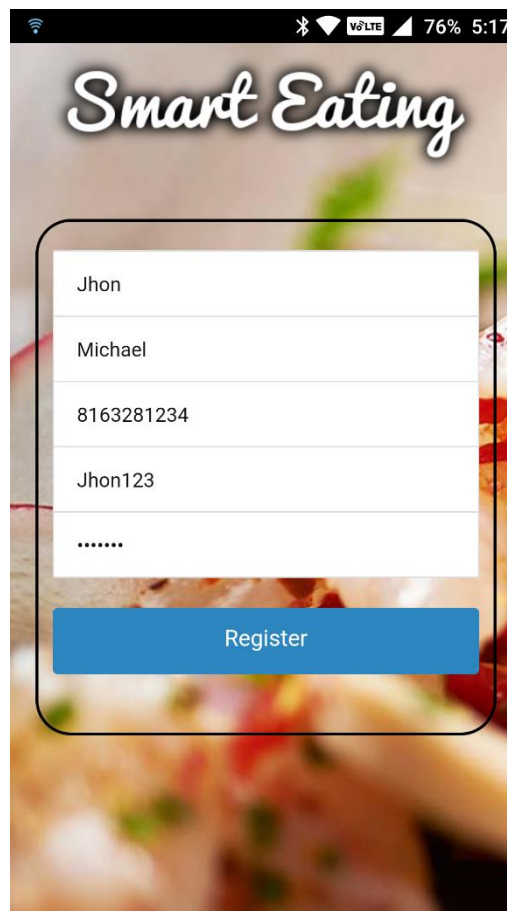
## 2. User Registration

If the user doesn't have an account he/she must Register the steps are shown below.

- a. Start the **Smart Eating** application.
- b. The login page will have displayed.
- c. Click on the **Register button** on the page.



- d. On click the Registration page will displayed
- e. Enter the following details in the register page and press Register Confirmation button in Register page.
  - i. First Name
  - ii. Last Name
  - iii. Mobile Number
  - iv. User Name
  - v. Password



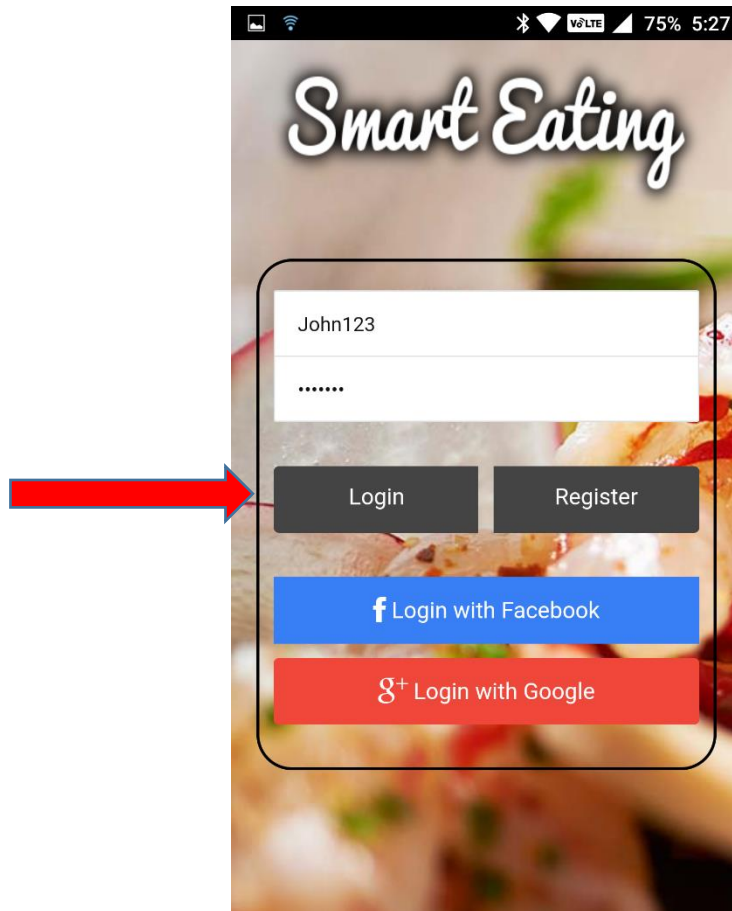
The image shows a mobile application interface for 'Smart Eating'. The title 'Smart Eating' is displayed in a white, cursive font at the top. Below the title is a registration form with five input fields: 'First Name' (containing 'Jhon'), 'Last Name' (containing 'Michael'), 'Mobile Number' (containing '8163281234'), 'User Name' (containing 'Jhon123'), and 'Password' (containing seven dots). A blue 'Register' button is located at the bottom of the form. A red arrow points to the right side of the form, indicating the next step in the process.

- f. The application will store the user information and displays the feedback to the User whether it was Successful or Not.

### 3. Login to the Smart Eating application:

To login in to our Smart Eating application follow the below steps.

1. Start the Smart Eating application. And it will display the login page.
2. Enter the valid Username and Password in the fields and press **Login button**.



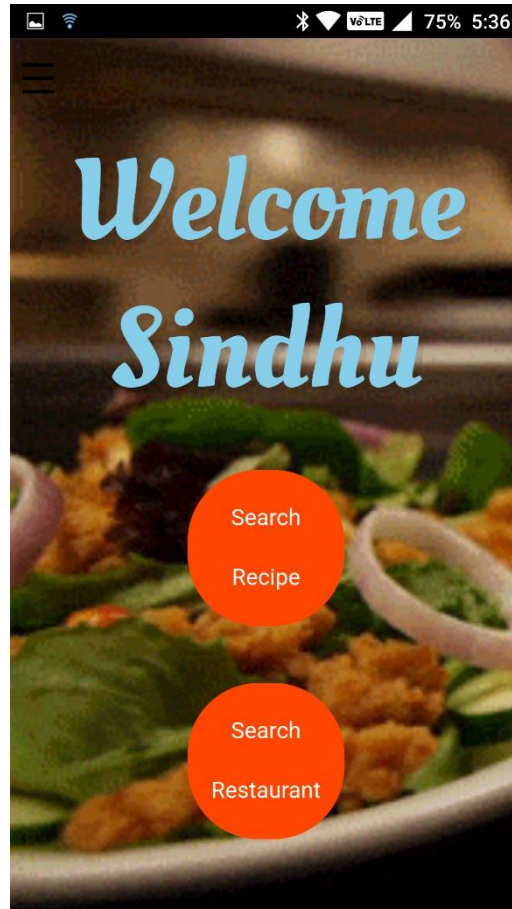
3. It will validate the User information.

4. If the given information is correct the login successful popup message will display.



## 4. Home Page

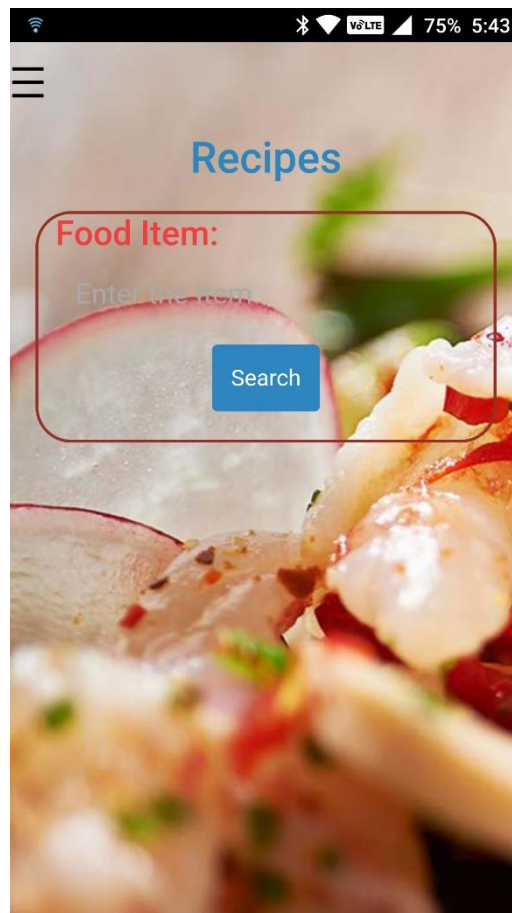
After successful login It will redirect to Home page which contains all the different features.



## 5. Search Recipe

To search the recipe, follow the below steps.

- a. Start the Smart Eating application.
- b. Login into the application. After successful login, the home page will be displayed.
- c. Click on the **Search Recipe** icon. On clicking the button, it will display Recipes page.

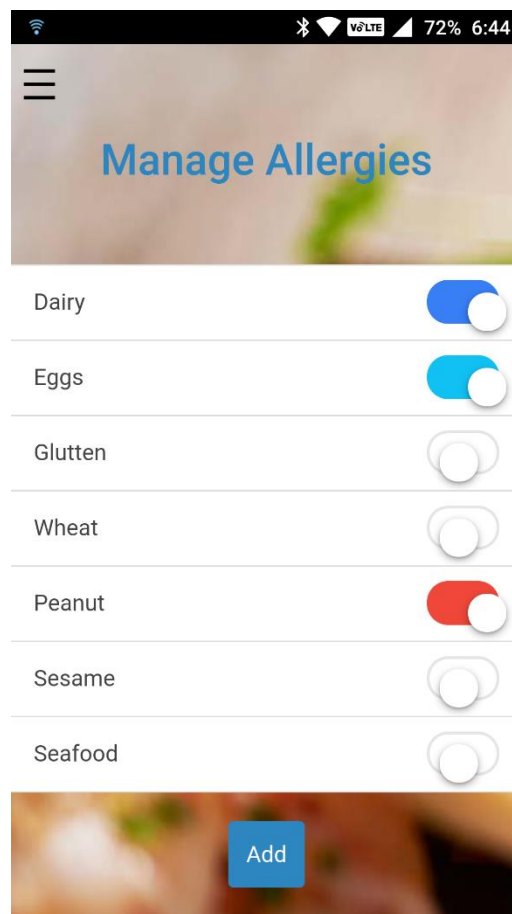


- d. The page will have the Food item field where you can enter the food item name which you want to know the ingredients.
- e. On clicking the Search button all the search results will displayed containing the items names.

## 6. Manage allergies

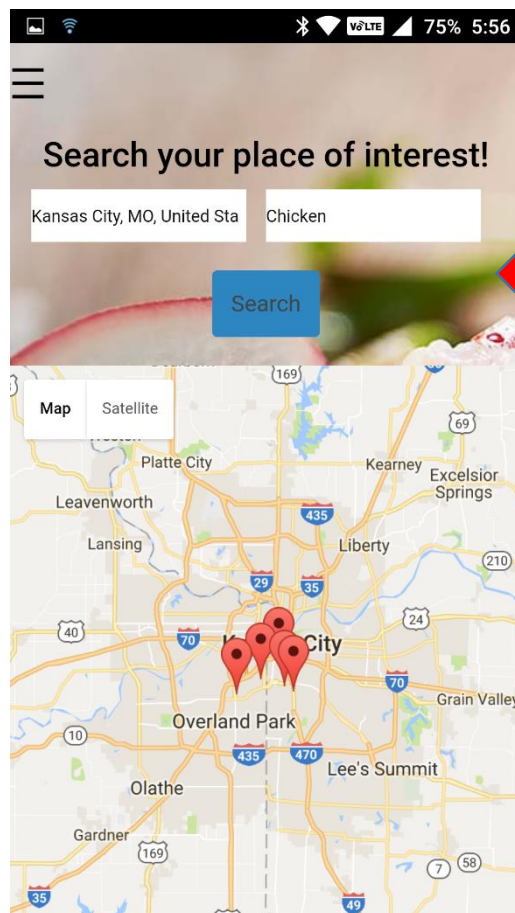
To access the allergy information, follow these steps.

- a. Open the Smart Eating application and login with the valid credentials
- b. On click of **login button** home page will displayed
- c. Then click on the **menu button**
- d. it will show the side menu it contains the Allergies link
- e. On clicking that link you will redirect to the Manage Allergies page



## 7. Search Restaurant.

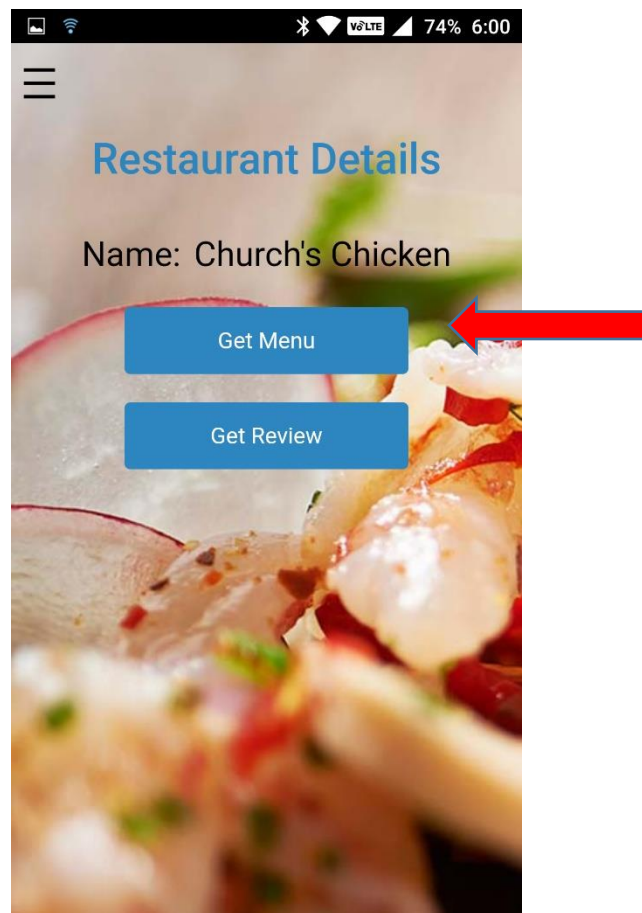
- a. To Search Restaurant please follow the below steps.
- b. Start the Smart Eating application.
- c. Login to the application with valid credentials. On successful login Homepage will displayed.
- d. Click on the Search Restaurant button on this page. On clicking it will open the Search Restaurant page.
- e. Enter the place where you want to search and item name click Search button it will display the top 5 restaurants near to you.



## I. Get Menu

To get the menu follow the below steps.

- a. Open the application and login with the valid credentials
- b. On click of the login button it will displays the home page and press the Search Restaurant button
- c. It will displays the another page with place and food item. Enter the information and press the Search button

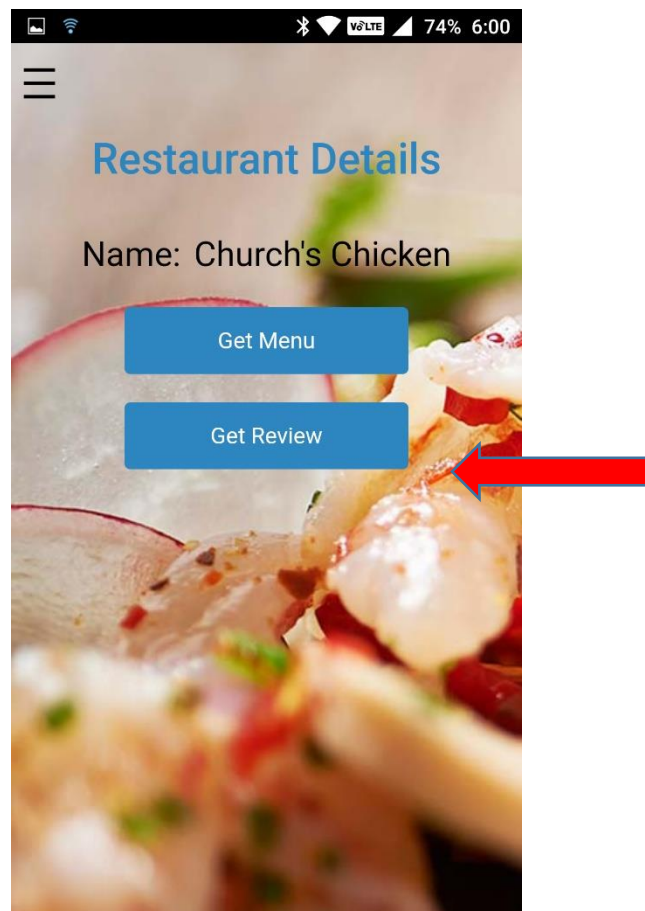


- d. Click on the Get Menu button to get the menu of the above-mentioned restaurant.
- e. On click of button all the menu will displayed.

## II. Get Review

To Get the review of the restaurant follow the these steps

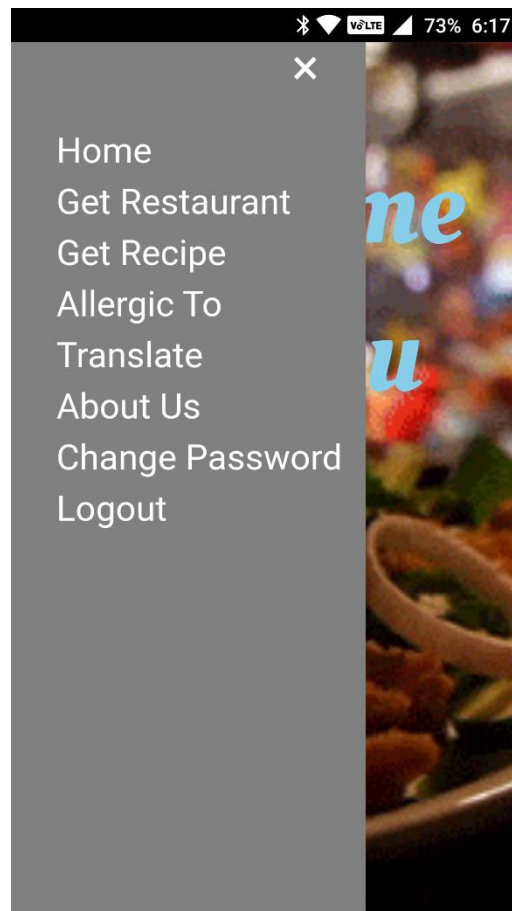
1. Open the application and login with the valid credentials
2. On click of the login button it will displays the home page and press the Search Restaurant button
3. It will displays the another page with place and food item. Enter the information and press the Search button.
4. On click of the button it will redirect to Restaurant Details page.
5. Press the Get Review button to the Review of that restaurant.



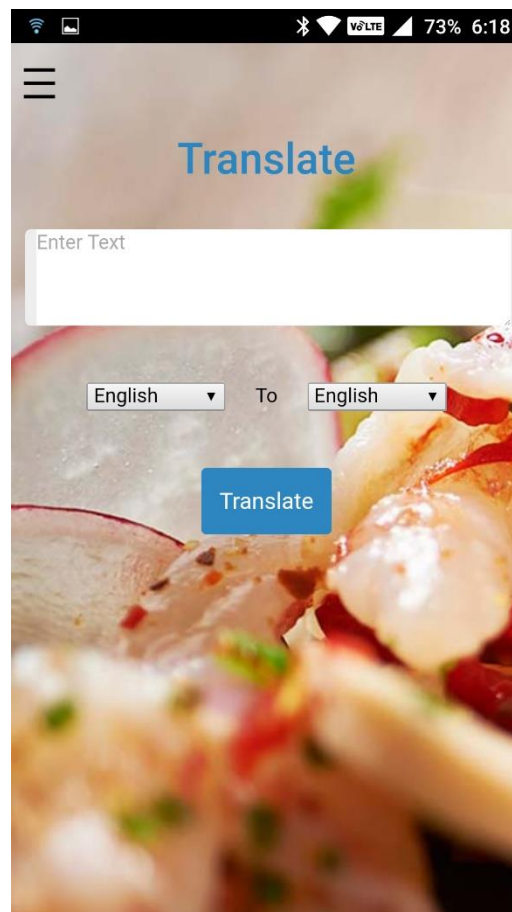
## 8. Translate

To Access the Translation feature, follow the below steps

- a. Open the Smart Eating application and Login.
- b. After login, the Home page will displayed in that page press the Side Menu button it will navigates to side menu which contains Translate option.



- c. Press the translate link and it will redirect to another page.
- d. In this page user, can translate the words from one language to another language.

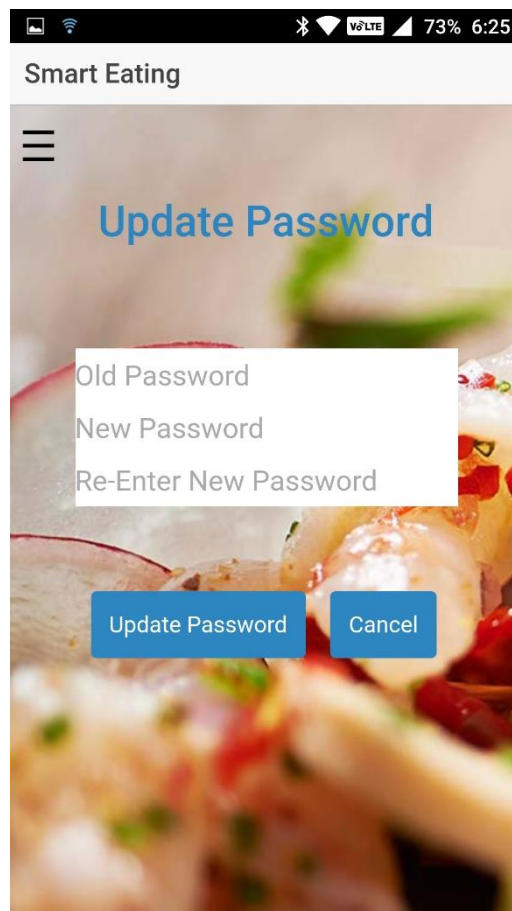




## 8. Change Password:

To change password, follow the below steps.

- a. First open the application and login with the valid credentials
- b. It will display the home page in the homepage open the side menu button
- c. It will open the side menu of our application
- d. In the side menu click on the change password link
- e. On click it will displays the update password page with following the fields
  - i. Enter Old password
  - ii. New password
  - iii. Re-Enter New Password



- f. After filling all these fields enter the Update password button.
- g. On clicking that button your password will update successfully.

## 9. About us:

To access the About US follow these steps.

1. Open the application and login with valid credentials.
2. On click login button home page will displays.
3. Next click on the side menu button it will shows the side menu.
4. Click on the About us link and it will redirect to the About us page

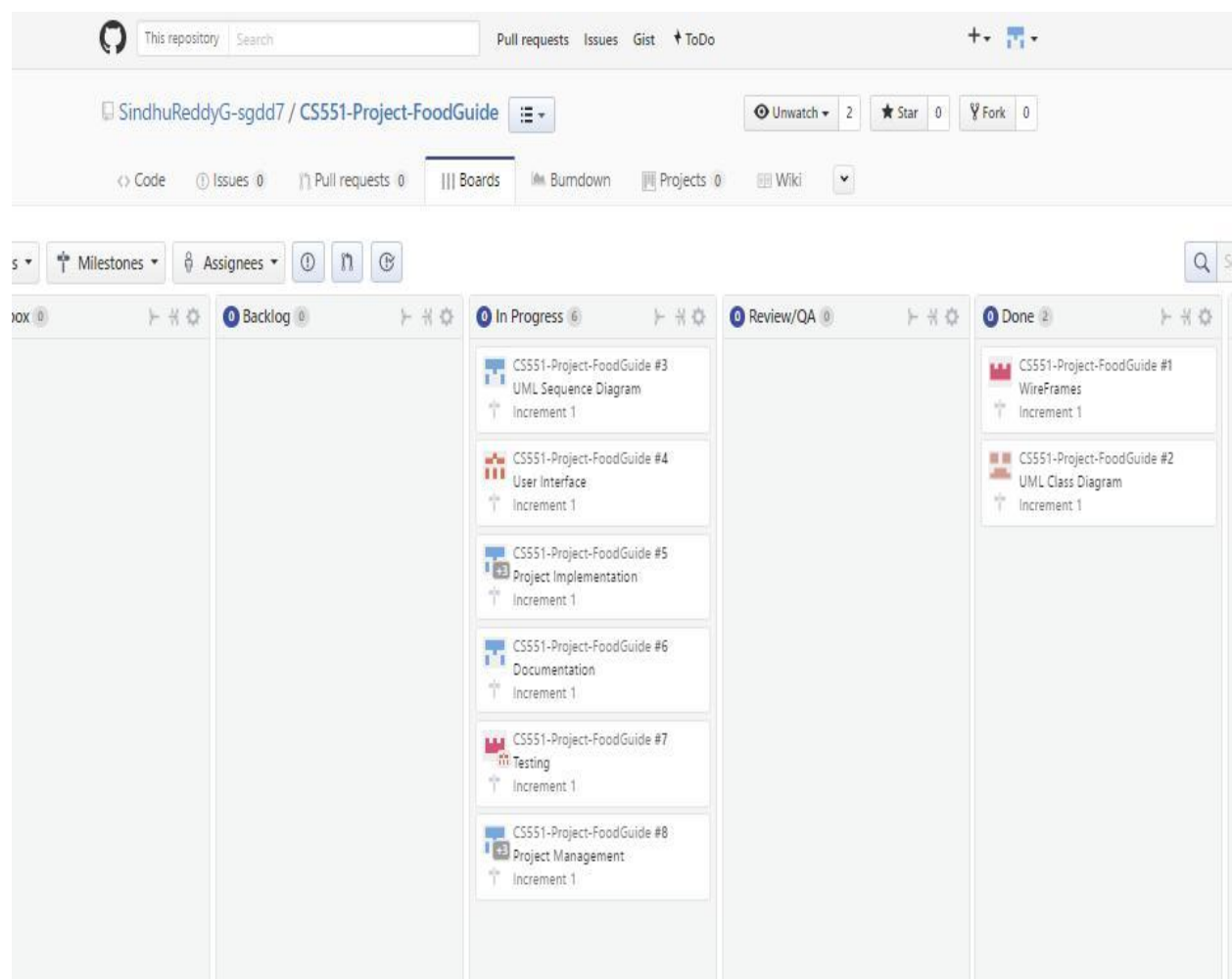


## Project Management Report:

The project is done in four increments, where in each increment the tasks are divide between the team members which is done in Zenhub. The screenshots of zenhub board for each increment are given below.

### ZenHub Board for Increment 1:

Using Github and Zenhub, Issues for first Iteration are Created. The Zenhub board consisting of all the issues is listed as shown below.



## Zen Hub Board up to Increment 2 :

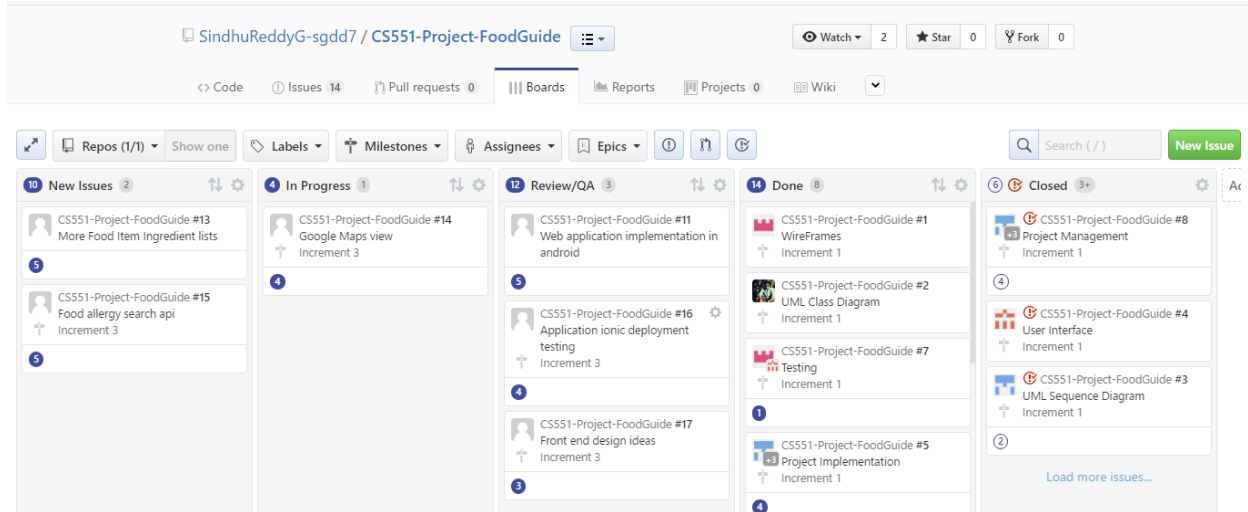
Using GitHub and Zen hub, Issues for Second Iteration are Created. The Zen hub board consisting of all the issues is listed as shown below.

The screenshot displays a GitHub ZenHub board for the repository "SindhuReddyG-sgdd7 / CS551-Project-FoodGuide". The board is organized into columns representing different stages of the workflow: New Issues (2), In Progress (1), Review/QA (1), Done (5), and Closed (3+). Each column contains a list of issues, some with icons representing different types of tasks (e.g., WireFrames, UML Class Diagram, Testing, Project Implementation, Documentation). The issues are categorized by increment (Increment 1, Increment 2) and include tasks like User authentication, Web application implementation, WireFrames, UML Class Diagram, Testing, Project Implementation, and Documentation. The board also shows a search bar, filters for Repos (1/1), Labels, Milestones, Assignees, and a search bar.

Column	Count	Issue Title	Increment
New Issues (2)	2	CS551-Project-FoodGuide #10 CredentialsStorage using mlab	Increment 2
	4		
	3	CS551-Project-FoodGuide #12 Google Knowledge services	
In Progress (1)	1	CS551-Project-FoodGuide #9 User authentication	
Review/QA (1)	1	CS551-Project-FoodGuide #11 Web application implementation in android	
Done (5)	5	CS551-Project-FoodGuide #1 WireFrames	Increment 1
	4	CS551-Project-FoodGuide #2 UML Class Diagram	Increment 1
	1	CS551-Project-FoodGuide #7 Testing	Increment 1
	4	CS551-Project-FoodGuide #5 Project Implementation	Increment 1
	4	CS551-Project-FoodGuide #6 Documentation	Increment 1
Closed (3+)	3+	CS551-Project-FoodGuide #8 Project Management	Increment 1
	4		
	2	CS551-Project-FoodGuide #4 User Interface	Increment 1

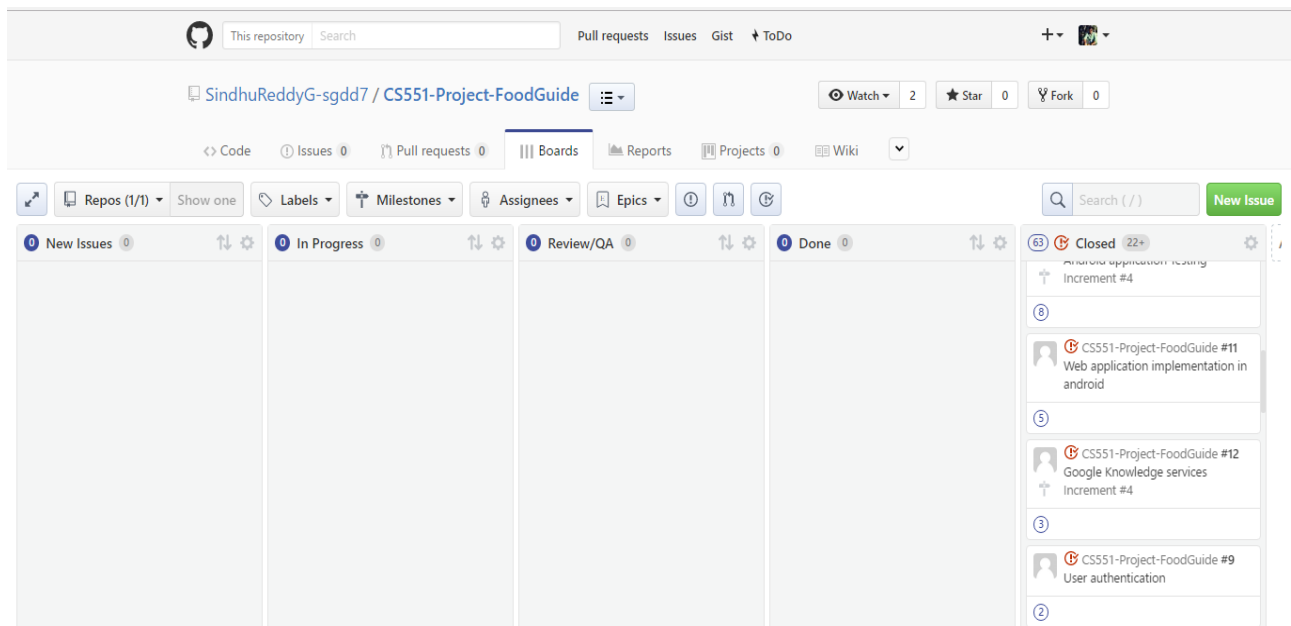
## Zen Hub Board up to Increment 3:

Using GitHub and Zen hub, Issues for Third Iteration are Created. The Zen hub board consisting of all the issues is listed as shown below.

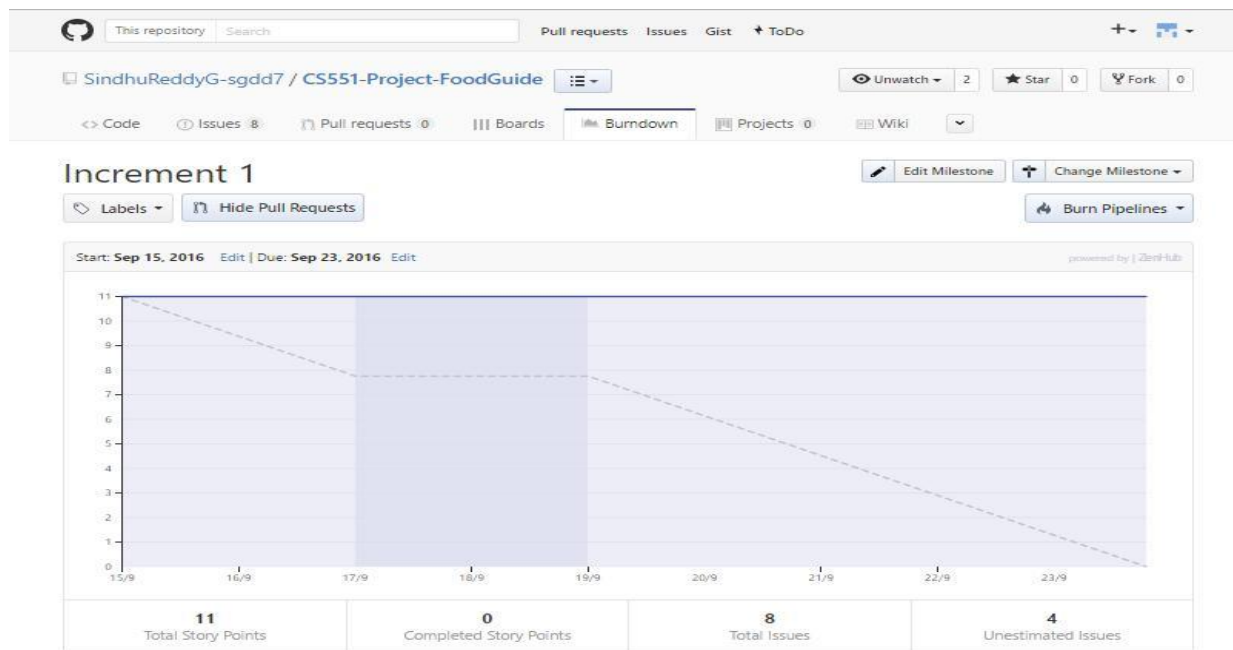


## Zen Hub Board up to Increment 4:

All the issues regarding about our project are done and closed, all the closed issues are posted down below.



## Burndown Chart for Increment 1



## Burndown Chart for Increment 2:



## Burndown Chart for Increment 3:



## Burndown Chart for Increment 4:



## Final Project Evaluation: Existing Services/Rest API:

### 1. Foursquare API:

- Used for retrieving Restaurants based on location and search query.
- Also used for getting categories and menu items for a specific restaurant.

URL: <https://api.foursquare.com/v2/venues/>

### 2. Google Knowledge graph search API:

- Auto population of data in the textfield is implemented using this API. URL:

<https://developers.google.com/knowledge-graph/>

### 3. Edamam API:

- This API is used to get ingredients for the different food items.

URL: <https://developer.edamam.com/>

### 4. The Yummly Recipe API :

- It is used to get all the recipe's and ingredients of the food items.

URL: <https://developer.yummly.com>

### 5. Mlab online database service

- By using this service, we are implementing the online user account database to login

URL: <https://mlab.com/databases/SmartEating>

### 6. Google Maps API

- We are using the google maps API to display the restaurant location in google maps.

URL: <https://developers.google.com/maps/>



## Management Structure:

- **User account database development :** User account details are stored in the mlab's online mongo database.
  - Contributors: Advait, Ravi
- **User credentials validation test cases:** User login credentials are validated with the values in database of mongo lab.
  - Contributors: Sindhu, Uday
- **Web application User Interface:** Front end idea and implementation of webpages in html.
  - Contributors: Uday, Advait
- **Android application Development:** Front end idea and implementation of android application design idea in mobile.
  - Contributors: Sindhu, Ravi
- **Application Program Interface Use Cases:** Implementation of different use cases from the Web API like ingredient search, items and allergy's.
  - Contributors: Sindhu, Ravi, Advait, Uday
- **Restaurant Search implementation:** Using Foursquare API, the restaurants are retrieved based on location and search query.
  - Contributors: Advait, Ravi, Sindhu, Uday
- **Menu and Item Search implementation:** For the selected restaurant, Menu is retrieved which contains different Categories of items using foursquare API. By selecting the Category, all the items belonging to particular category are displayed.
  - Contributors: Uday, Sindhu
- **Android Application deploying and debugging :** We had deployed our application in android platform using Ionic.
  - Contributors: Sindhu, Ravi.

- **Web Application deploying and debugging:** We had deployed our Application in browser as well. Also debugged when errors occurred.
  - Contributors: Sindhu, Ravi, Advait, Uday
- **Application testing:** Deployed application is then tested using JLint and YSlow for better performance.
  - Contributors: Advait, Uday
- **Restaurant Review:** Reviews of selected restaurants are retrieved using IBM Watson API.
  - Contributors: Uday, Sindhu

## Project Contribution:

### Sindhu Reddy Golconda (Class ID: 14) :

Contribution: 25%

Responsibilities:

- User credentials validation test cases
- Android application Development
- Application Program Interface Use Cases
- Restaurant Search implementation
- Android Application deploying and debugging
- Restaurant Review

### Ravi Kumar Kurva (Class ID:23)

Contribution: 25%

Responsibilities:

- User account database development
- Android application Development
- Application Program Interface Use Cases
- Restaurant Search implementation
- Android Application deploying and debugging
- Web Application deploying and debugging

### Uday Kiran Chowdary Mallineni (Class ID: 28)

Contribution: 25%

Responsibilities:

- User credentials validation test cases
- Web application User Interface
- Restaurant Search implementation
- Menu and Item Search implementation
- Application testing
- Restaurant Review

### Advaith Nandelli (Class ID: 34)

Contribution: 25%

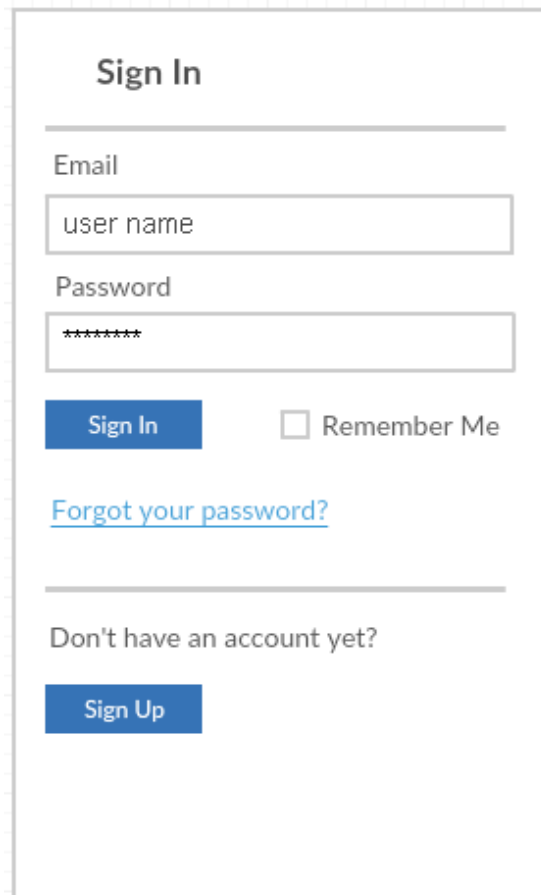
Responsibilities:

- User account database development
- Web application User Interface
- Application Program Interface Use Cases
- Restaurant Search implementation
- Web Application deploying and debugging
- Application testing

## IV. Project Design:

### Wireframes

Login page:



The wireframe shows a login form titled "Sign In". It includes an "Email" label above a text input field containing "user name". Below this is a "Password" label above a text input field containing "\*\*\*\*\*". To the right of the password field is a checkbox labeled "Remember Me". A blue "Sign In" button is positioned to the left of the checkbox. Below the password field is a blue link labeled "Forgot your password?". A horizontal line separates the login section from the registration section, which starts with the text "Don't have an account yet?". Below this text is a blue "Sign Up" button.

**Sign In**

---

Email

Password

☐ Remember Me

[Forgot your password?](#)

---

Don't have an account yet?

[Sign Up](#)

Register page:

## Sign Up

---

Full Name






Email


User Name

Password

Confirm

[Sign Up](#)

 10k

Change Password page :

Change Password:

Old Password:

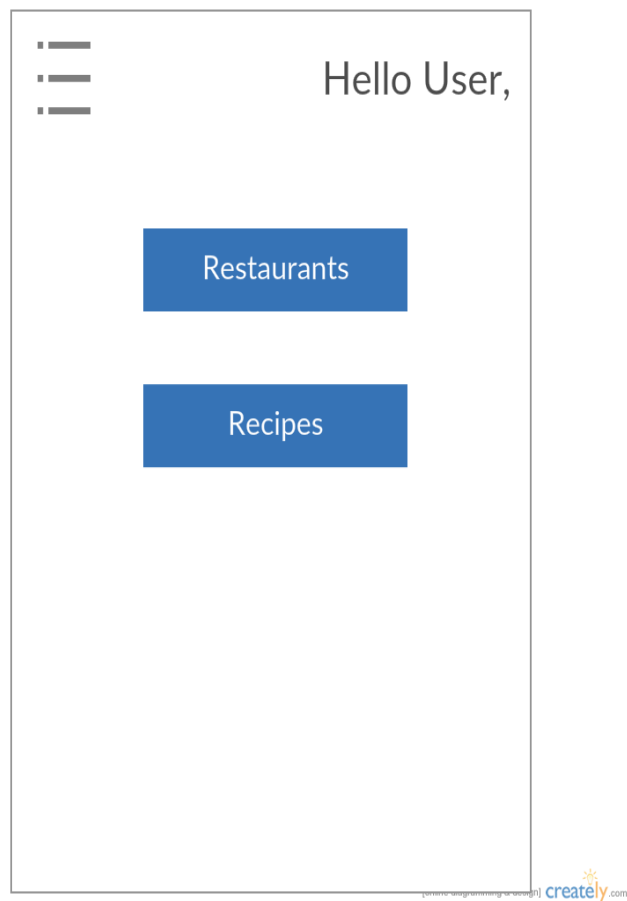
New Password:

Re Enter New Password:

Cancel

Update

app. main search page:



## Translate Page:

Enter Text

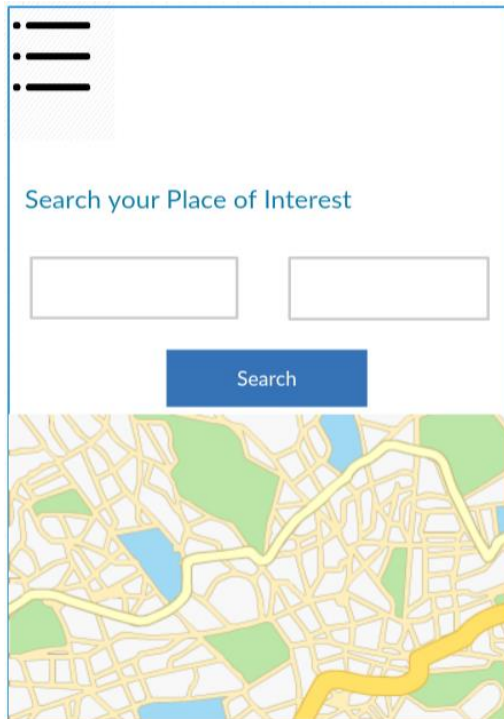
Language1 ▼ To Language2 ▼

Translate Text




### Restaurant Result page:

In this page we will display best resulted restaurants based on the given input options by the user.



The image shows a UI mockup for a restaurant search interface. It features a hamburger menu icon in the top left corner. Below the menu is a search bar with the placeholder text "Search your Place of Interest". The search bar is composed of two adjacent input fields. Below the input fields is a blue button with the text "Search". At the bottom of the interface is a map showing a city street grid with green areas representing parks and blue areas representing water bodies.

## Search Result:

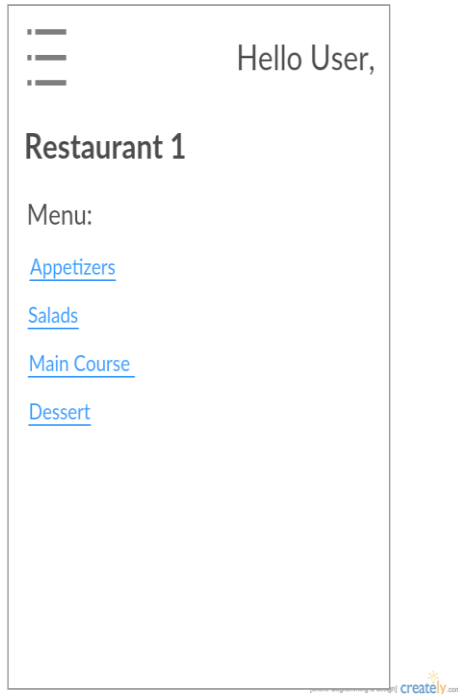
Hello User,

Restaurant List

Restaurant 1	<a href="#">Menu</a>	<a href="#">Recipe</a>
Restaurant 2	<a href="#">Menu</a>	<a href="#">Recipe</a>
Restaurant 3	<a href="#">Menu</a>	<a href="#">Recipe</a>
Restaurant 4	<a href="#">Menu</a>	<a href="#">Recipe</a>
Restaurant 5	<a href="#">Menu</a>	<a href="#">Recipe</a>


## Menu page:

In this page we will display the menu with the items and health concern to give the user feedback whether is it good or bad to his health by indicating green / red mark.



## Allergic food page:

In this page user can specify the which items he his allergic so that we can give him food options without them like some members will allergic to the peanut we can give him food items list which don't have the peanuts in it.



Mark your Allergies

Allergy 1	<input type="checkbox"/>
Allergy 2	<input type="checkbox"/>
Allergy 3	<input type="checkbox"/>
Allergy 4	<input type="checkbox"/>
Allergy 5	<input type="checkbox"/>

## Recipe Search:

User can search the Ingredients of the Food item, So that he can prepare that food at home. Here we have used the edamam API to search the food ingredients.

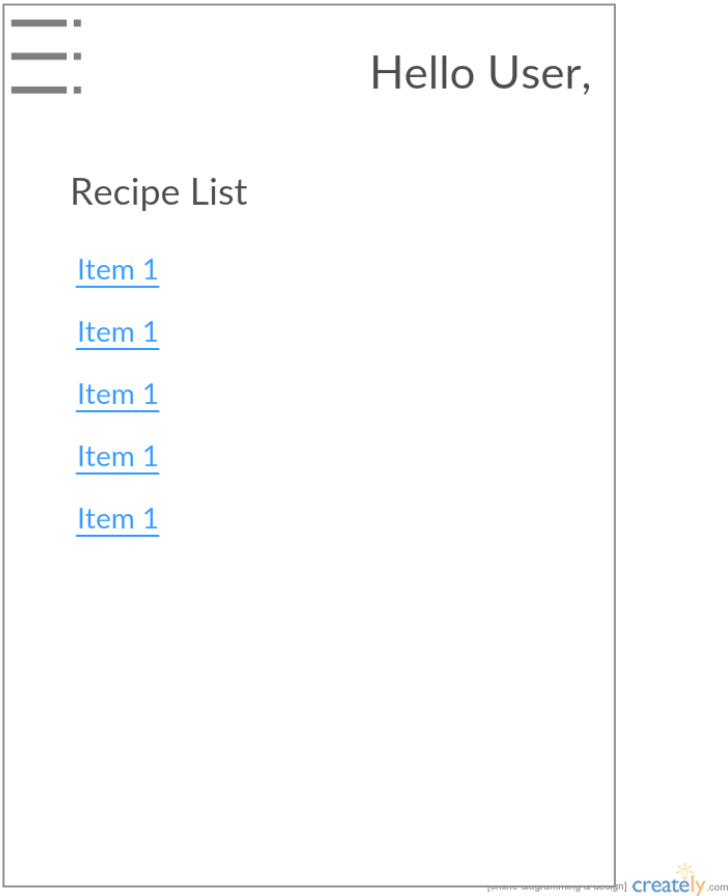
Hello User,

Recipe Search


© 2020 createely.com

## Recipe Result page:

Here user will get the relevant search results items list based on the food item.



Ingredient result:



## Hello User,

### Item 1

- Ingredient 1
- Ingredient 2
- Ingredient 3
- Ingredient 4
- Ingredient 5

## About Us Page :

In this page, we have explained about the our application and uses.

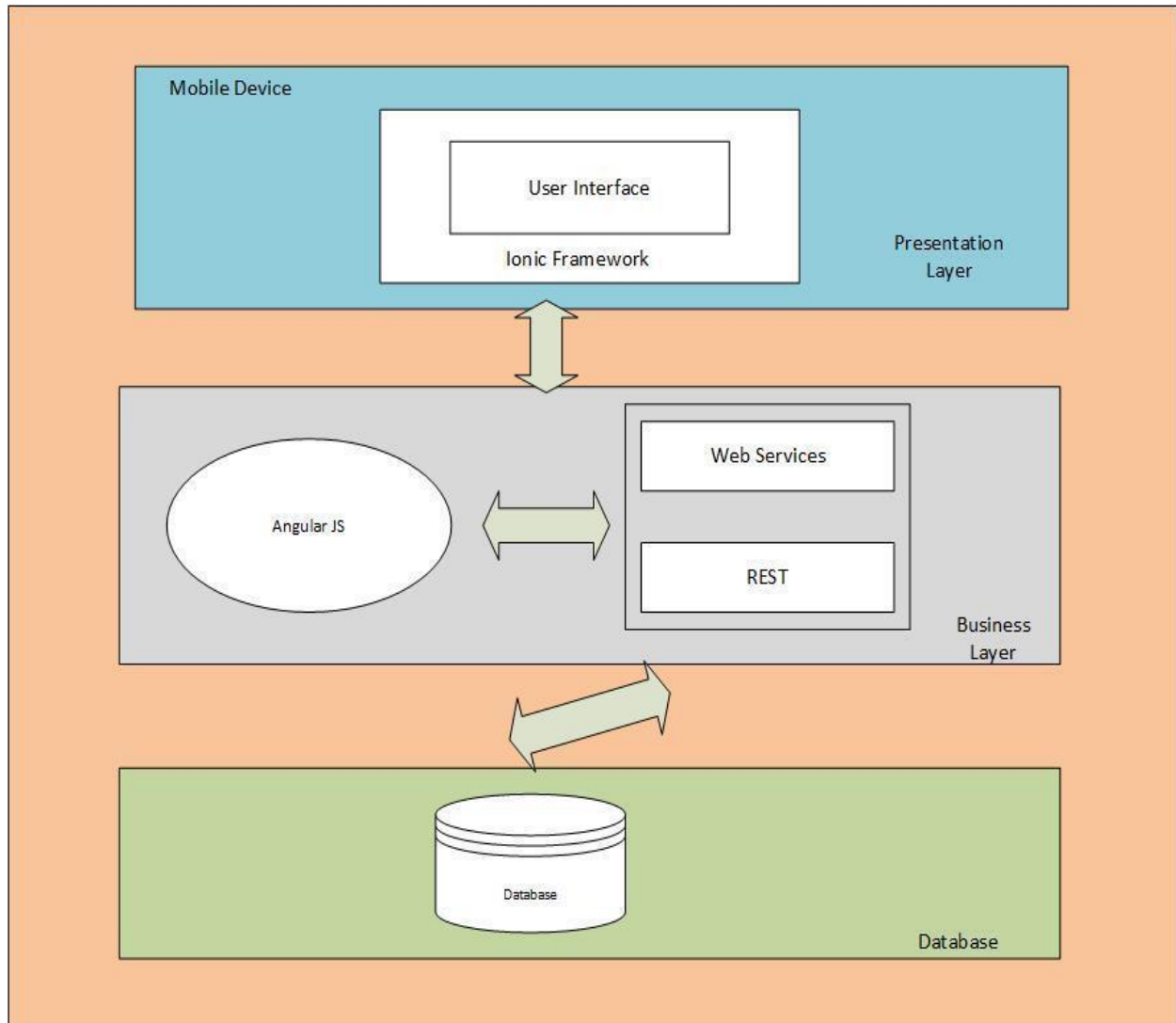


About Us:

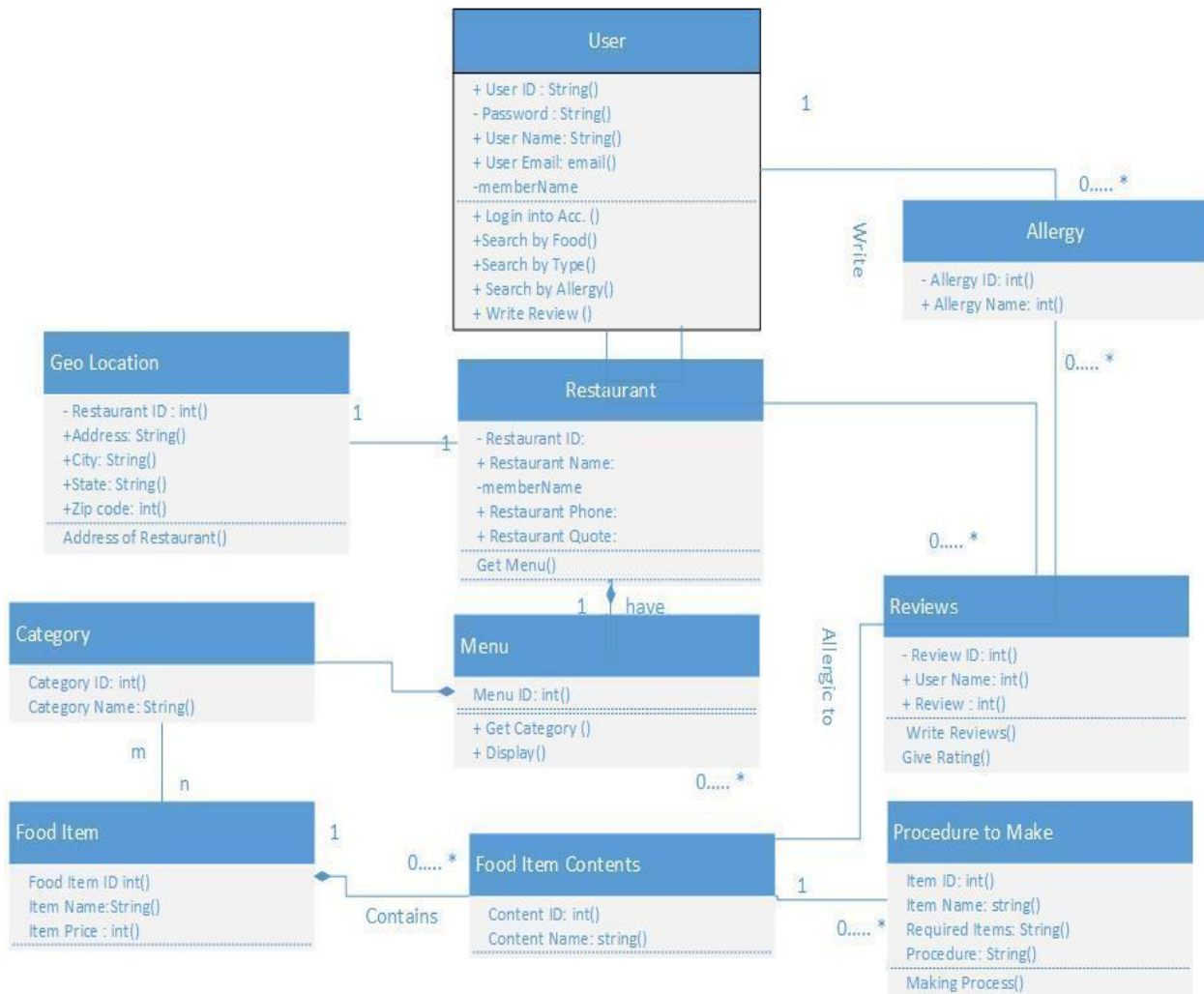
[Text]



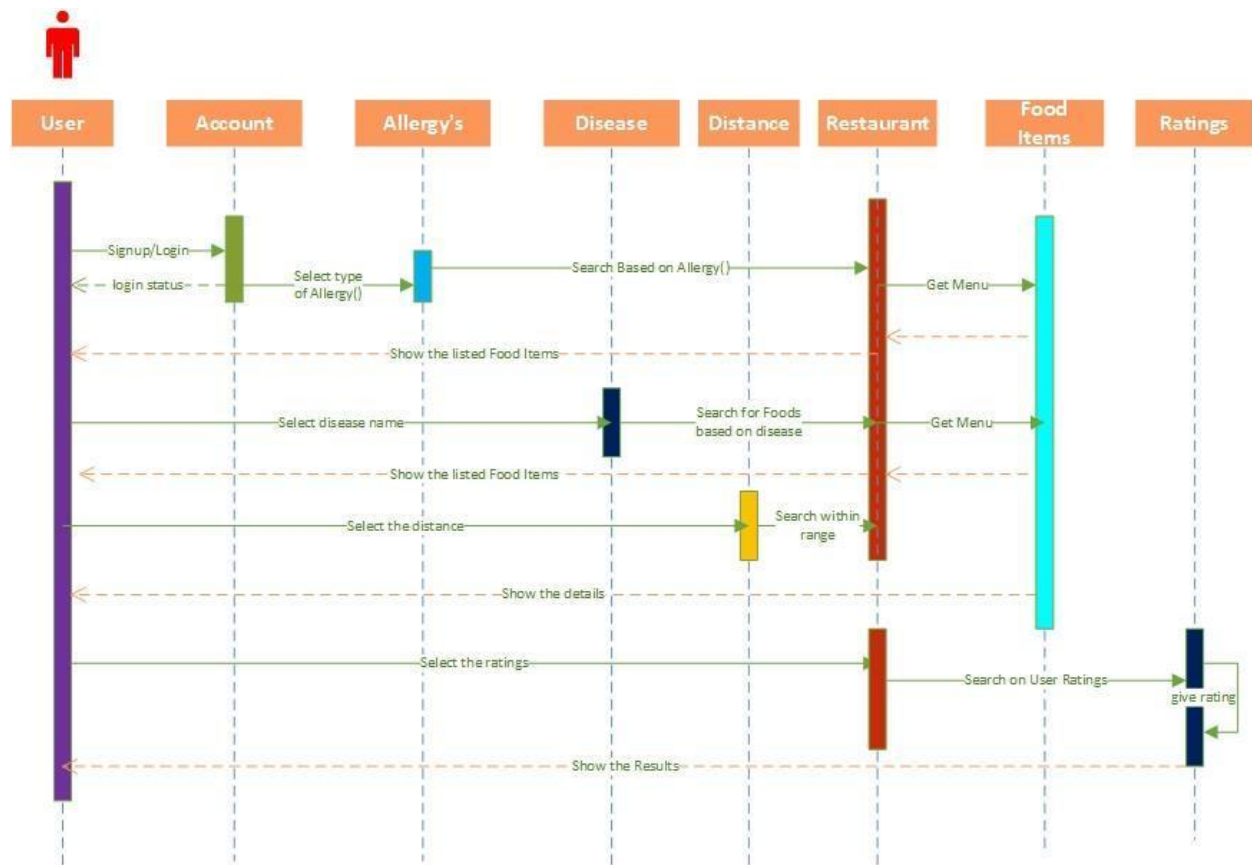
## Architecture Diagram:



## UML Class Diagram:



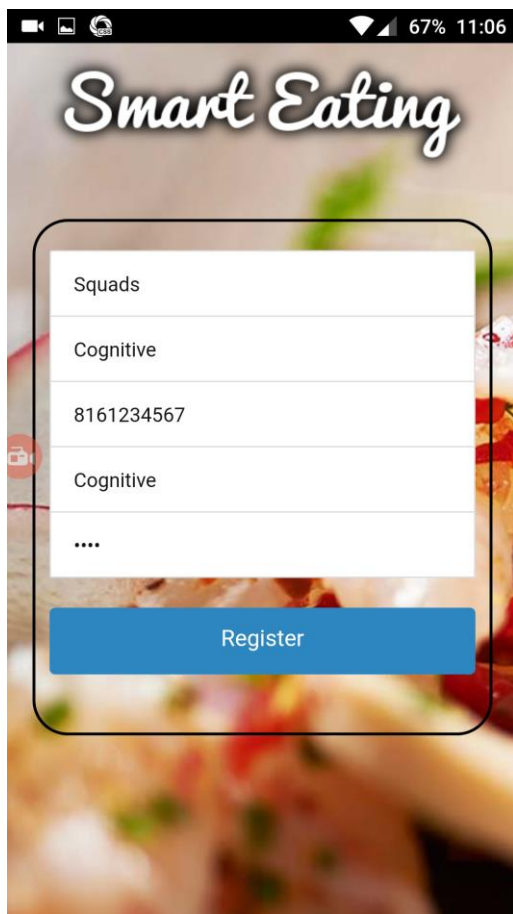
## UML Sequence Diagram:



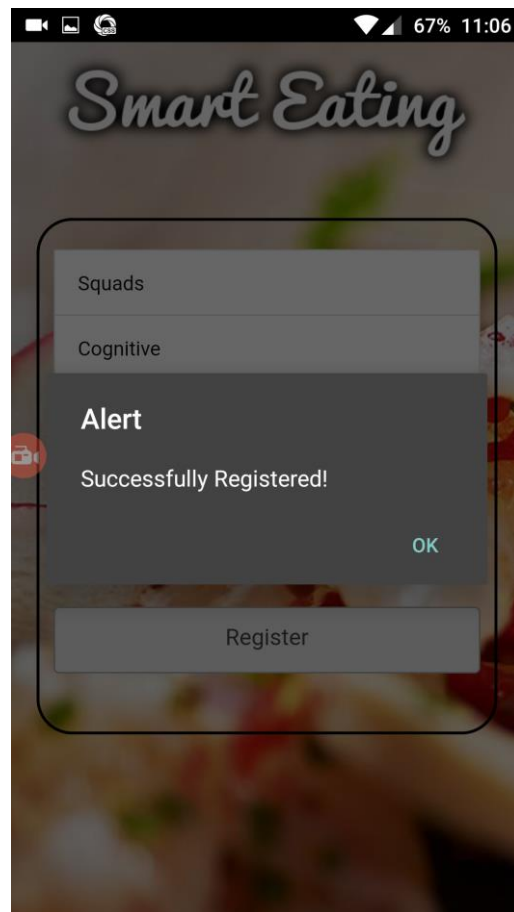
## V. Project Deployment: Android Application:

### User Registration:

In this page, user can enter his/ her credentials into our application in order to sign up and all the details will be stored in the online mlab database (mongo dB).

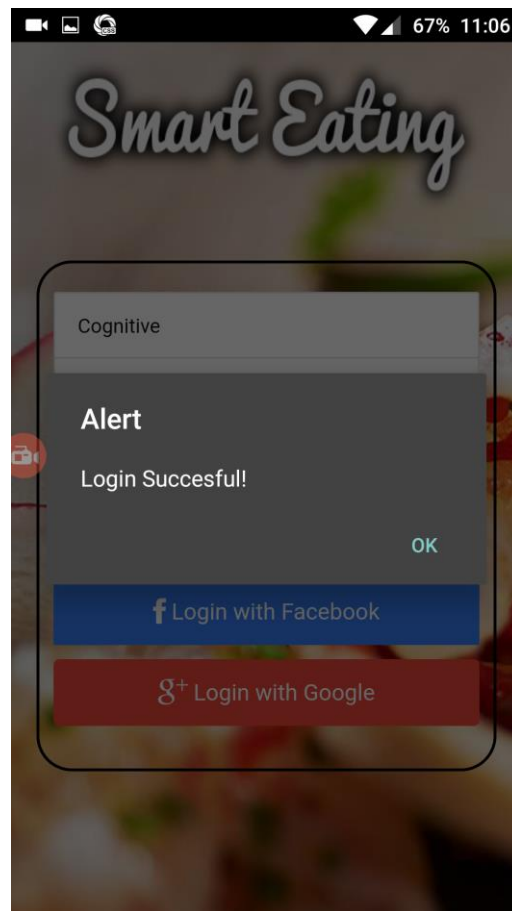
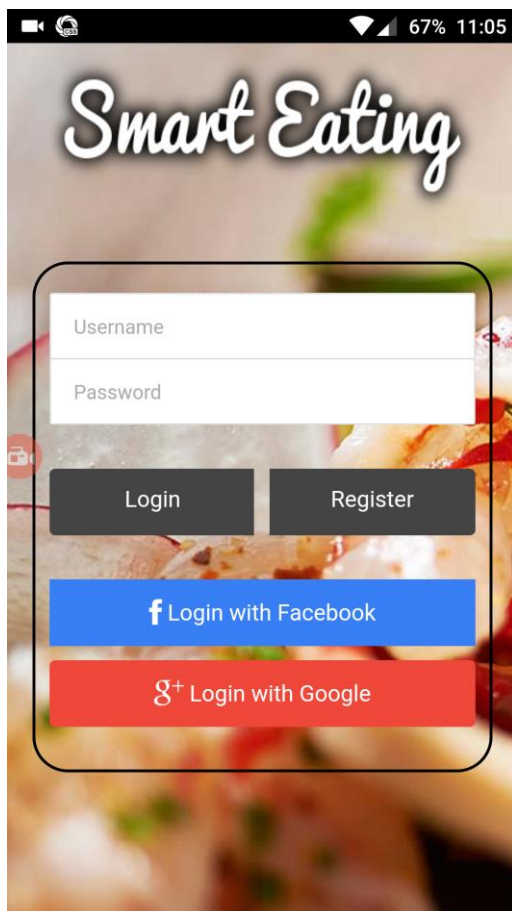


The image shows the registration screen of the 'Smart Eating' app. The title 'Smart Eating' is at the top in a white cursive font. Below it is a registration form with five input fields: 'Squads', 'Cognitive', a numeric field containing '8161234567', another 'Cognitive' field, and a password field with four dots. A blue 'Register' button is at the bottom of the form. The background is a blurred image of a pizza.



## User Login:

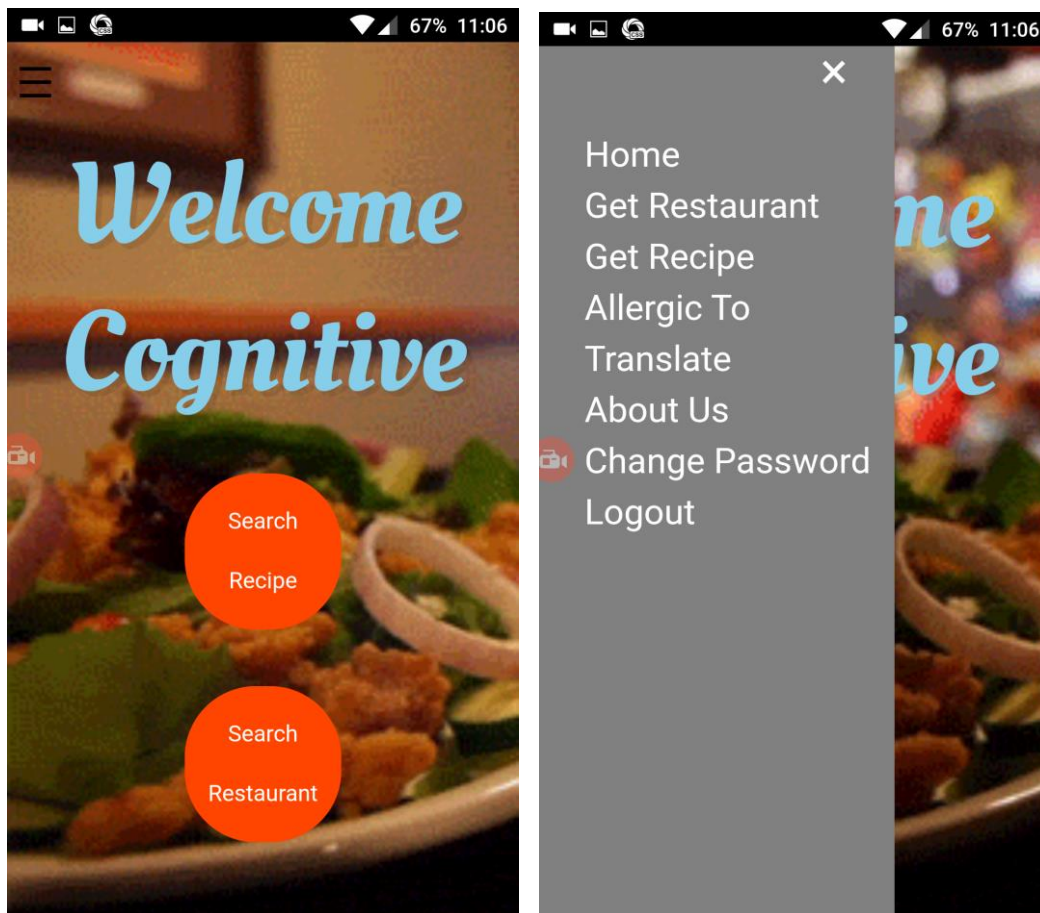
In this page user is able to login into his account with the valid credentials.



We will validate the user credentials, if they match the online database username and password it will give the user a successful login pop message and then redirected to the home page.

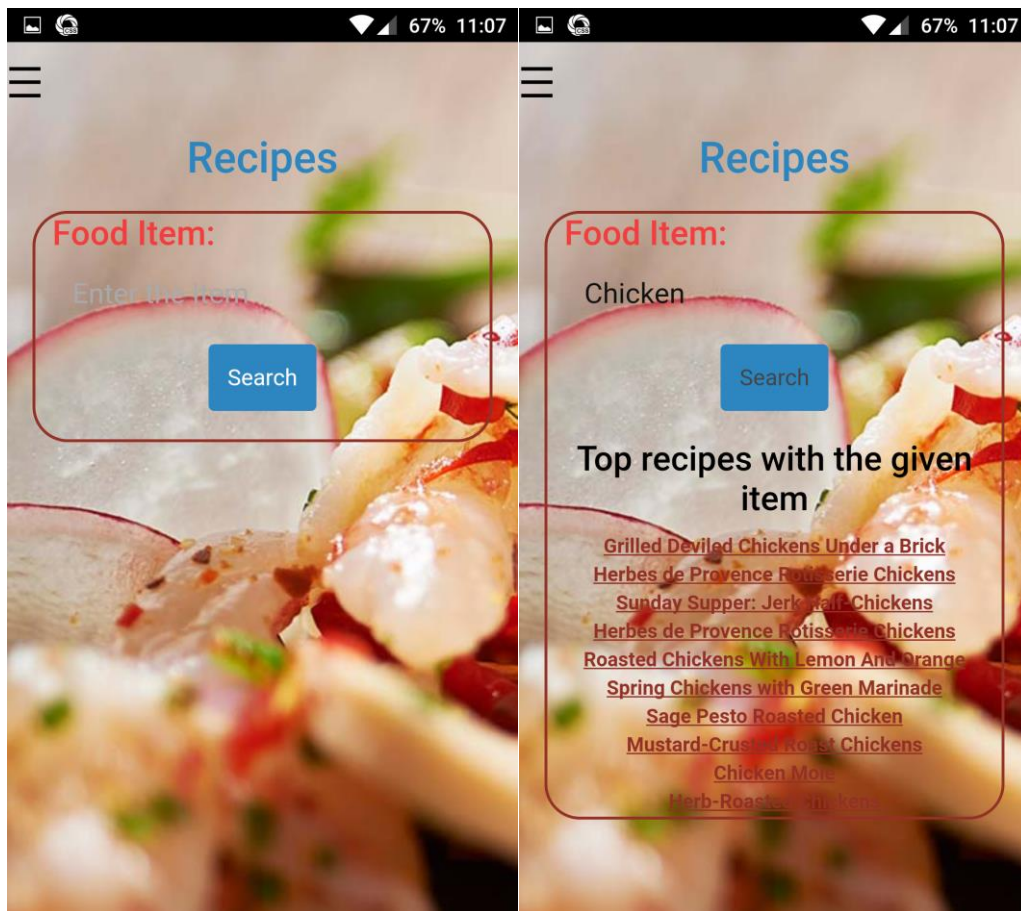
Home page:

In this page where user select search recipe or search restaurant to try new food.



### Search Recipe:

Here in this page user can search the food items to get their recipe's





Ingredients Result :

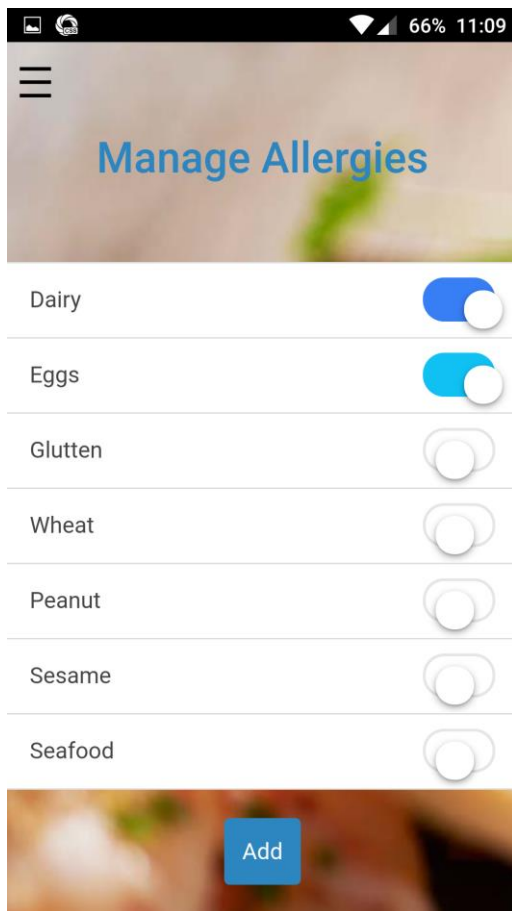


User can also get the images of the food items as well as the ingredients as shown above



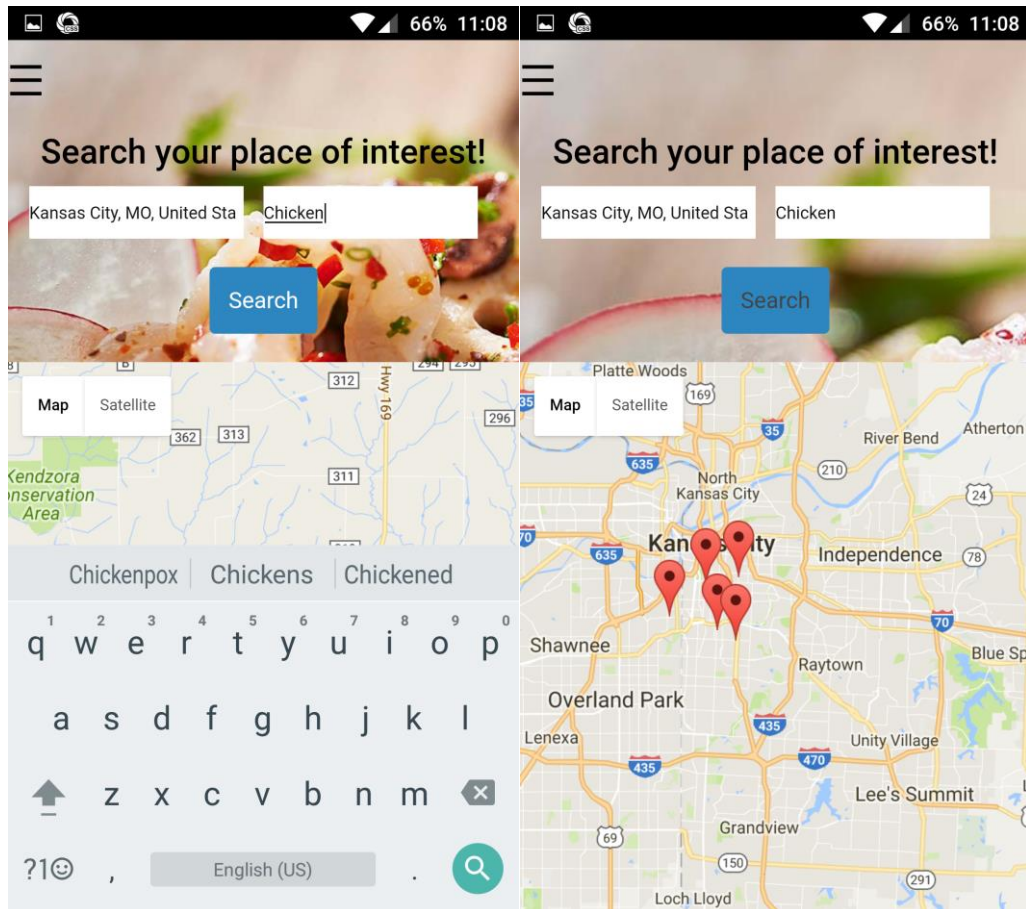
Allergies :

In this page user can select the different items which are heshe allergic to.



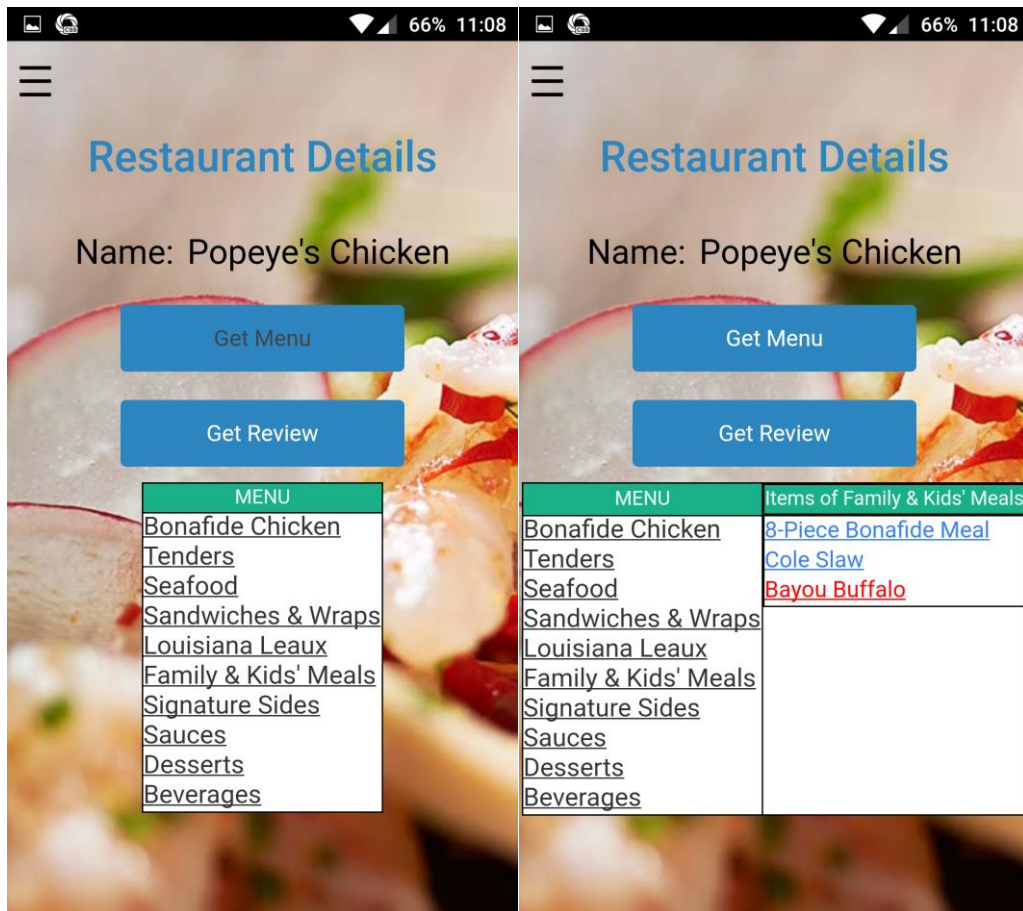
### Restaurant Search:

Once he selects the place and which type of the food he wants to try we will display all the results related to the search field.



After getting the results we will display the restaurant name and menu and reviews from the previous users. Menu button will show the restaurant menu with the item names.

User Reviews/Menu : Here we will display the review of the food item from the previous customer.



66% 11:08

Restaurant Details

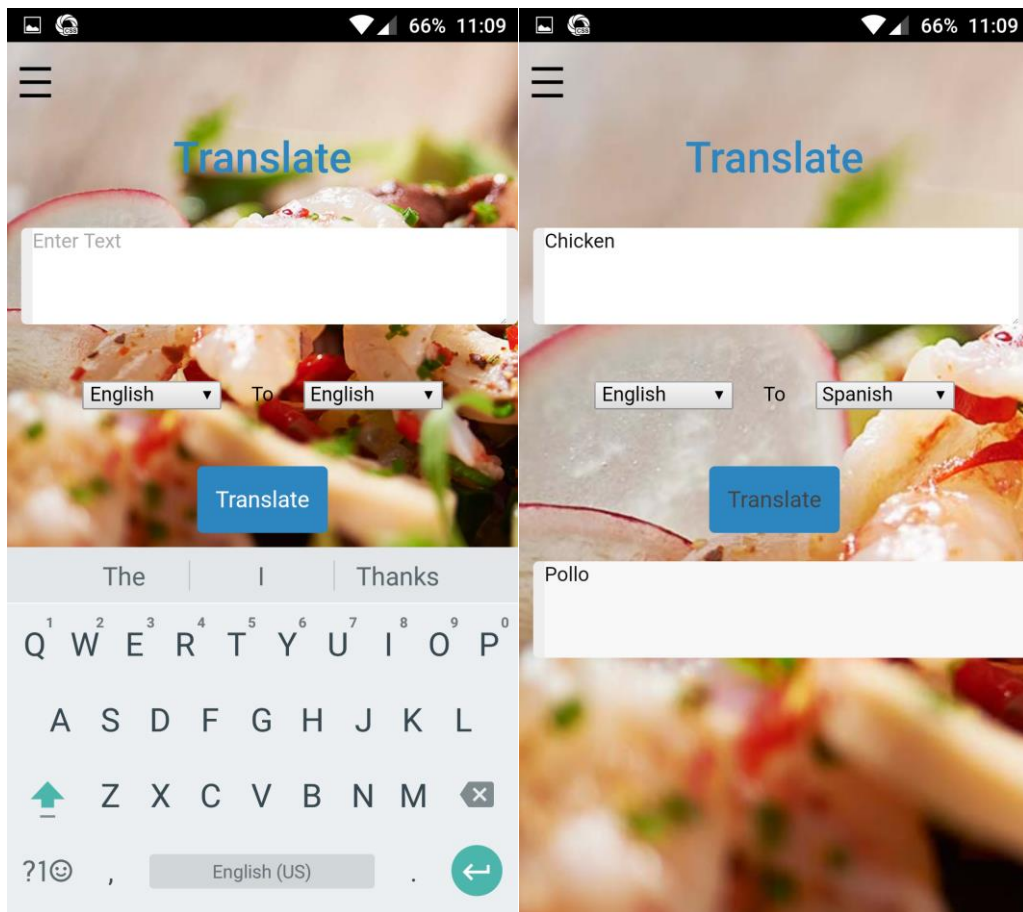
Name: Popeye's Chicken

Get Menu

Get Review

MENU	Items of Family & Kids' Meals
<a href="#">Bonafide</a>	<a href="#">8-Piece Bonafide Meal</a>
<a href="#">Chicken</a>	<a href="#">Cole Slaw</a>
<a href="#">Tenders</a>	<a href="#">Bayou Buffalo</a>
<a href="#">Seafood</a>	
<a href="#">Sandwiches</a>	["all-purpose flour","garlic","lemon
<a href="#">&amp; Wraps</a>	pepper","rosemary","thyme","creole
<a href="#">Louisiana</a>	seasoning","salt","eggs","milk","southern
<a href="#">Leaux</a>	comfort","hot sauce","melted
<a href="#">Family &amp;</a>	butter","worcestershire sauce","chicken
<a href="#">Kids' Meals</a>	wings","vegetable oil"],
<a href="#">Signature</a>	
<a href="#">Sides</a>	
<a href="#">Sauces</a>	
<a href="#">Desserts</a>	

Translate page :

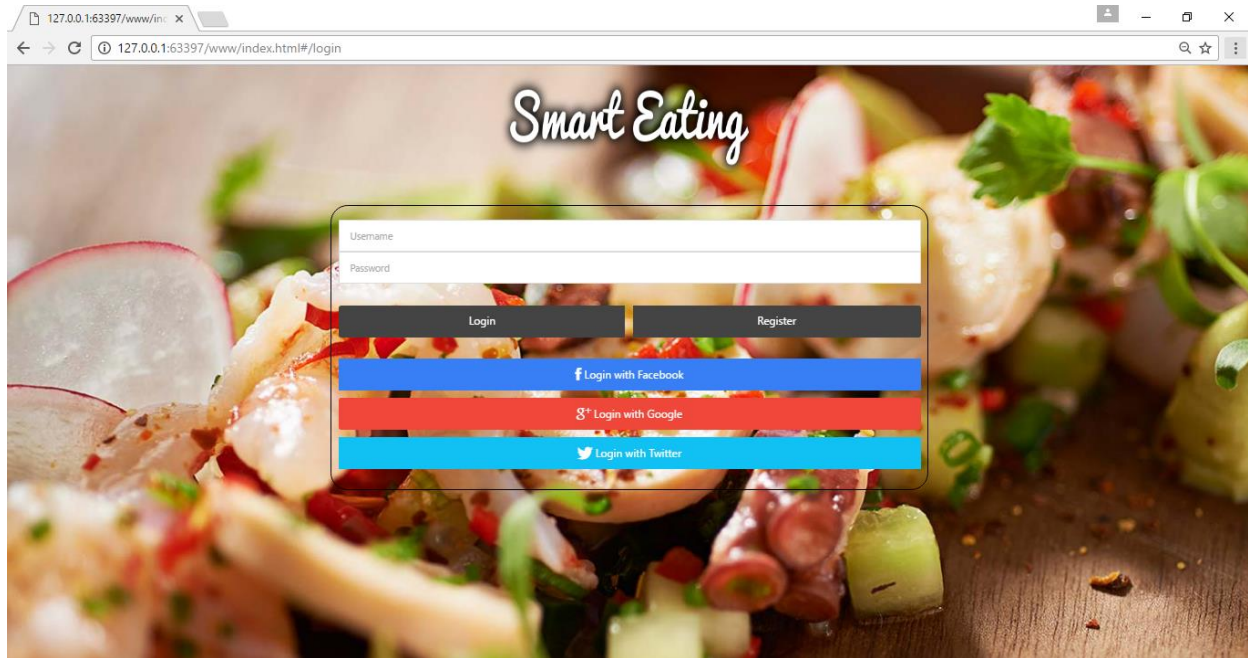




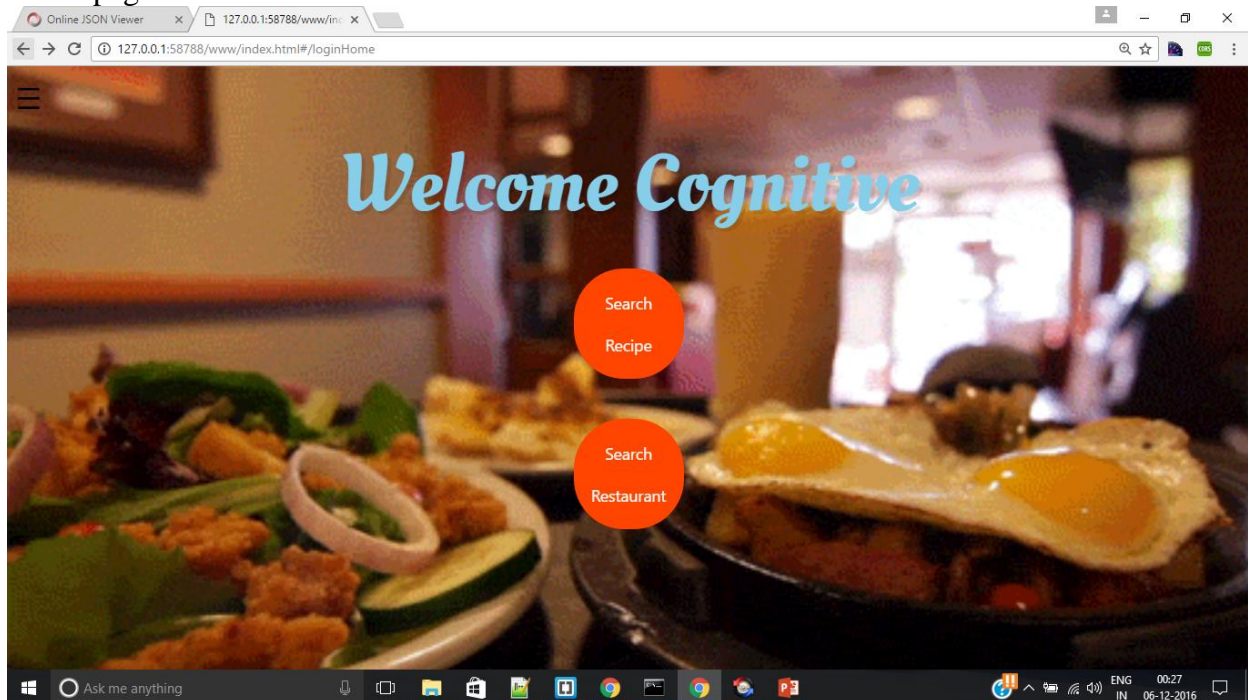
## Web Application :

we have deployed our application in web browser and android platform the web browser screen shoots are posted below android screen shots are posted already in above pages.

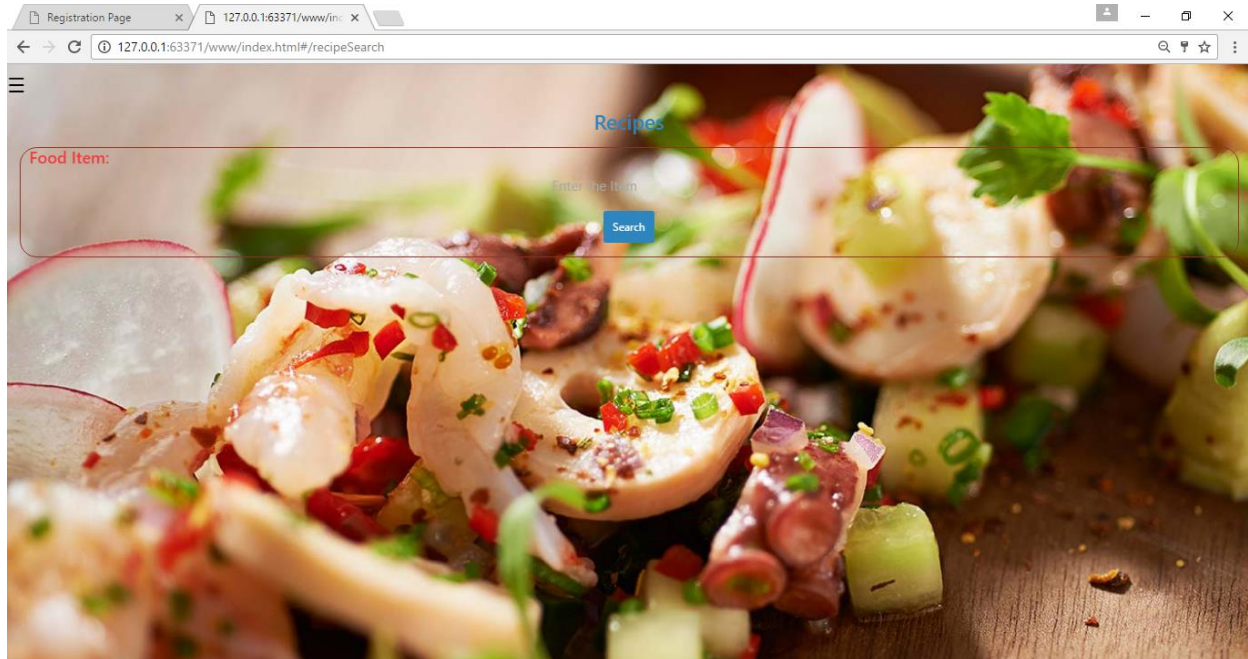
Web application login:



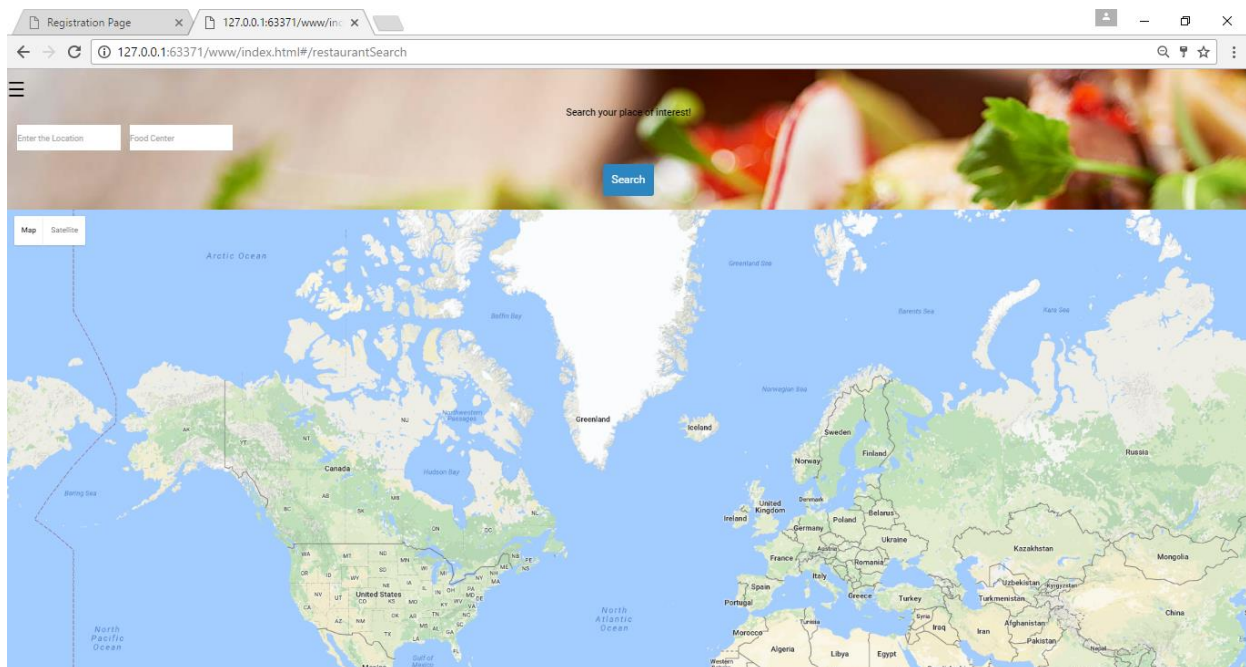
Home page:



### Search Recipe:

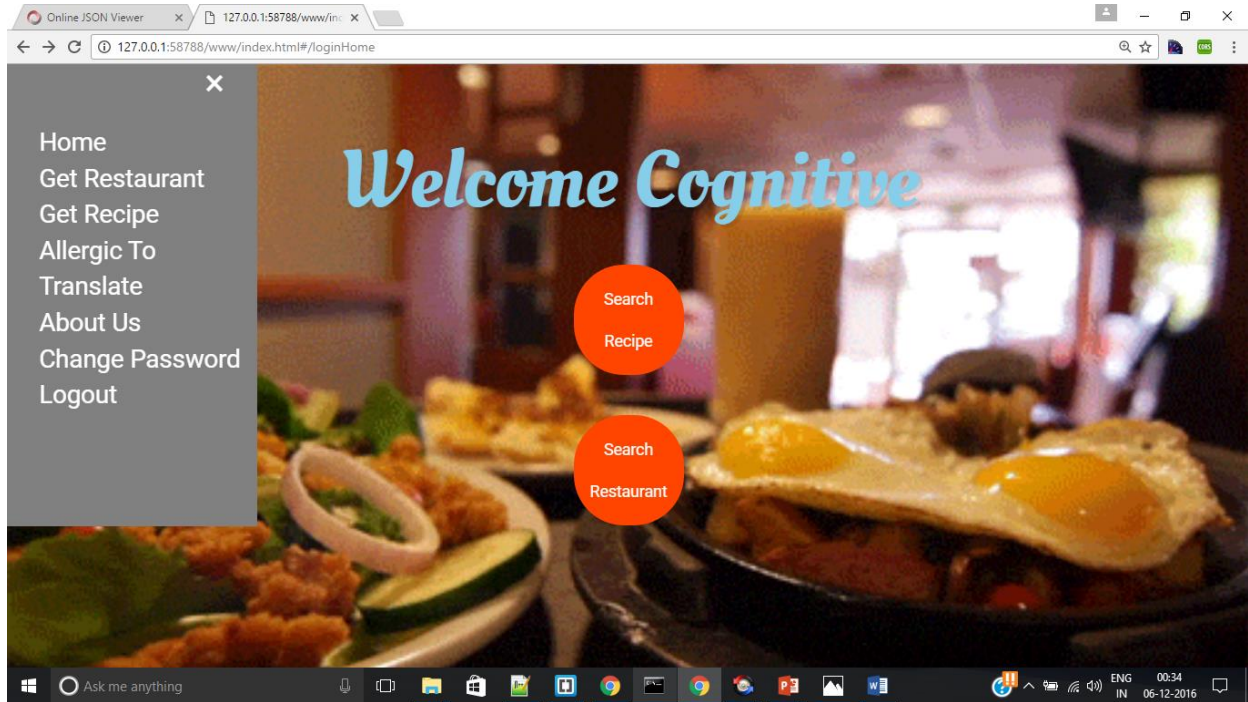


## Search Restaurant:

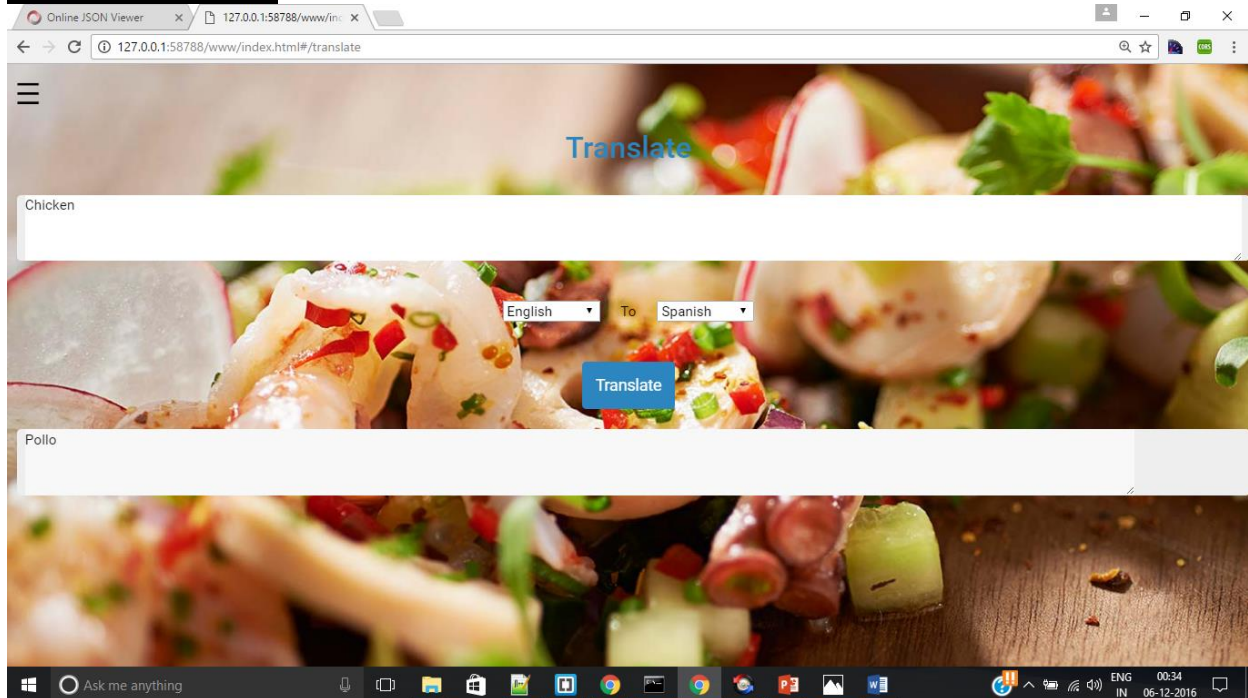




## Side Menu :



## Translate Page :

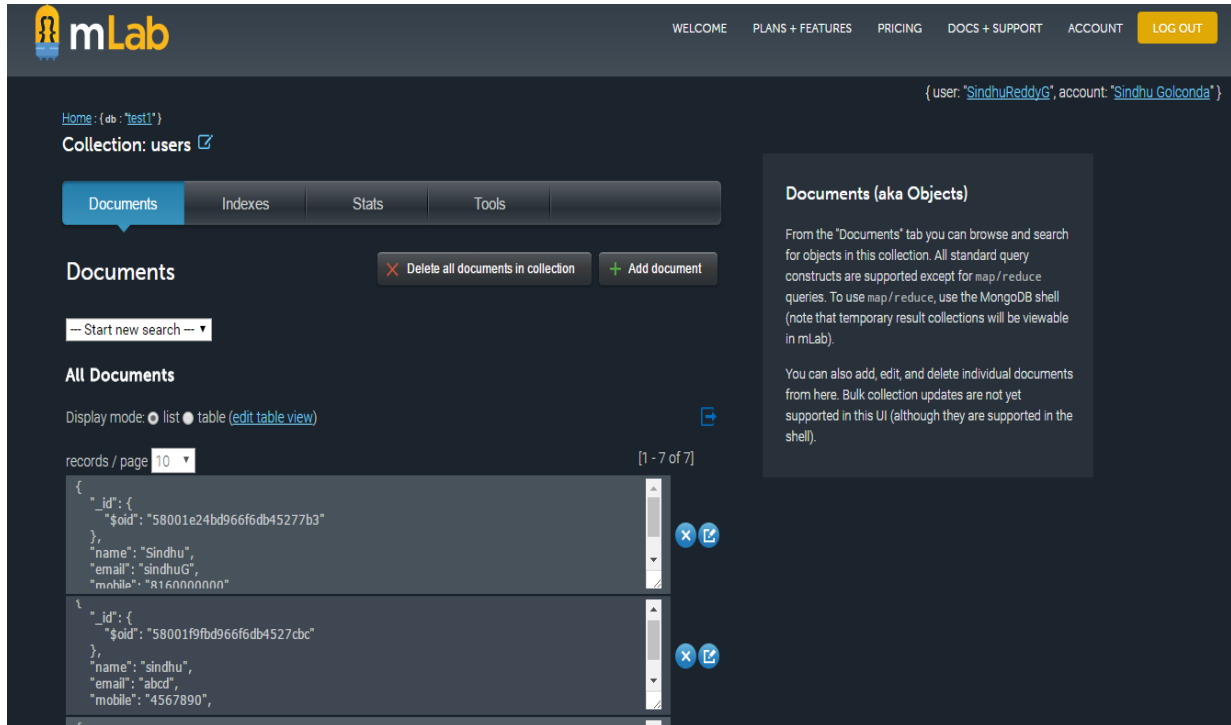




## Server Implementation:

Database for User account data:

In our project we are using the mlab online mongo dB data base, in this database we are storing the all the user information.



The screenshot displays the mLab web interface for a MongoDB database. The top navigation bar includes links for WELCOME, PLANS + FEATURES, PRICING, DOCS + SUPPORT, ACCOUNT, and a LOG OUT button. The current database is 'test1' and the collection is 'users'. The interface shows tabs for Documents, Indexes, Stats, and Tools. The 'Documents' tab is active, displaying a list of documents. A search bar is present with the text 'Start new search'. The display mode is set to 'list' (with a 'table' option and a link to 'edit table view'). The records per page are set to 10, and there are 7 records in total. Two documents are visible in the list:

- Document 1: 

```
{ "_id": { "$oid": "58001e24bd966fdb45277b3" }, "name": "Sindhu", "email": "sindhuG", "mobile": "8160000000" }
```
- Document 2: 

```
{ "_id": { "$oid": "58001f9fbd966fdb4527cbc" }, "name": "sindhu", "email": "abcd", "mobile": "4567890" }
```

Each document has edit and delete icons. A sidebar on the right provides information about the 'Documents (aka Objects)' tab, explaining that it allows browsing and searching for objects in the collection, supporting standard query constructs except for map/reduce. It also notes that bulk collection updates are not supported in this UI.

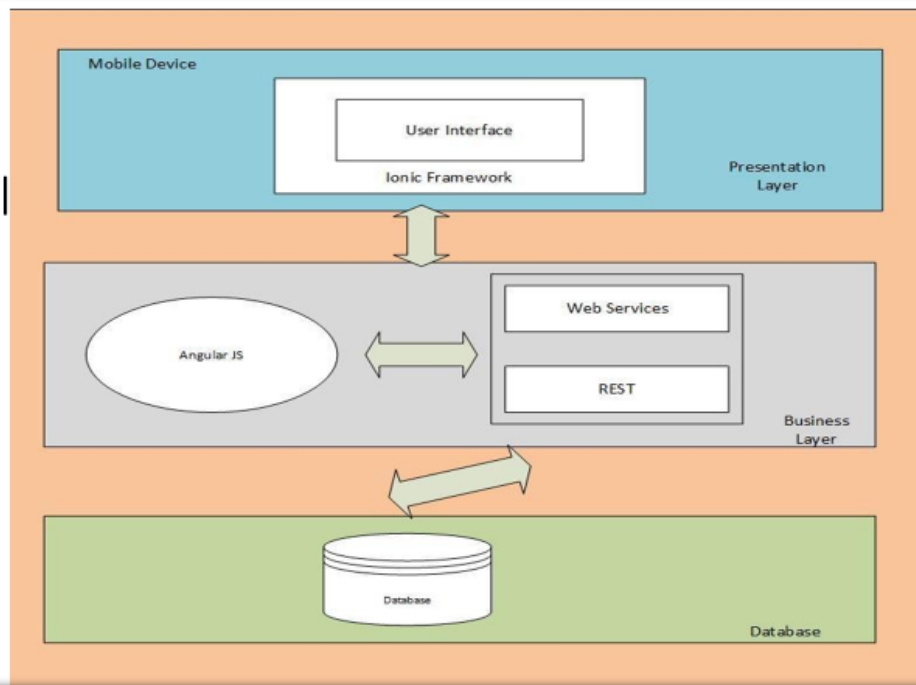
## VI. Presentation Slides:



### Features :

- To find near by restaurants.
- Getting the menu of restaurants and also ingredients of the food items in that.
- User can check for the item, that he is allergic to and can have his food accordingly from the restaurant.
- User can add allergies that he is allergic to and when he checks for menu in any restaurant, he can differentiate the items he is allergic to.
- You can also get recipes for any item to make and can know how to make it.

## Architectural Diagram :



## Technologies and API used :





## VII. GITHUB URL:

Source code GITHUB link is provide below:

Github URL: <https://github.com/SindhuReddyG-sgdd7/CS551-Project-FoodGuide>

## VIII. YouTube URL:

<https://www.youtube.com/watch?v=EKLqCITXPWY>

## IX. Bibliography:

<https://developers.google.com/knowledge-graph/how-tos/search-widget>  
<https://developer.foursquare.com/overview/realtime>  
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<https://cordova.apache.org/>