

Smart Eating - Food Guide

Increment 4

Project group 10

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CS5551 - Advanced Software Engineering

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December 5, 2016

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I. Introduction

The project decided by Team 10 is to develop an application which can be used as a Food Guide as well as for smart eating. A person may have various diseases like sugar, high/low blood pressure and also he might have allergic reaction towards few food items like peanuts, milk. Hence he has to be very careful while consuming the food. Also, when a person visits a new place and unable to find the appropriate restaurant then this application helps the user by providing the restaurants based on his choice.

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.

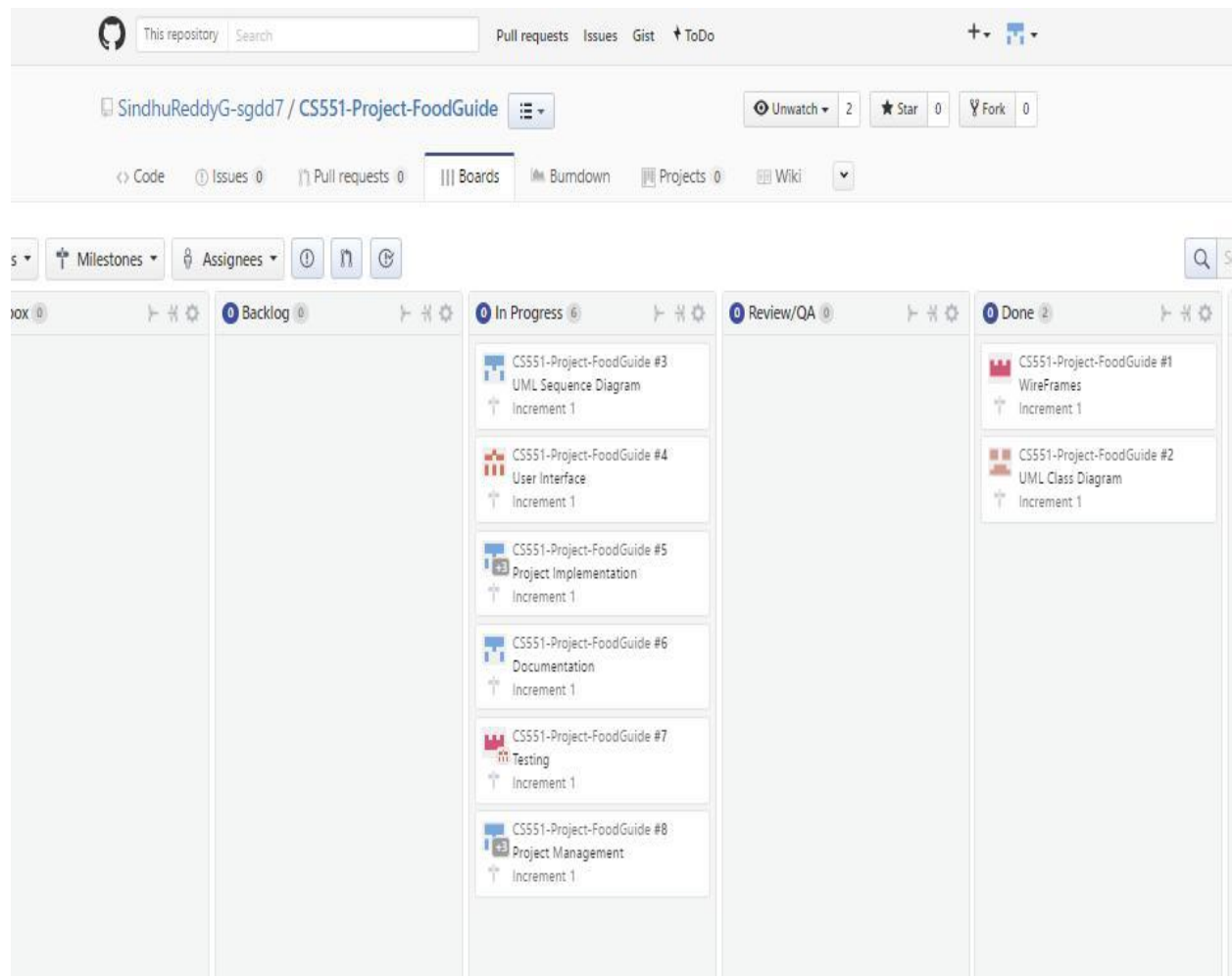
III. Project Plan

Team Members:

- Advaith Nandelli
- Sindhu Golconda
- Ravi Kumar Kurva
- Uday Kiran Mallineni

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 :

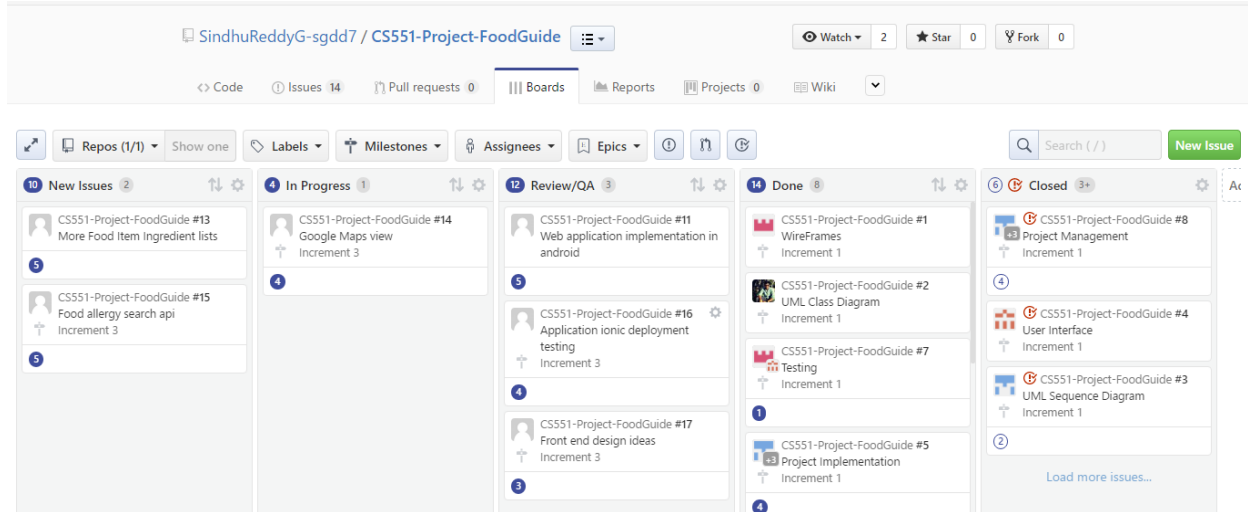
Using GitHub and Zen hub, Issues for Second Iteration are Created. The Zen hub board consisting of all the issues is listed as shown below.

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 items), **In Progress** (1 item), **Review/QA** (1 item), **Done** (5 items), and **Closed** (3+ items). Each column contains a list of issues, some with icons representing different types of tasks (e.g., wireframes, UML diagrams, testing, 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 and various filters like Labels, Milestones, and Assignees.

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

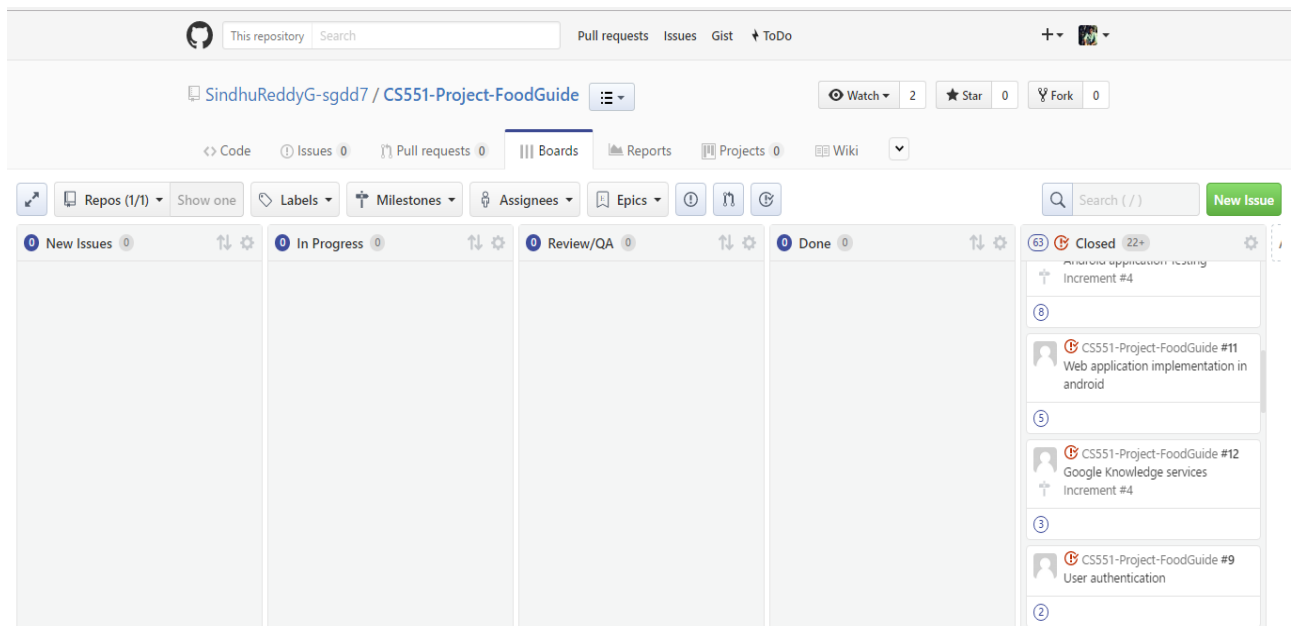
Zen Hub Board up to Increment 3:

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.

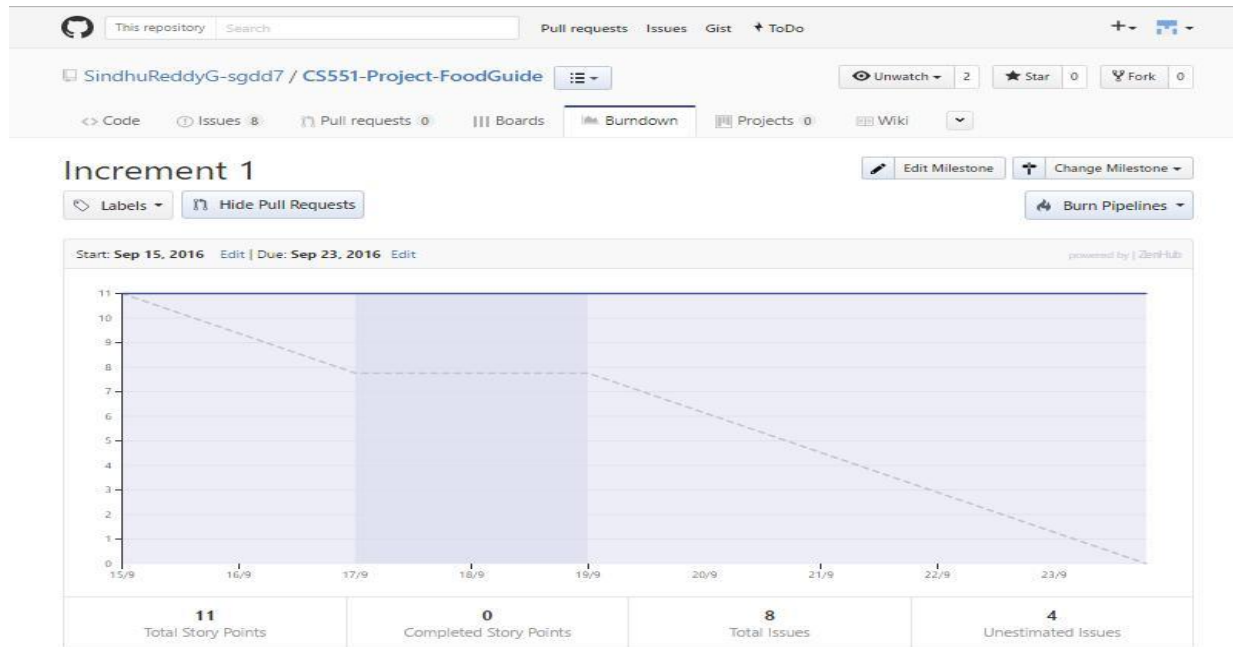


Zen Hub Board up to Increment 4:

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:



IV. 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 text field 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

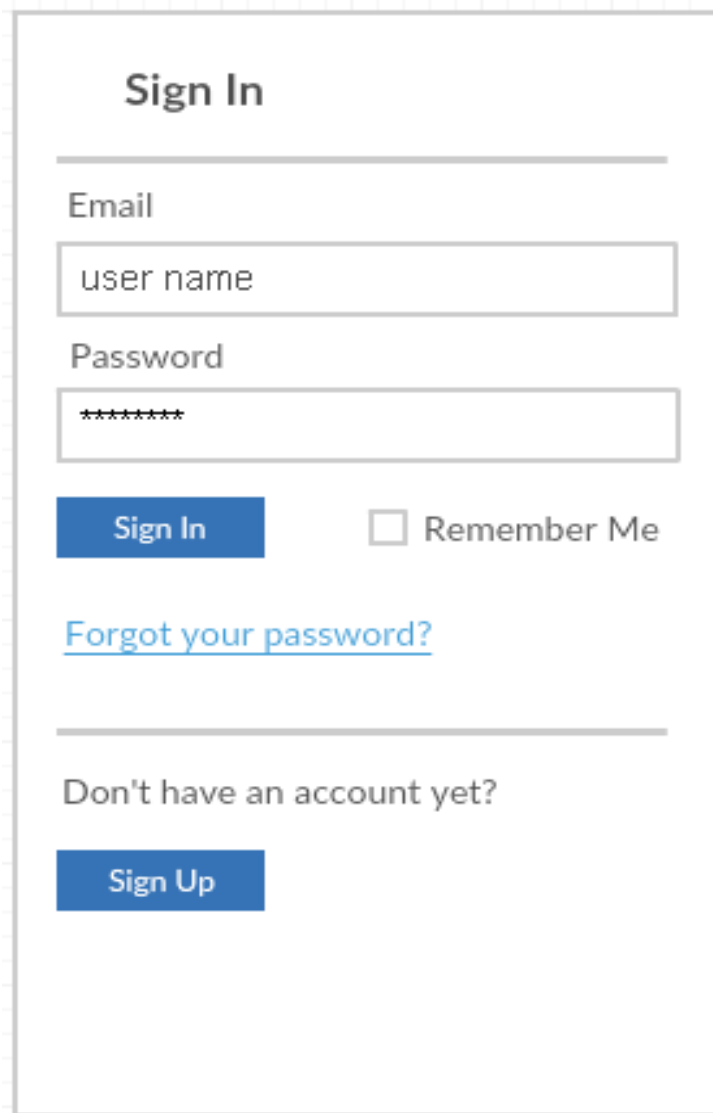
- We are using the google maps API to display the restaurant location in google maps.

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

V. Detail Design of Features:

Wireframes:

Login page:



The wireframe shows a login page layout. At the top, the text "Sign In" is centered. Below it is a horizontal line. The label "Email" is positioned above a text input field containing the placeholder text "user name". Below the email field is the label "Password" above another text input field containing seven asterisks "*****". To the left of the password field is a blue button labeled "Sign In". To the right of the "Sign In" button is a checkbox followed by the text "Remember Me". Below these elements is a blue link labeled "Forgot your password?". Another horizontal line follows. Below the line is the text "Don't have an account yet?". At the bottom is a blue button labeled "Sign Up".

Sign In

Email

Password

☐ Remember Me

[Forgot your password?](#)

Don't have an account yet?

Register page:

Sign Up

Full Name

Name

Email

mark@createlly.com

User Name

username

Password

Confirm

mark@createlly.com

Sign Up



Change Password page:

-
-
-

Change Password:

Old Password:

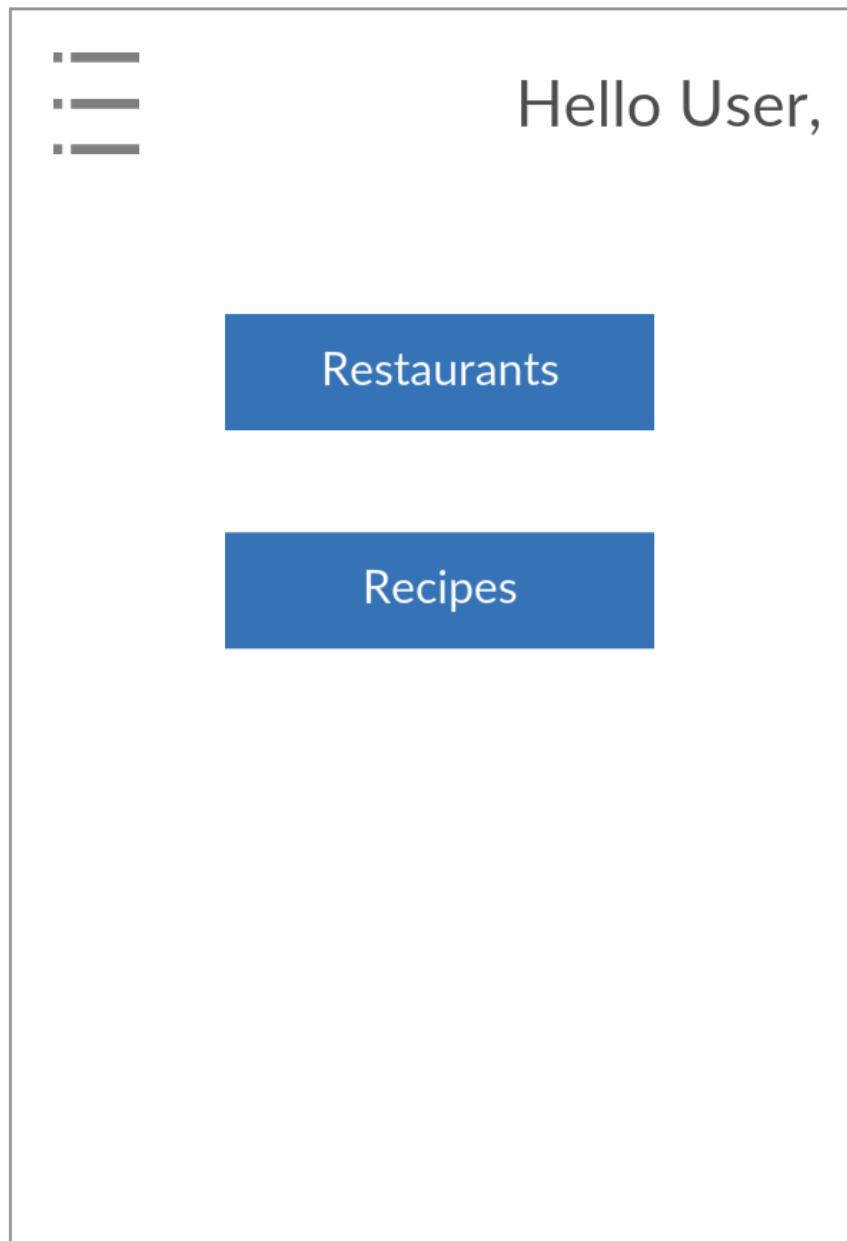
New Password:

Re Enter New Password:

Cancel

Update

Aplication main search page:



Translate Page:

-

-
-
-

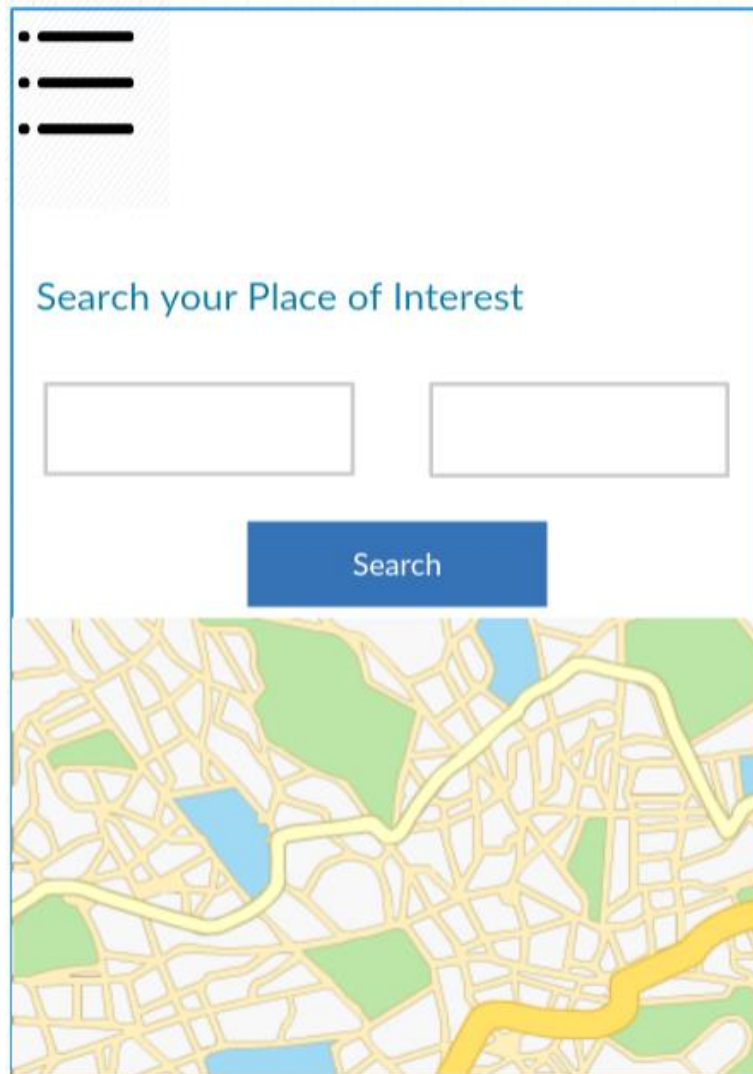
Enter Text

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 page. 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 divided into two input fields. Below the input fields is a blue "Search" button. At the bottom of the page 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

[Menu](#)

[Recipe](#)

Restaurant 2

[Menu](#)

[Recipe](#)

Restaurant 3

[Menu](#)

[Recipe](#)

Restaurant 4

[Menu](#)

[Recipe](#)

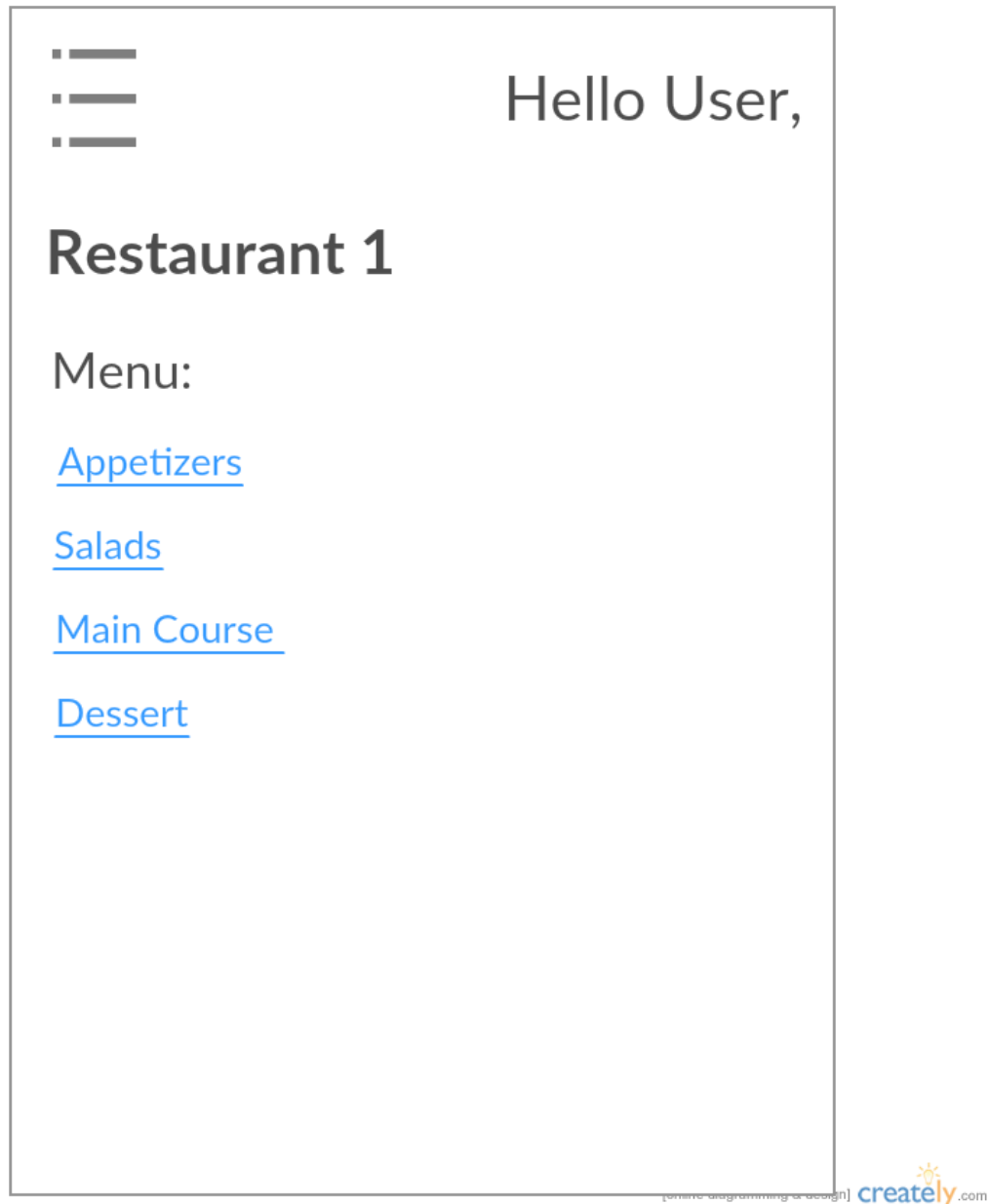
Restaurant 5

[Menu](#)

[Recipe](#)

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

Recipe Result page:

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



Hello User,

Recipe List

- [Item 1](#)
- [Item 1](#)
- [Item 1](#)
- [Item 1](#)
- [Item 1](#)

Ingredient result:



Hello User,

Item 1

Ingredient 1

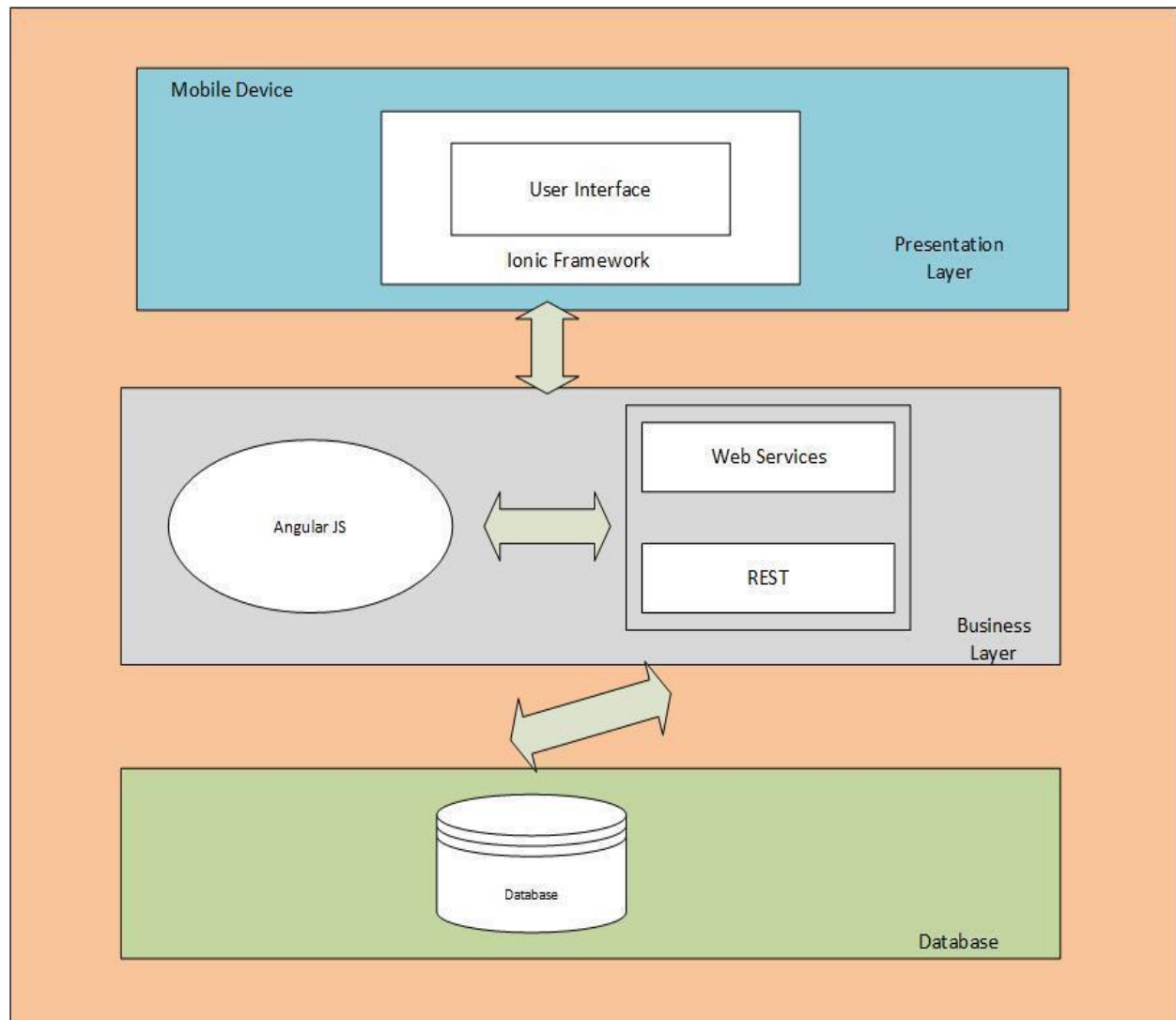
Ingredient 2

Ingredient 3

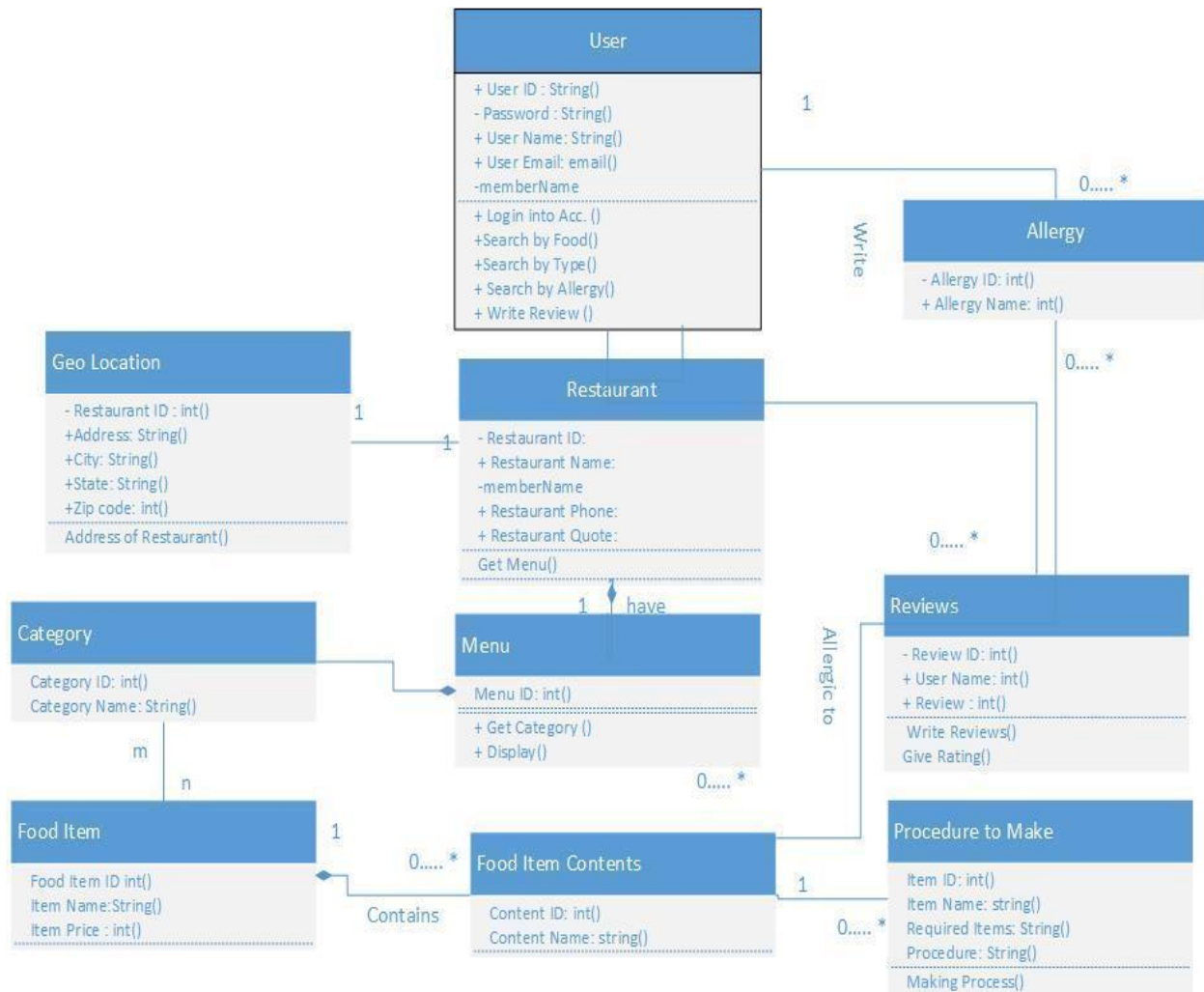
Ingredient 4

Ingredient 5

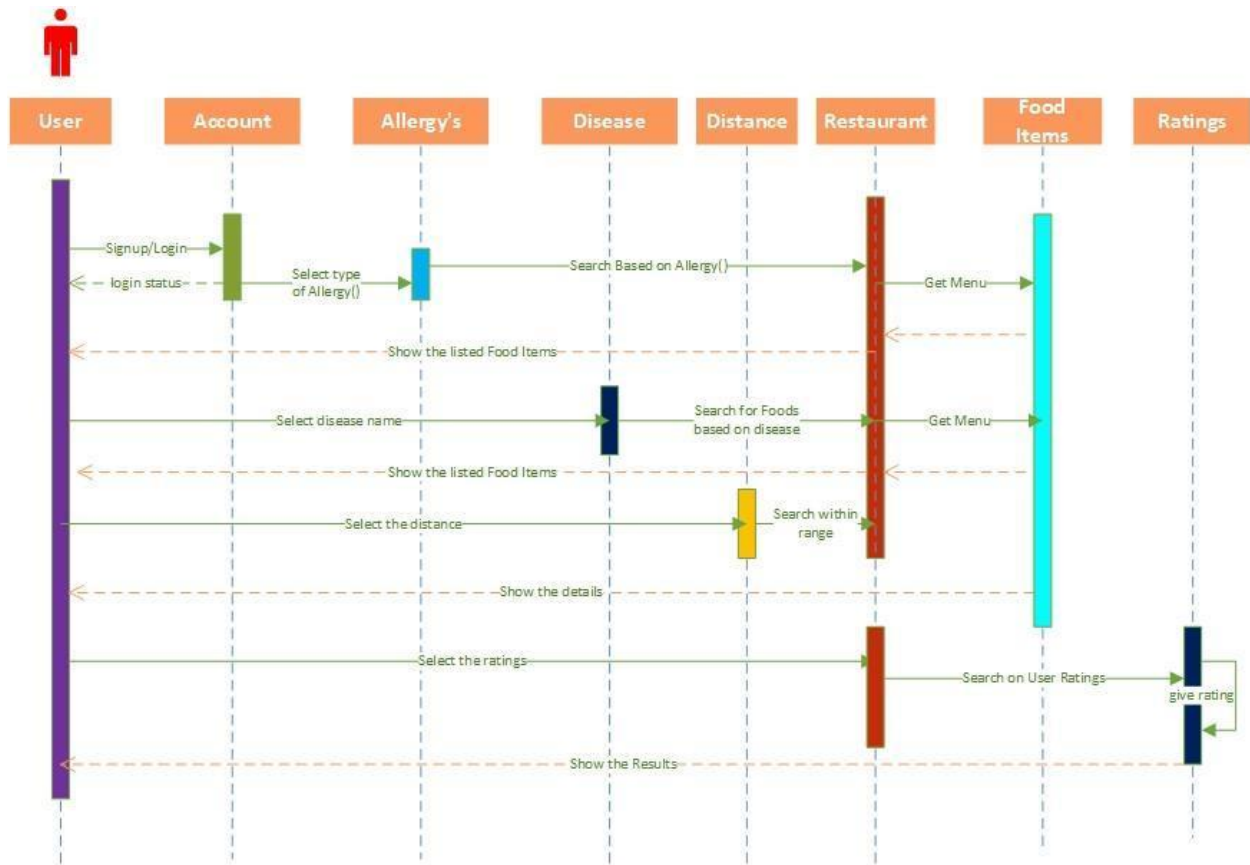
Architecture Diagram:



UML Class Diagram:



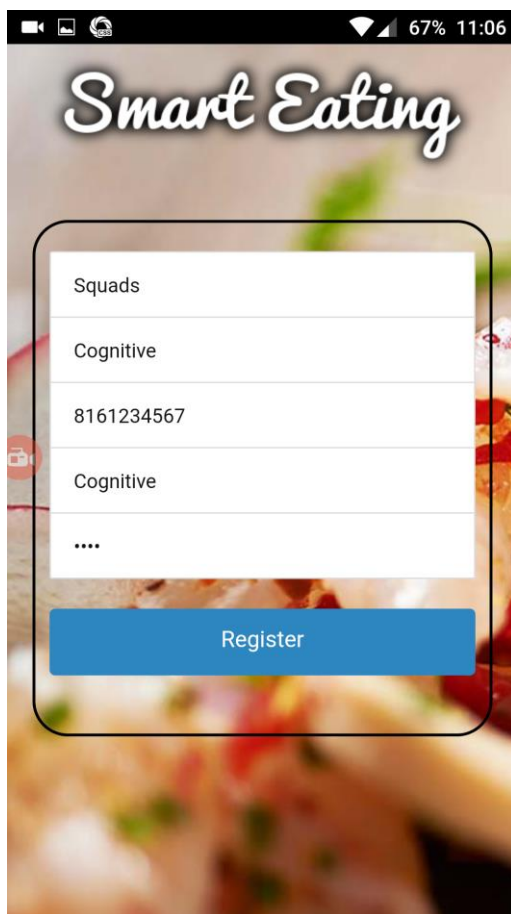
UML Sequence Diagram:



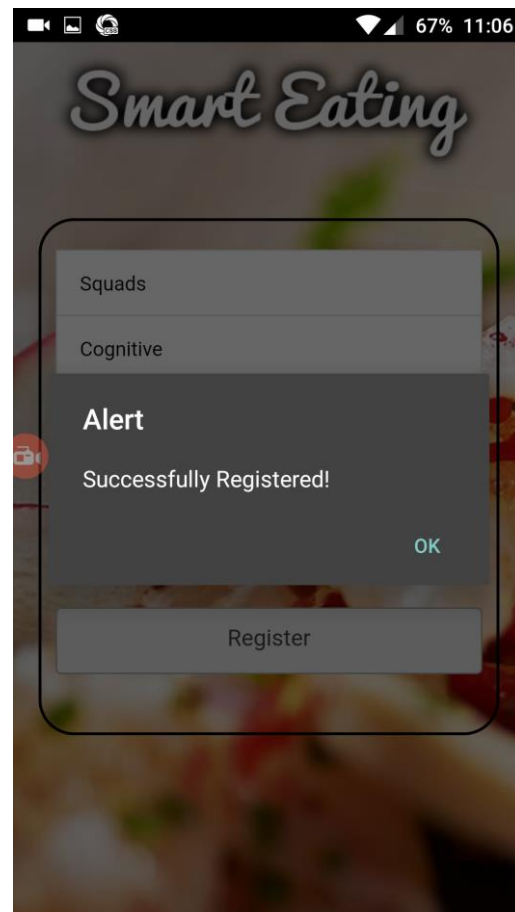
VI. Project Deployment: Android Application:

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).



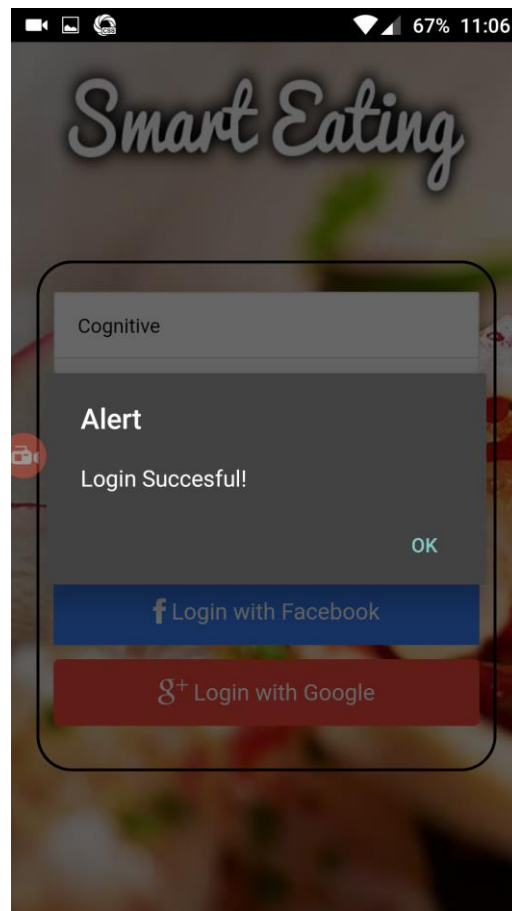
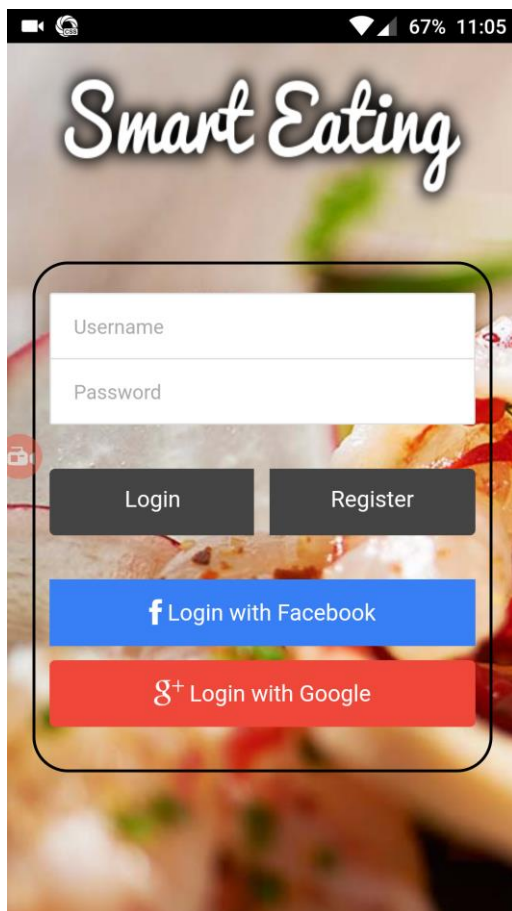
The image shows the registration screen of the 'Smart Eating' app. The title 'Smart Eating' is at the top in a white script font. Below it is a registration form with five input fields: 'Squads', 'Cognitive', '8161234567', 'Cognitive', and a password field with four dots. A blue 'Register' button is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



The image shows the 'Smart Eating' app after successful registration. The title 'Smart Eating' is at the top. Below it is a grey alert box with the text 'Alert' and 'Successfully Registered!'. An 'OK' button is in the bottom right of the alert box. Below the alert box is a grey 'Register' button. The background is a blurred image of food.

User Login:

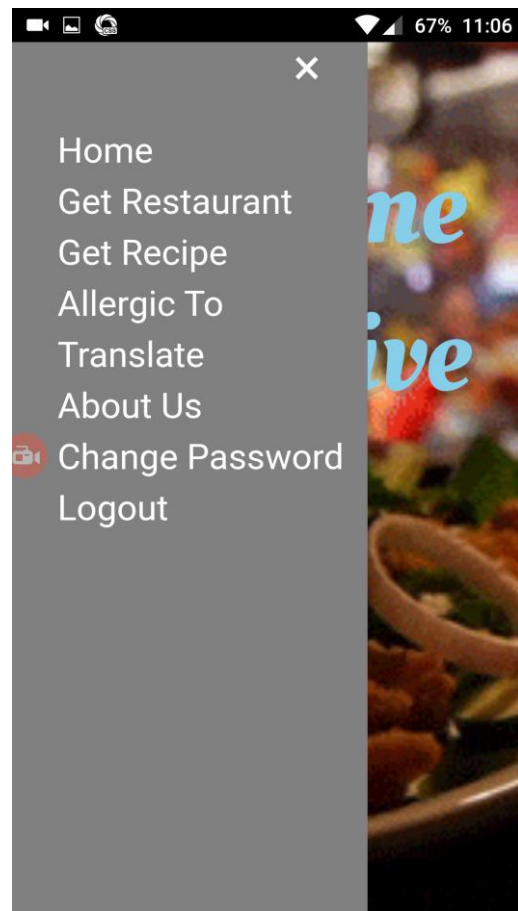
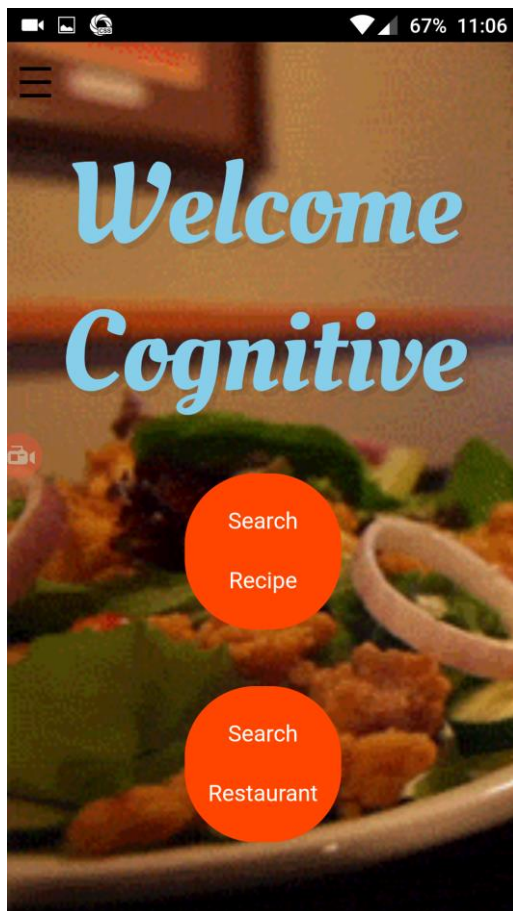
In this page user is able to login into his account with the valid credentials.



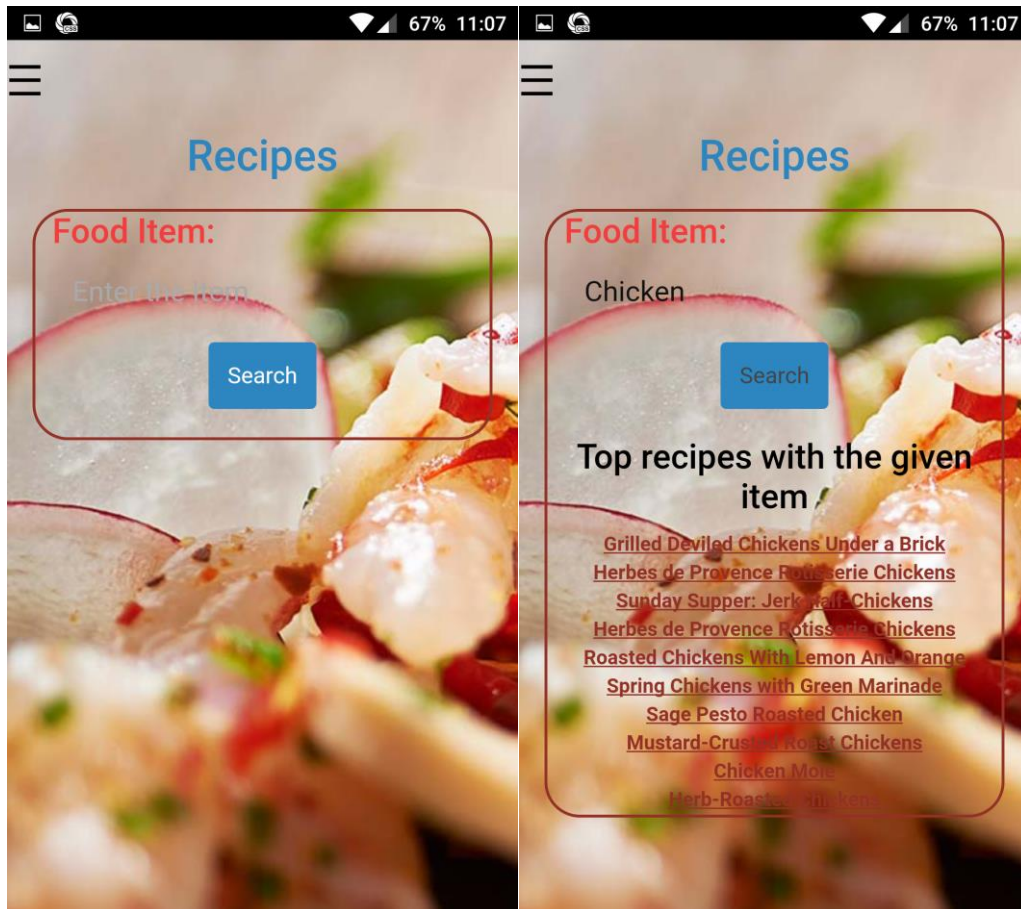
We will validate the user credentials, if they match the online database username and password it will give the user a successful login pop message and then redirected to the home page.

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



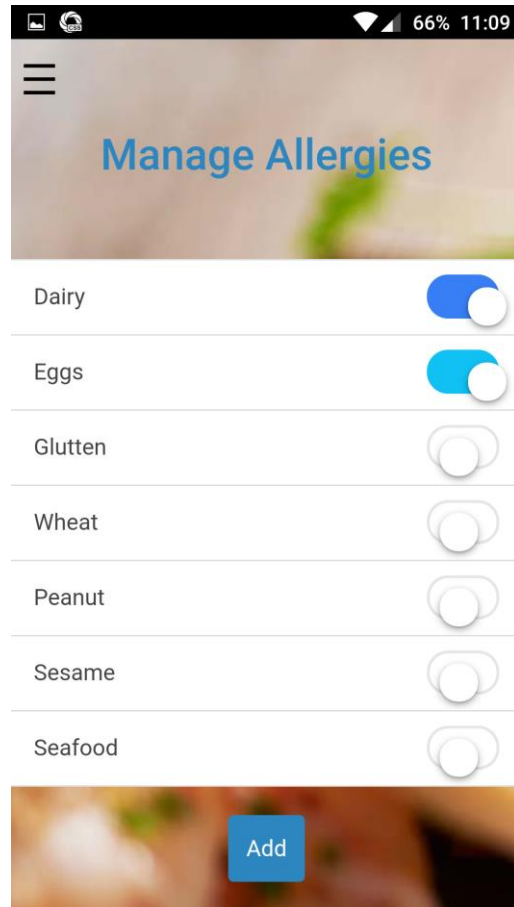
Ingredients Result :



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

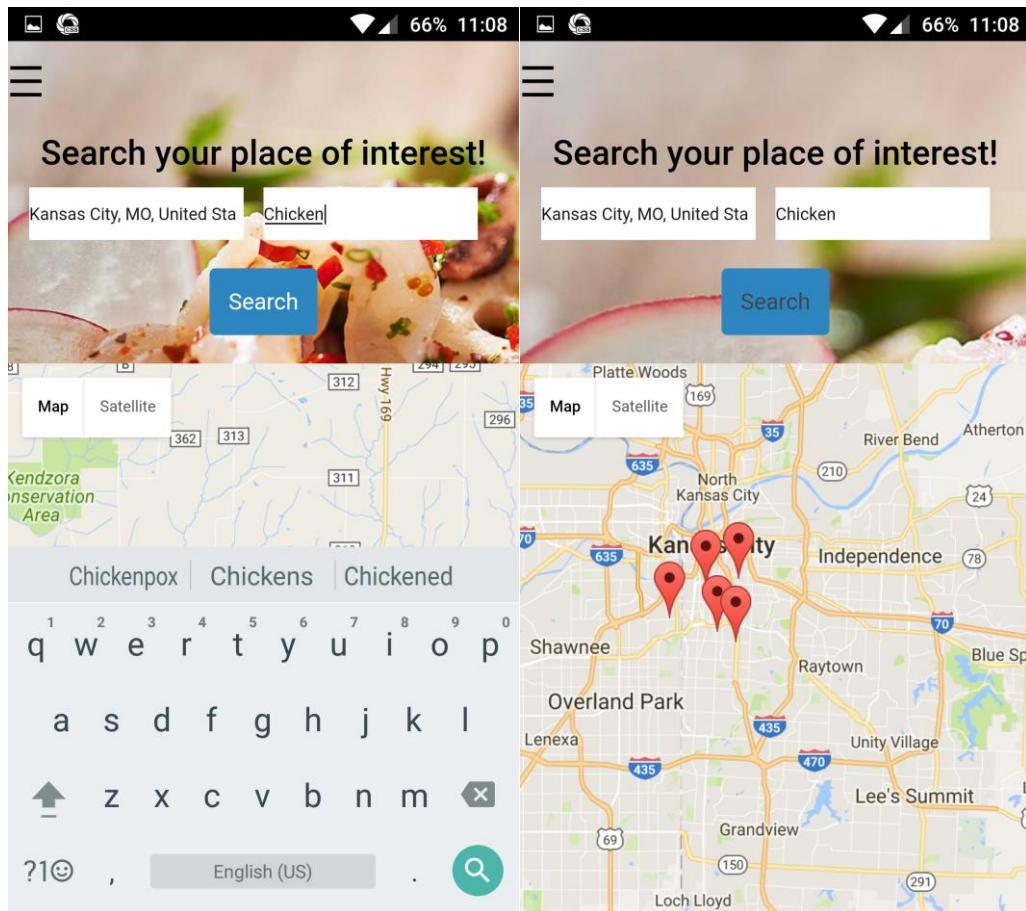
Allergies :

User can select items which are allergic to him.



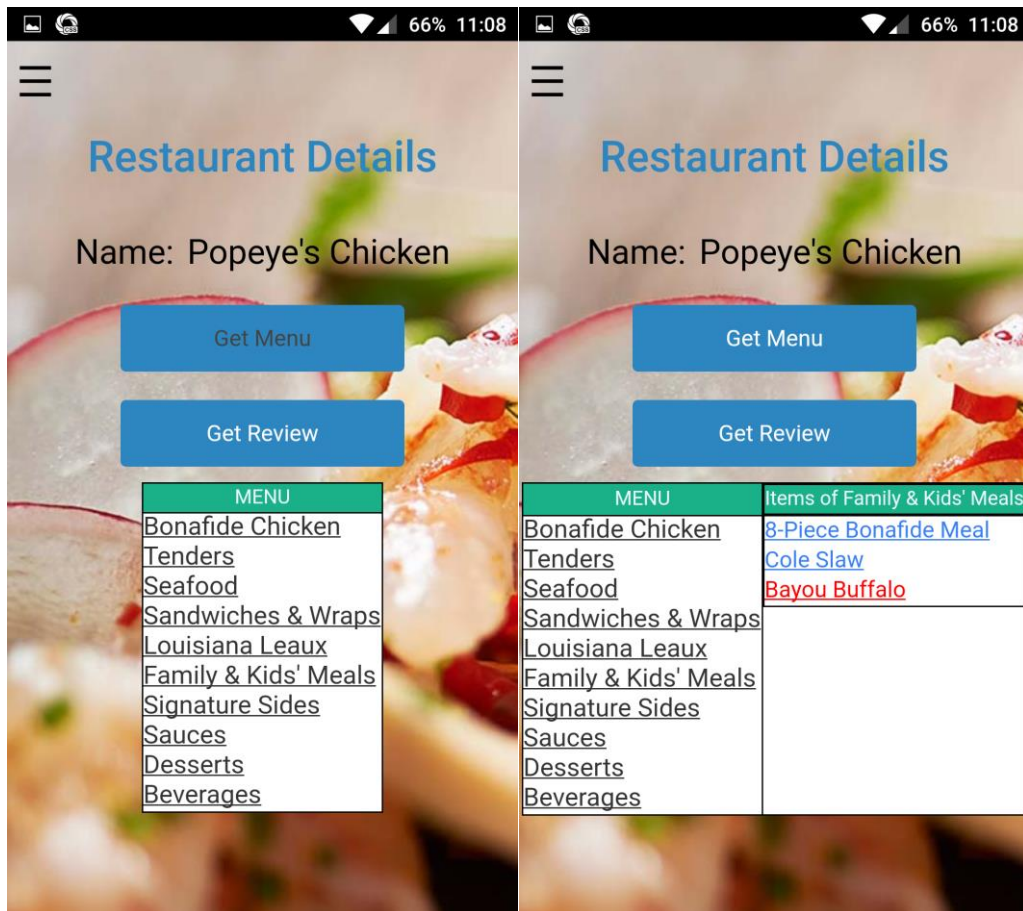
Restaurant Search:

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.

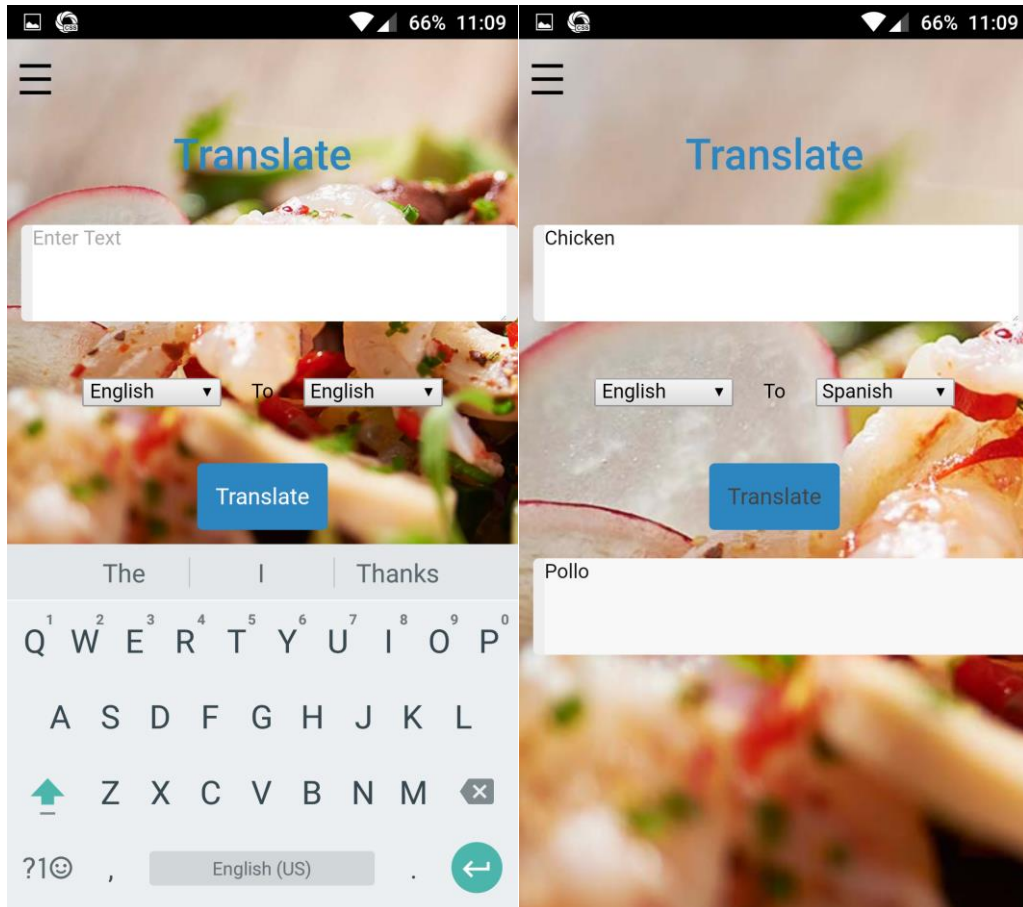


After getting the results we will display the restaurant name and menu and reviews from the previous users. Menu button will show the restaurant menu with the item names.

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



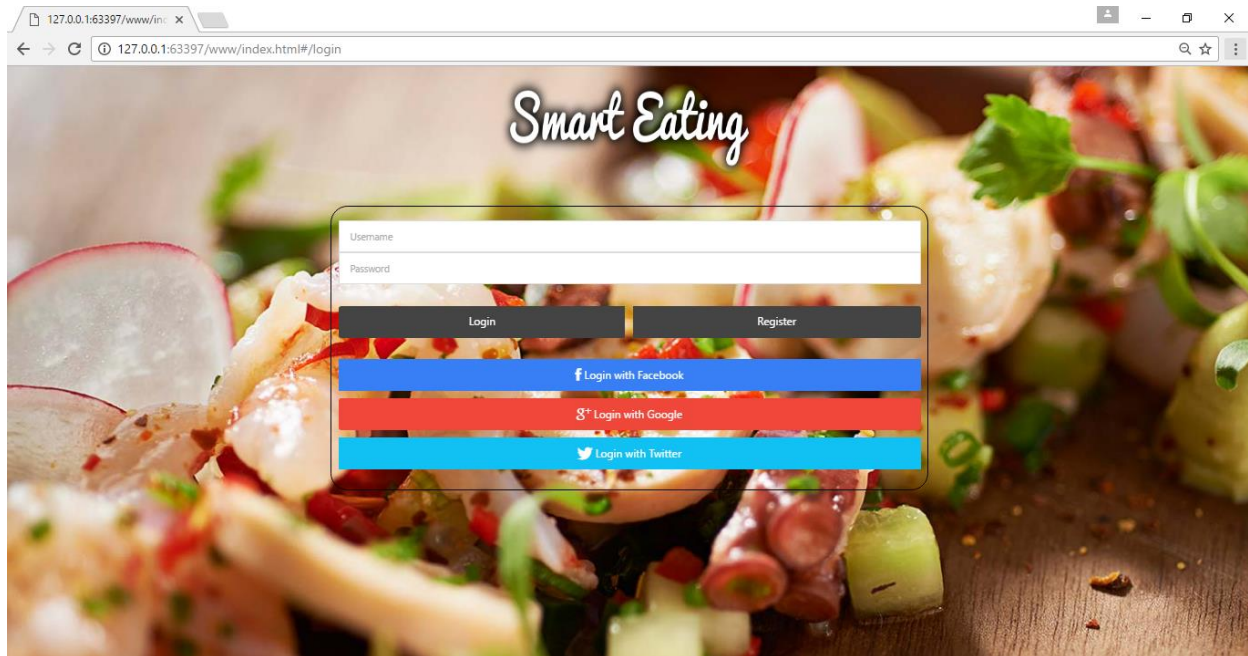
Translate page :



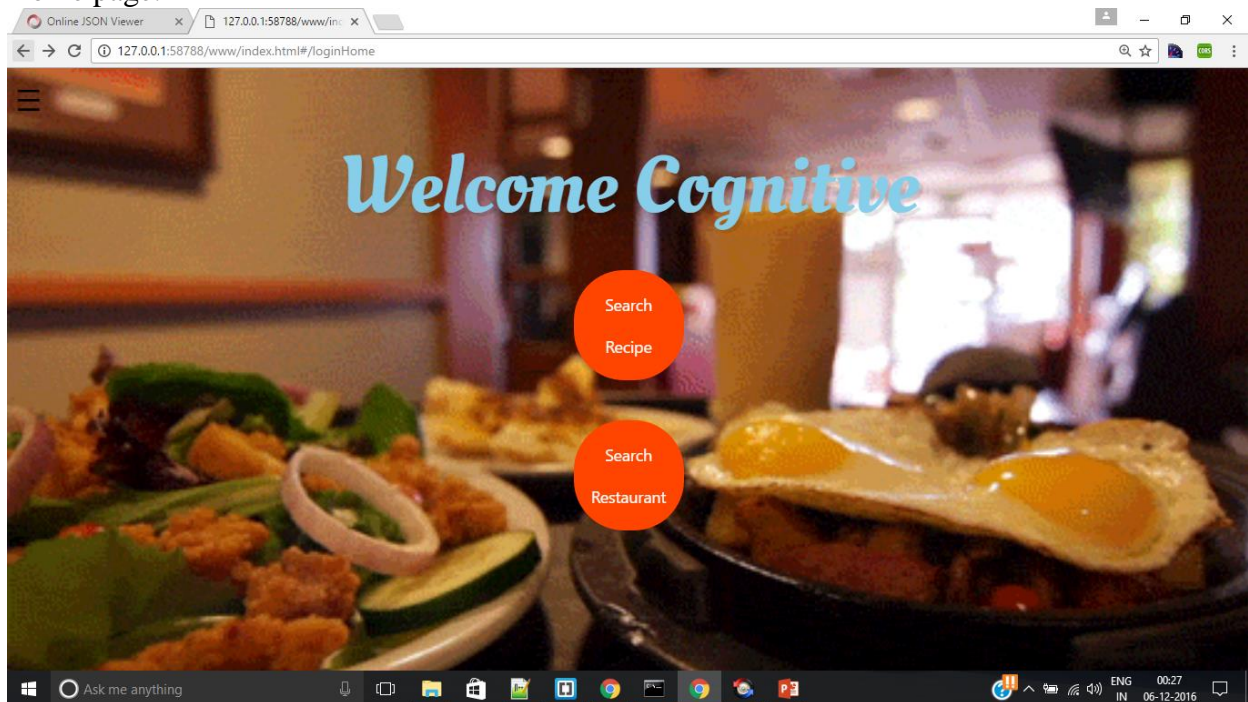
Web Application :

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.

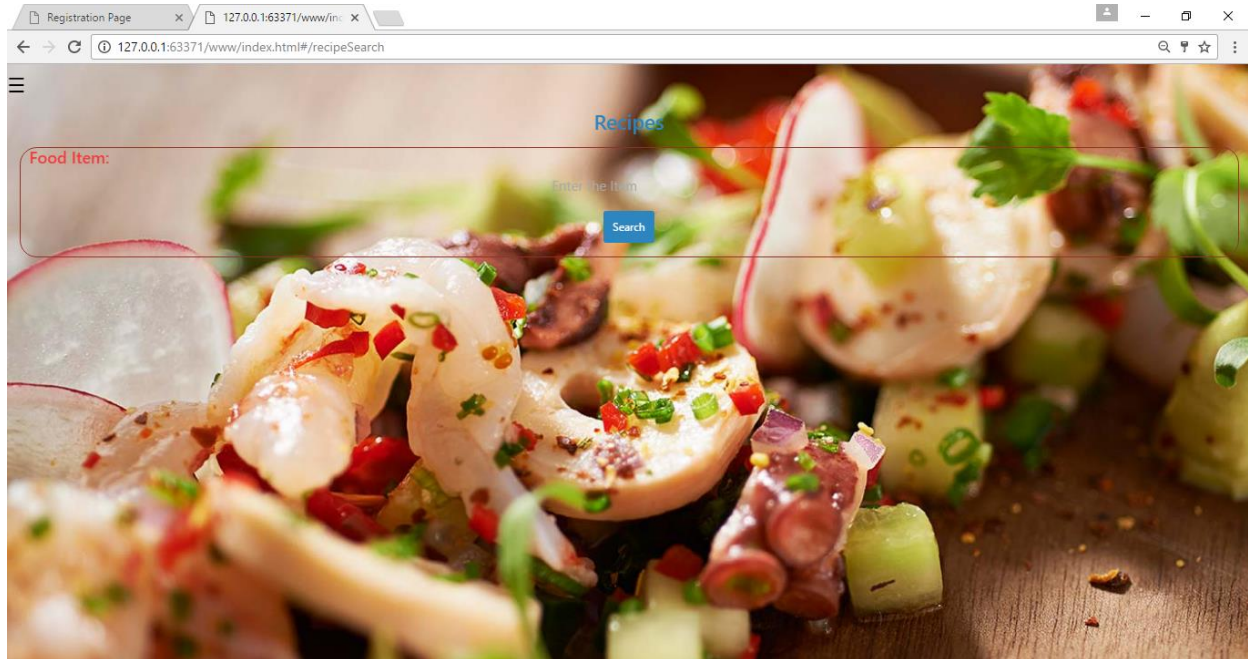
Web application login:



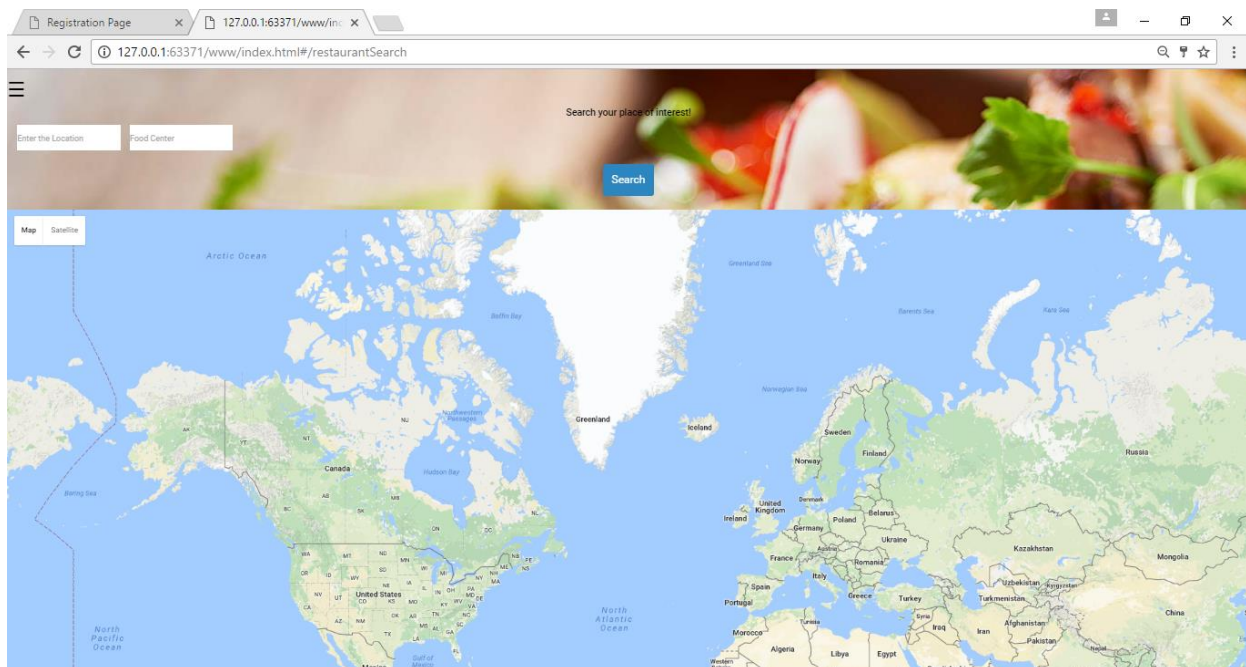
Home page:



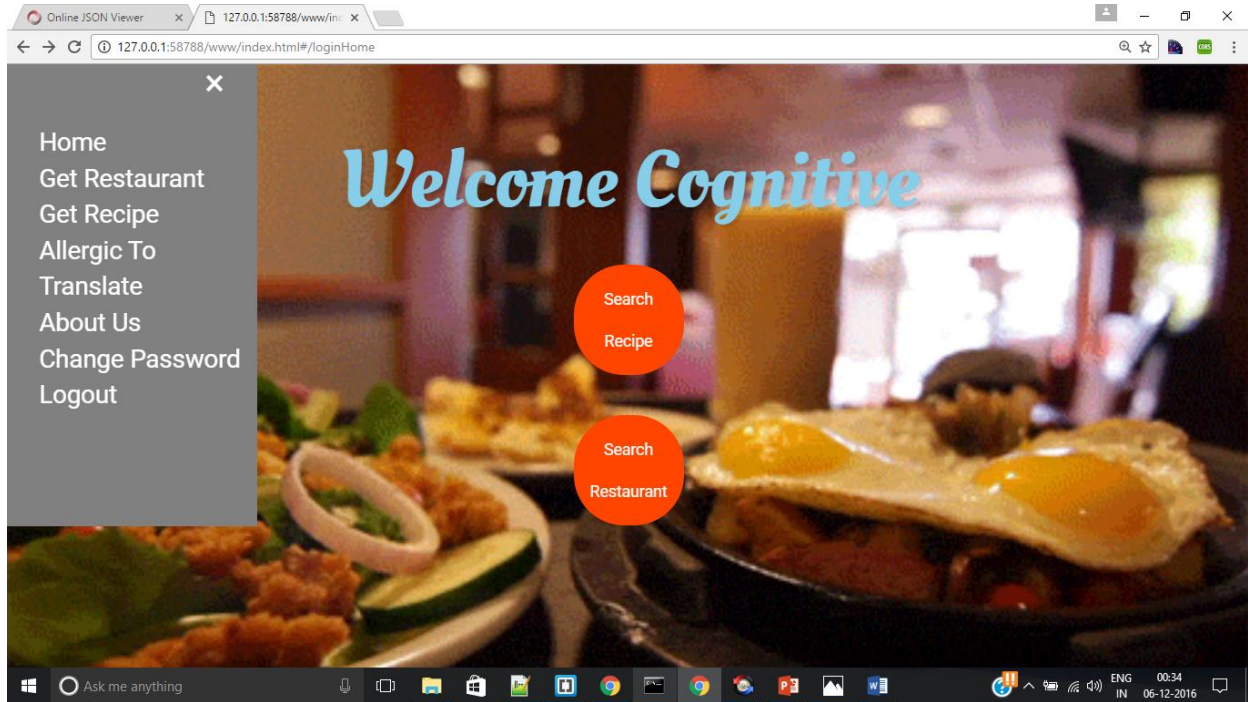
Search Recipe:



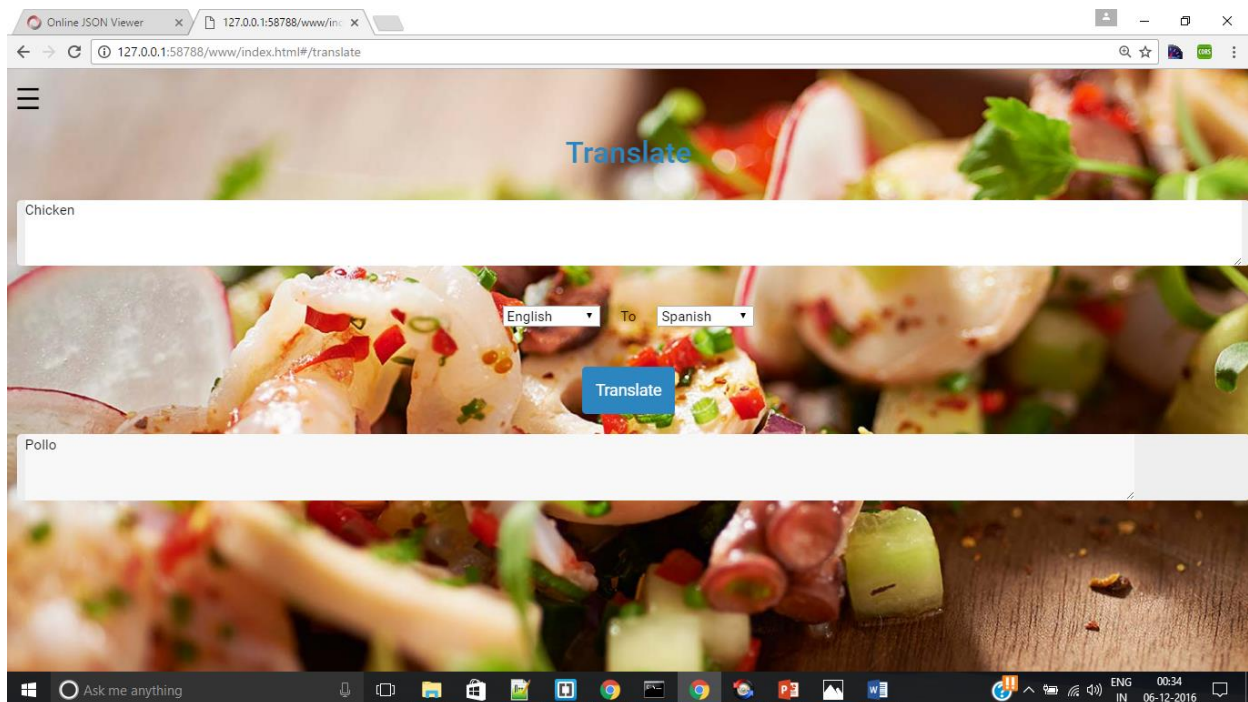
Search Restaurant:



Side Menu :



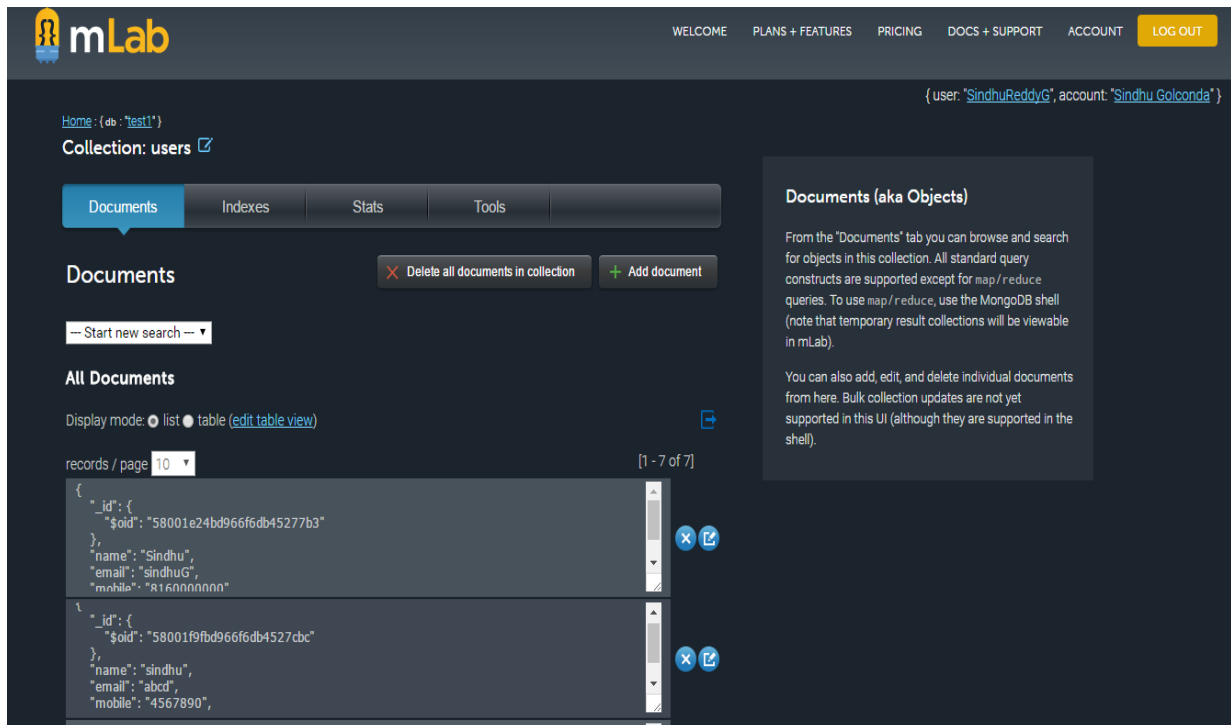
Translate Page :



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 user is logged in as { user: "SindhuReddyG", account: "Sindhu Golconda" }. The main content area shows the 'Collection: users' with 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' (selected over 'table'). The records per page are set to 10. The first two documents are visible:

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

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

Each document has edit and delete icons. A sidebar on the right titled 'Documents (aka Objects)' provides instructions on how to use the interface for browsing, searching, and managing documents.

VII. GITHUB URL:

Source code GITHUB link is provide below:

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

VIII. Project Management:

- **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, Advaith, Uday
- **Application testing:** Deployed application is then tested using JLint and YSlow for better performance.
 - Contributors: Advaith, Uday
- **Restaurant Review:** Reviews of selected restaurants are retrieved using IBM Watson API.
 - Contributors: Uday, Sindhu

IX. 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

X. Project Video:

Youtube Link: <https://www.youtube.com/watch?v=EKLqCITXPWY&feature=youtu.be>

XI. Bibliography:

<https://developers.google.com/knowledge-graph/how-tos/search-widget>
<https://developer.foursquare.com/overview/realtime>
<https://webdesign.tutsplus.com/articles/making-websites-location-aware-with-html5-geolocation--webdesign-10495>
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<http://www.w3schools.com/js/default.asp>
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<http://mycaption.com/resources/technology/voice-recognition>
<https://colorlib.com/wp/html5-and-css3-login-forms/>
<https://cordova.apache.org/>