Smart Eating - Food Guide

Increment 2

Project group 10

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Uday Kiran Chowdary Mallineni - -28
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CS5551 - Advanced Software Engineering
University of Missouri - Kansas City
October 14, 2016

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.

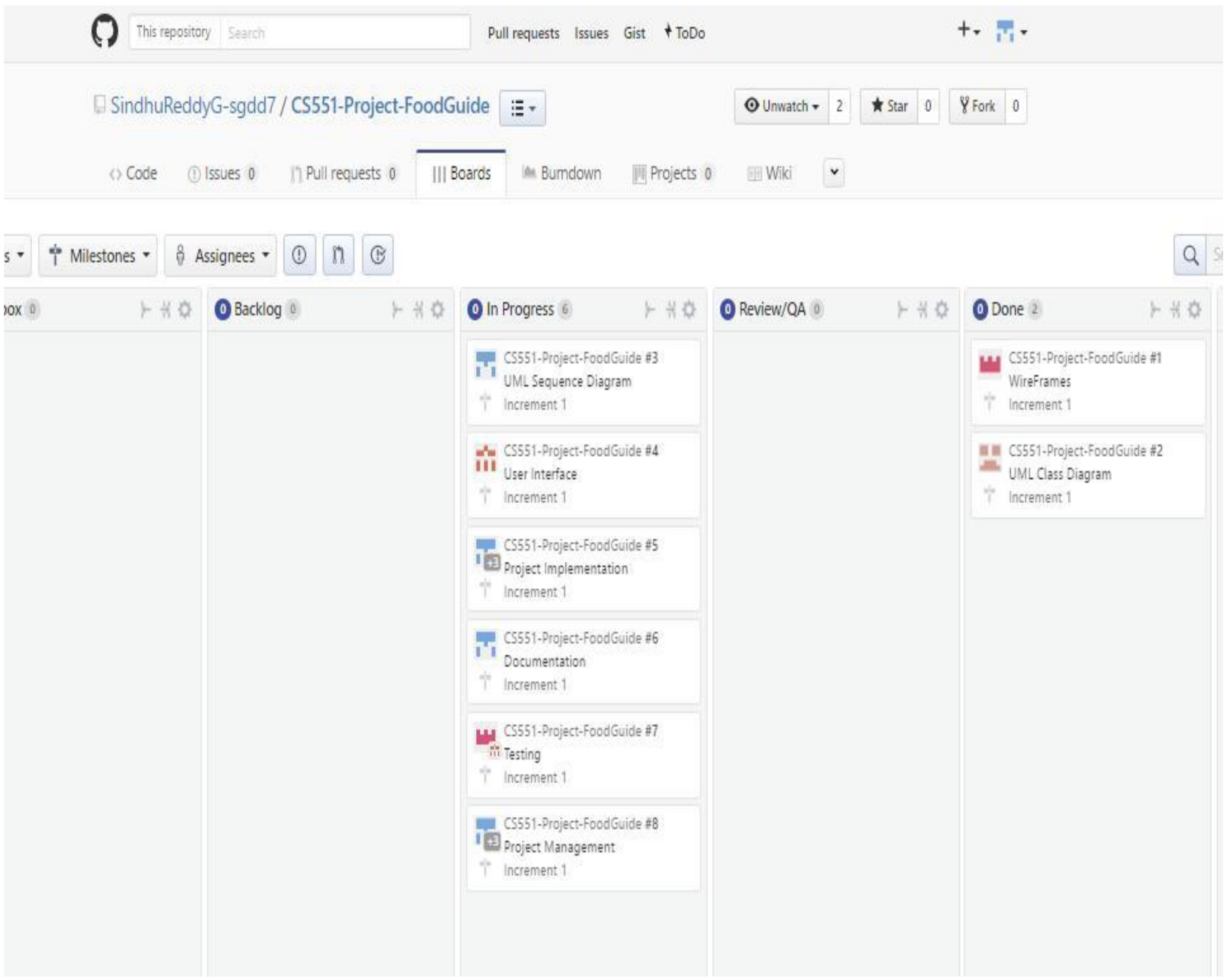
III. Project Plan

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.



Backlog 0

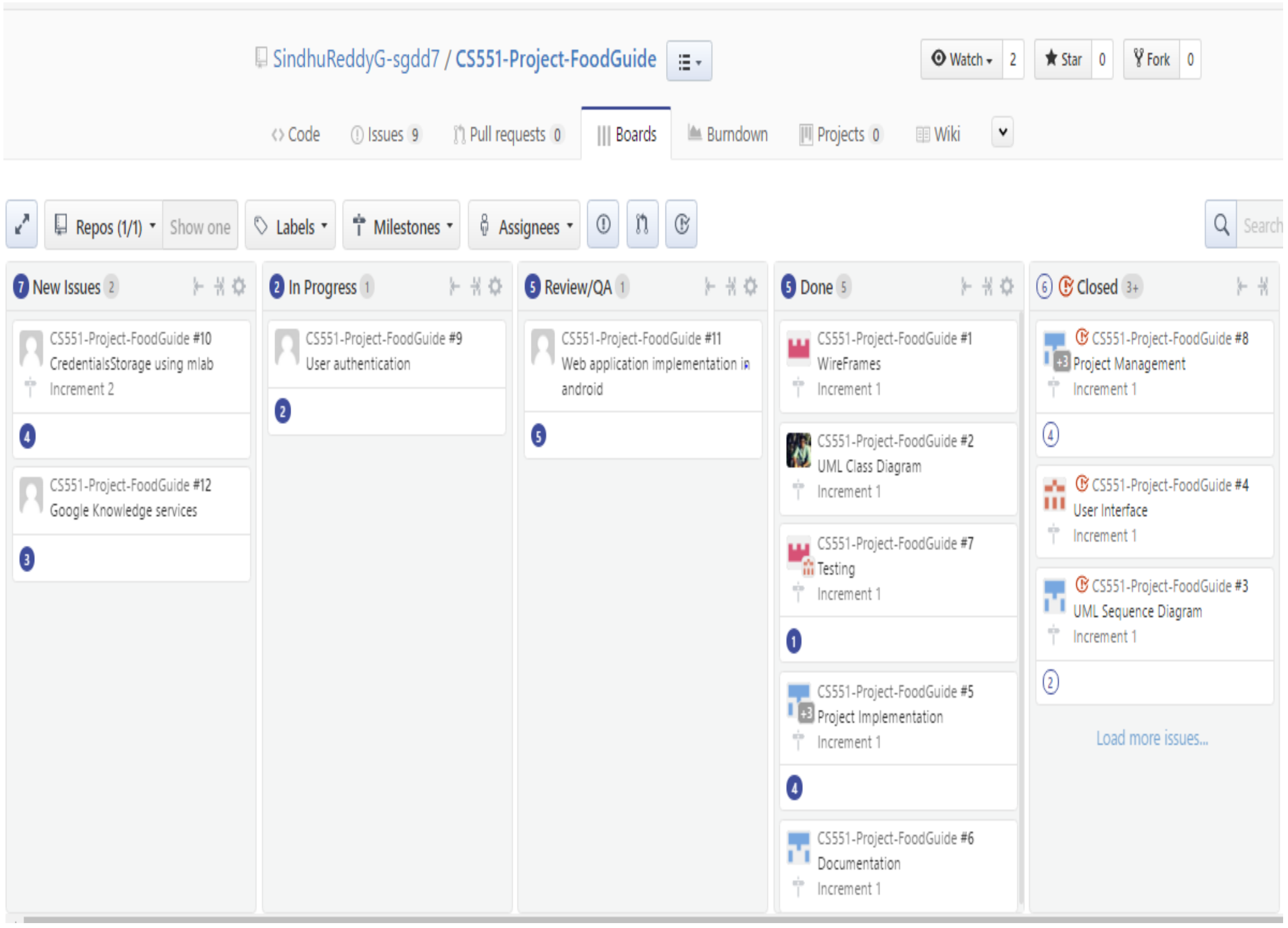
In Progress 6
- CS551-Project-FoodGuide #3 UML Sequence Diagram Increment 1
- CS551-Project-FoodGuide #4 User Interface Increment 1
- CS551-Project-FoodGuide #5 Project Implementation Increment 1
- CS551-Project-FoodGuide #6 Documentation Increment 1
- CS551-Project-FoodGuide #7 Testing Increment 1
- CS551-Project-FoodGuide #8 Project Management Increment 1

Review/QA 0

Done 2
- CS551-Project-FoodGuide #1 WireFrames Increment 1
- CS551-Project-FoodGuide #2 UML Class Diagram Increment 1

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.



7 New Issues 2

CS551-Project-FoodGuide #10
CredentialsStorage using mlab
Increment 2
4

CS551-Project-FoodGuide #12
Google Knowledge services
3

2 In Progress 1

CS551-Project-FoodGuide #9
User authentication
2

5 Review/QA 1

CS551-Project-FoodGuide #11
Web application implementation in android
5

5 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
1

CS551-Project-FoodGuide #5
Project Implementation
Increment 1
4

CS551-Project-FoodGuide #6
Documentation
Increment 1

6 Closed 3+

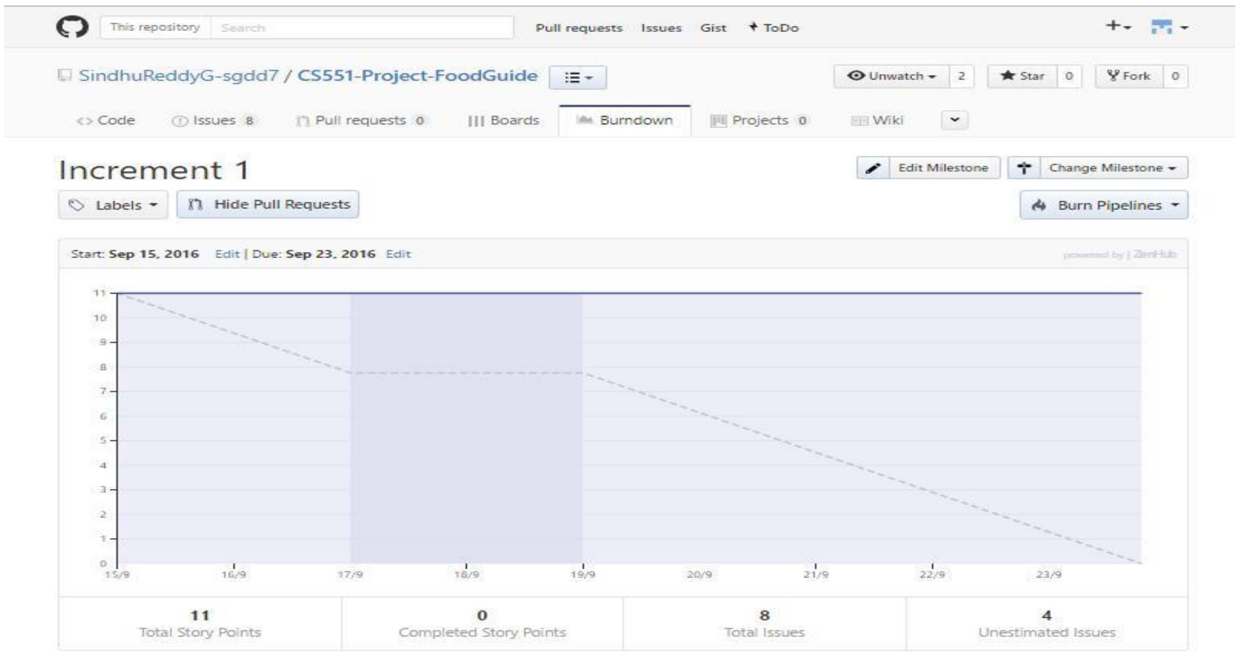
CS551-Project-FoodGuide #8
Project Management
Increment 1
4

CS551-Project-FoodGuide #4
User Interface
Increment 1

CS551-Project-FoodGuide #3
UML Sequence Diagram
Increment 1
2

Load more issues...

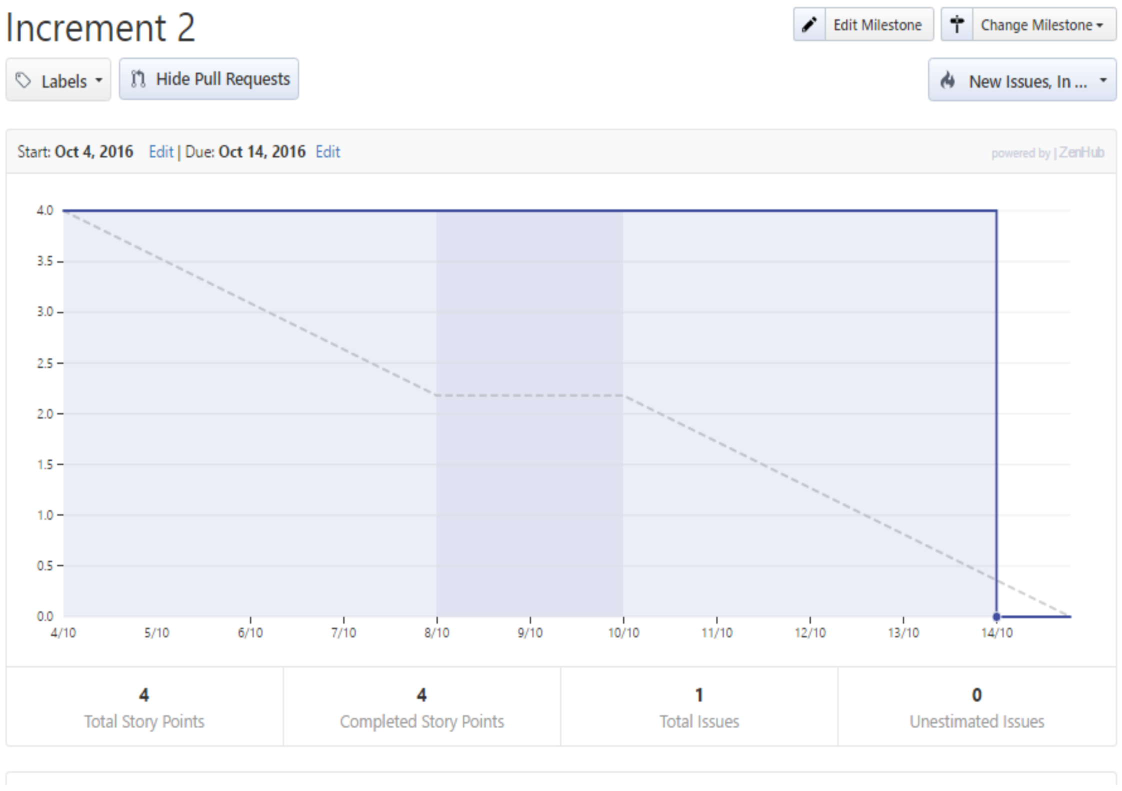
Burndown Chart for Increment 1



Start: Sep 15, 2016 Edit | Due: Sep 23, 2016 Edit

11	0	8	4
Total Story Points	Completed Story Points	Total Issues	Unestimated Issues

Burndown Chart for Increment 2:



Start: Oct 4, 2016 Edit | Due: Oct 14, 2016 Edit

4	4	1	0
Total Story Points	Completed Story Points	Total Issues	Unestimated Issues

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. IBM Watson Services:

   - Used for getting the reviews for a selected restaurant.

   URL: http://gateway-a.watsonplatform.net/calls/text/TextGetTextSentiment

3. Google Knowledge graph search API:

   - Auto population of data in the textfield is implemented using this

   API. URL: https://developers.google.com/knowledge-graph/

4. SpeechToText API:

   - Used to convert Speech to text.

   URL: http://mycaption.com/resources/api

5. The Yummly Recipe API :
   - It is used to get all the recipe's and ingredients of the food items.

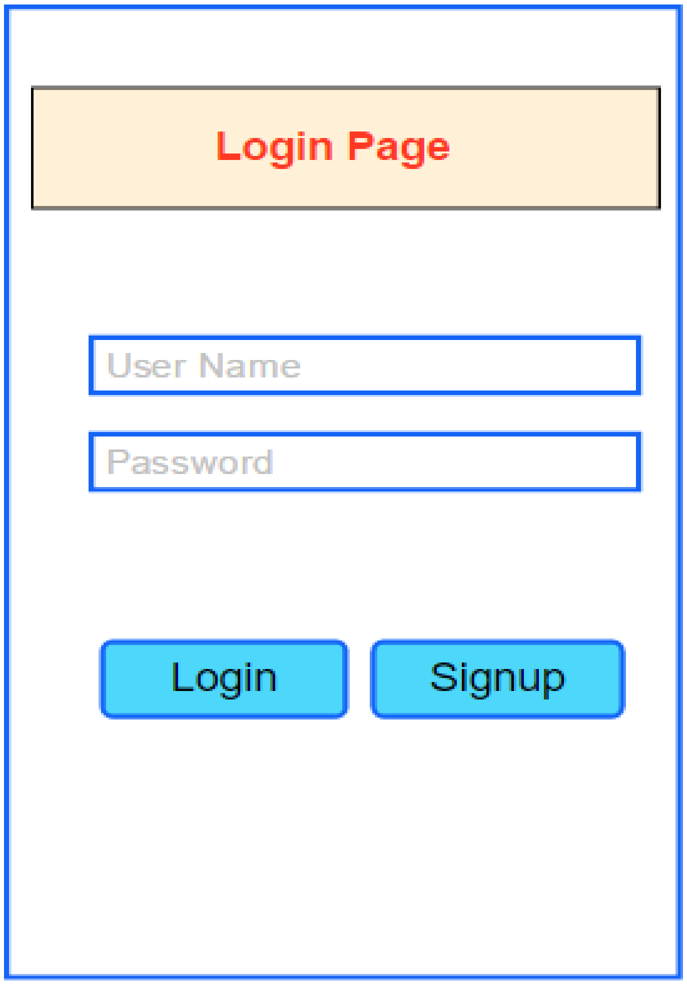
   URL: https://developer.yummly.com
6. Mlab online database service
   - By using this service, we are implementing the online user account database to login

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

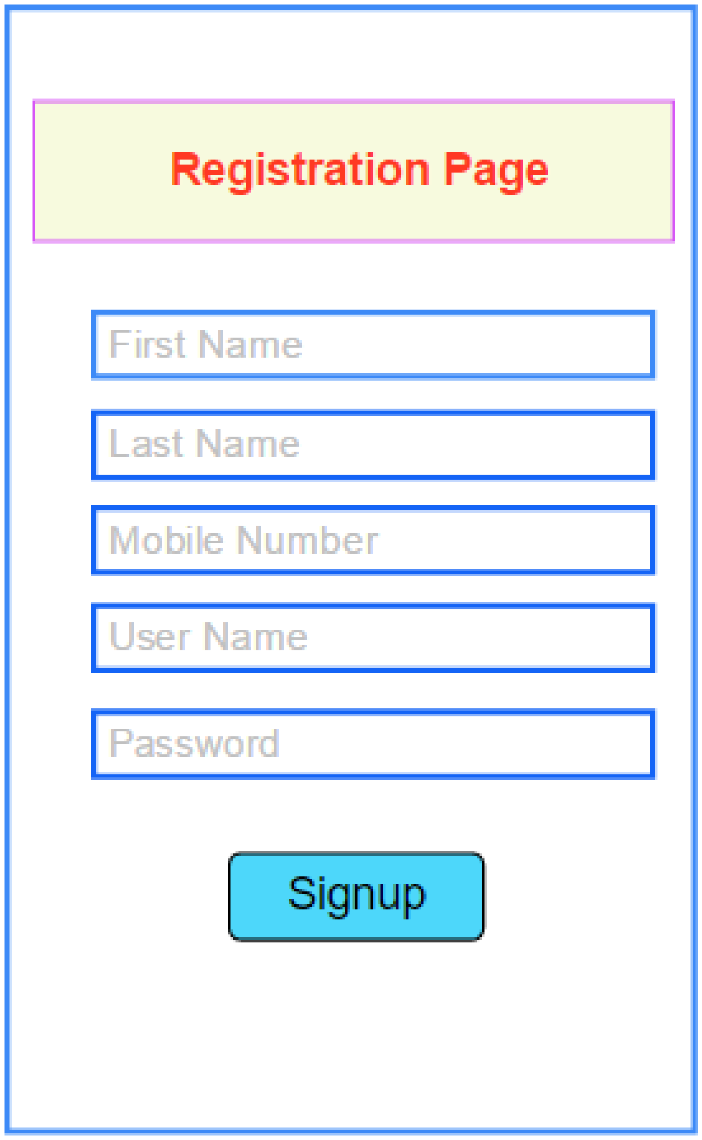
Detail Design of Features:

Wireframes:

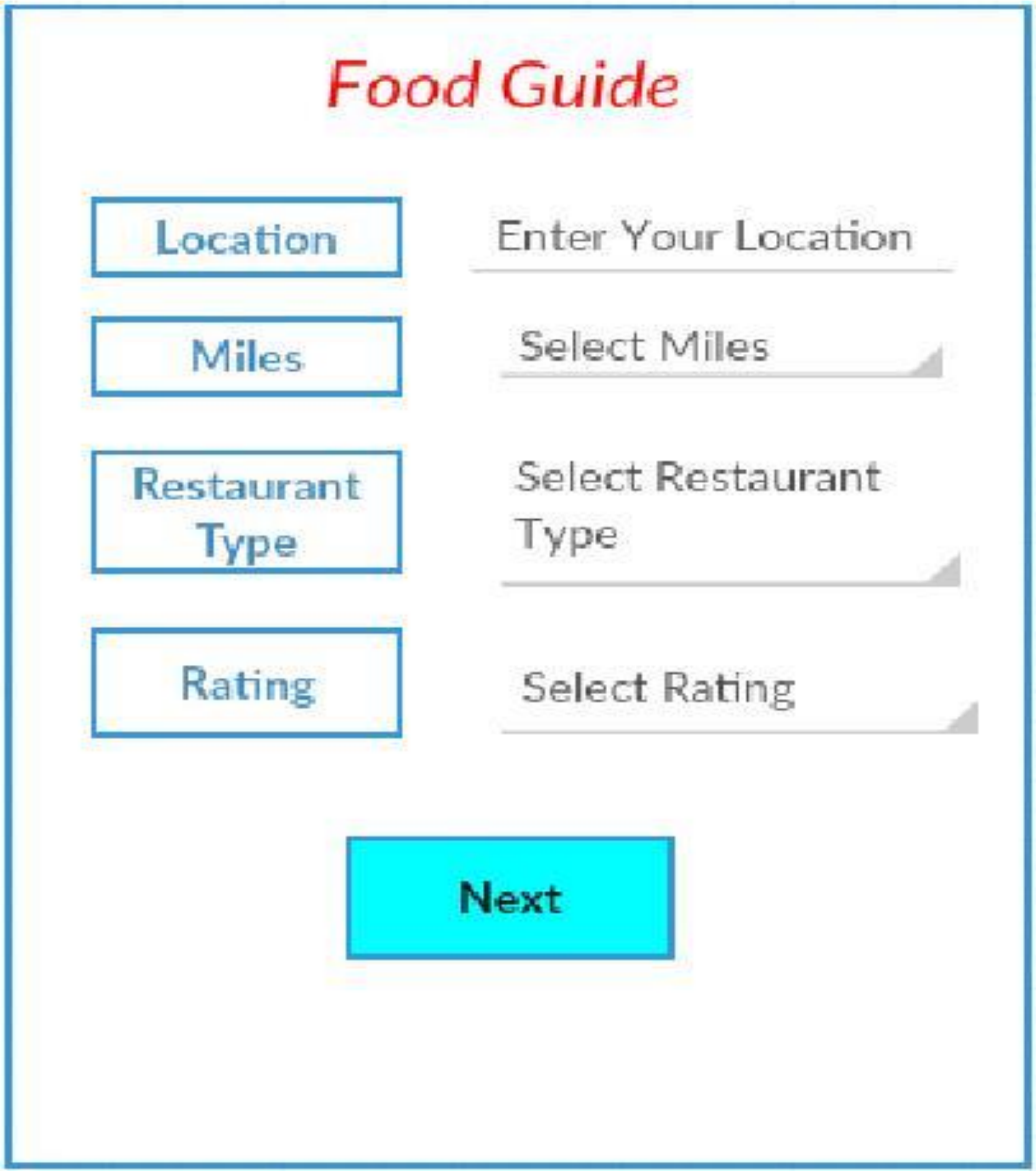
Login page:



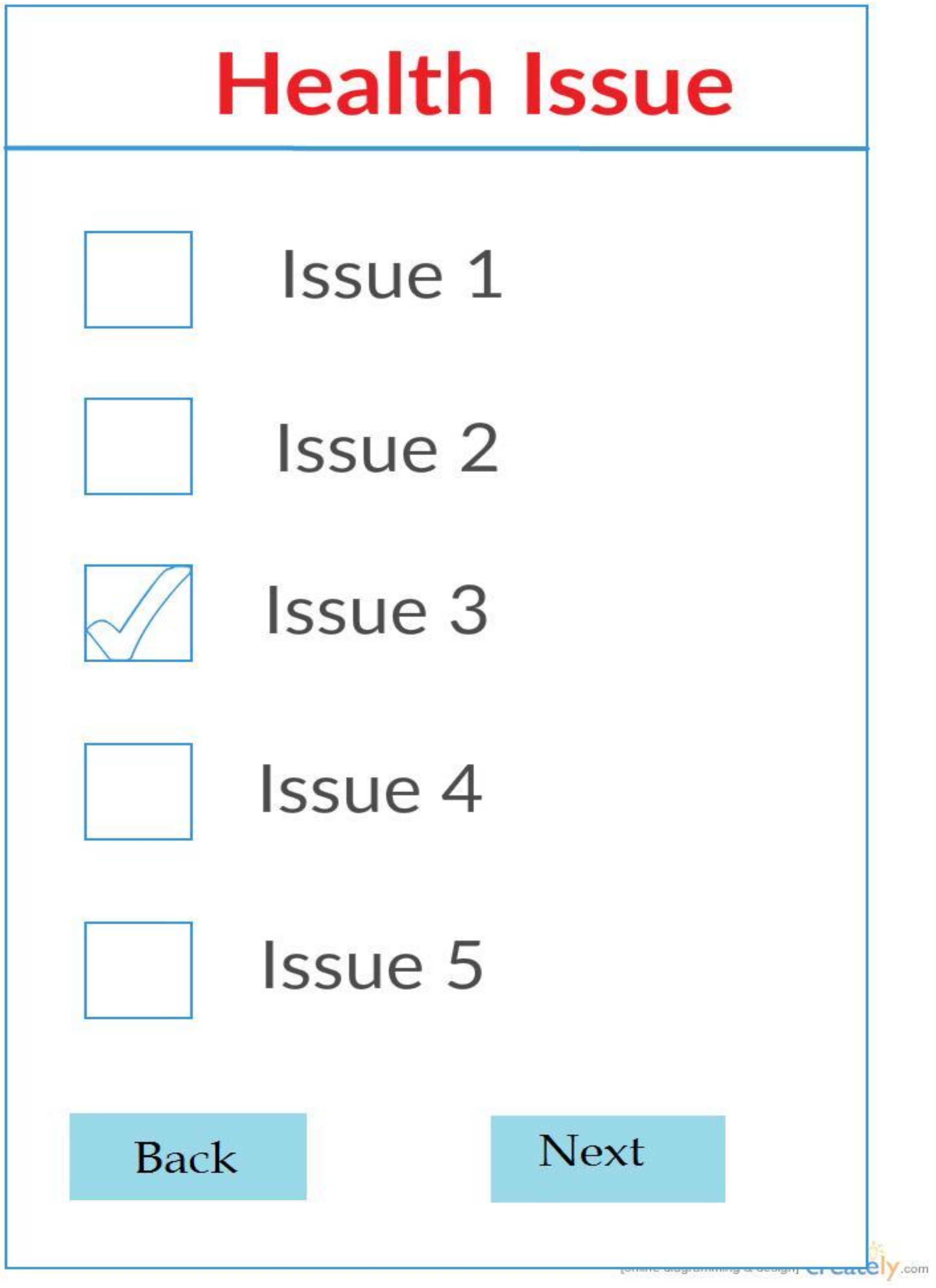
Register page:



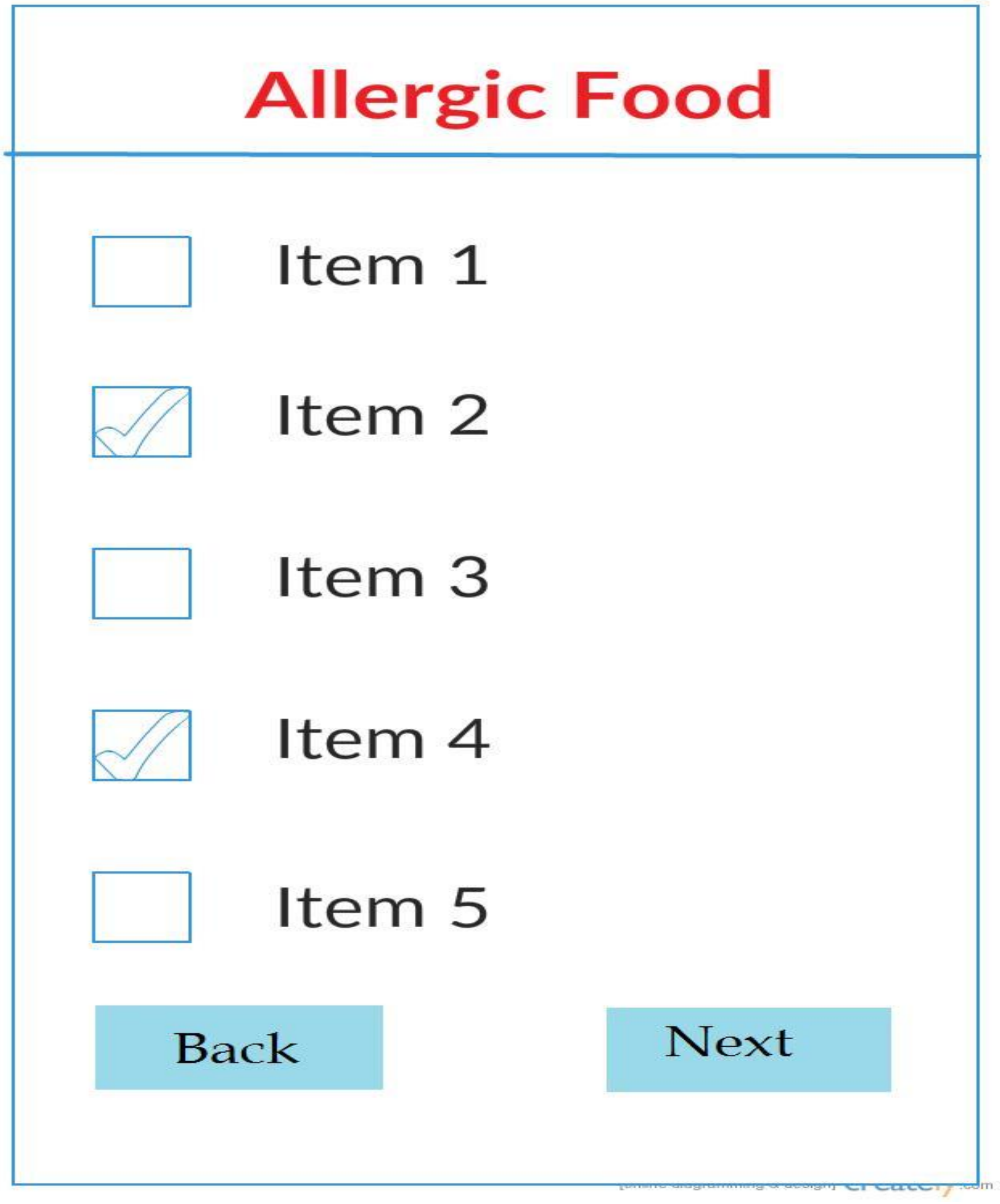
Mobile app. main search page:



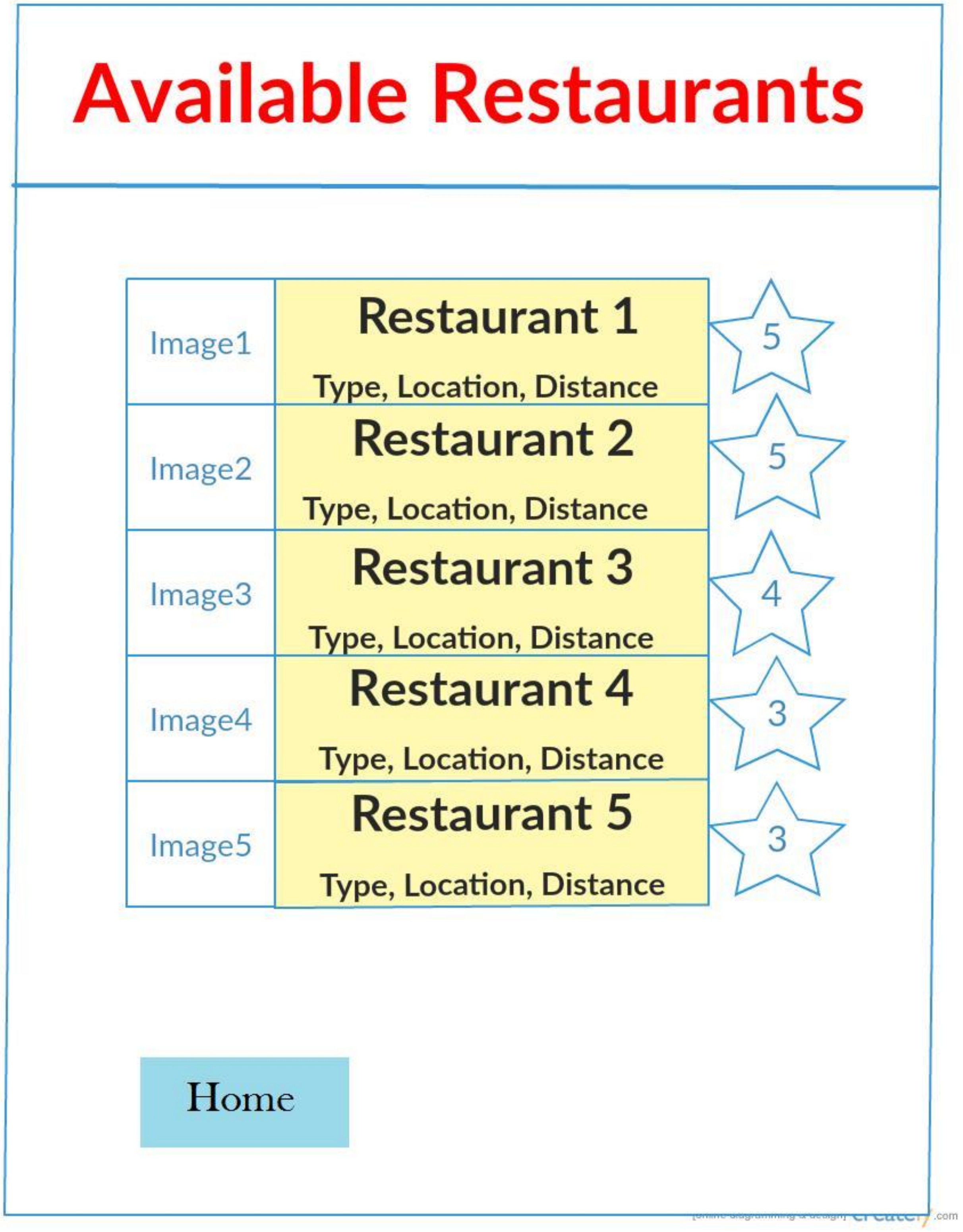
Health issue select page: in this page user can give input to the application which type health issues, so that we can provide him suitable food item options.



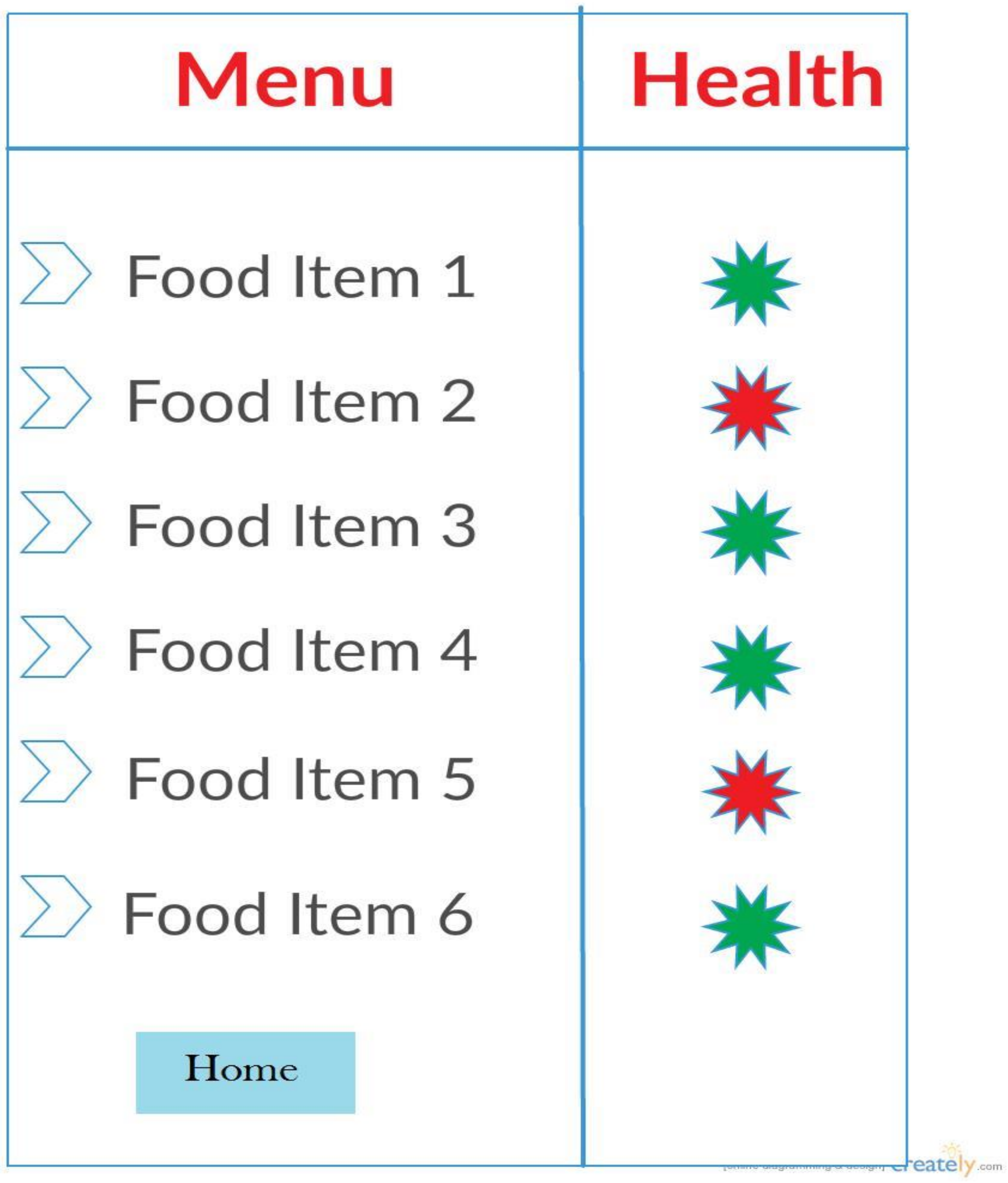
Allergic food page: In this page user can specify the which items he his allergic so that we can give him food options without them like some members will allergic to the peanut we can give him food items list which don't have the peanuts in it.



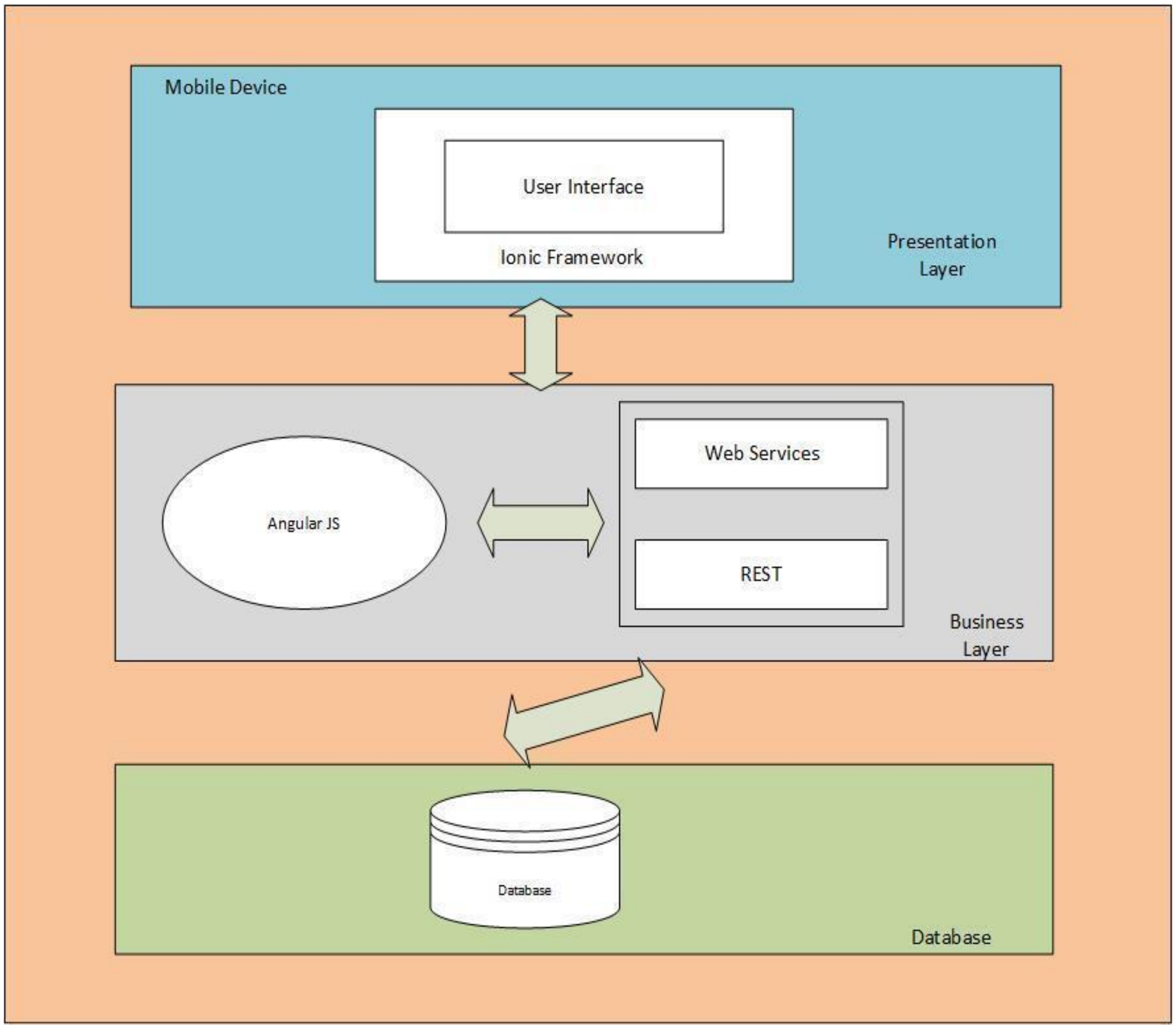
Restaurant Result page: in this page we will display best resulted restaurants based on the given input options by the user.



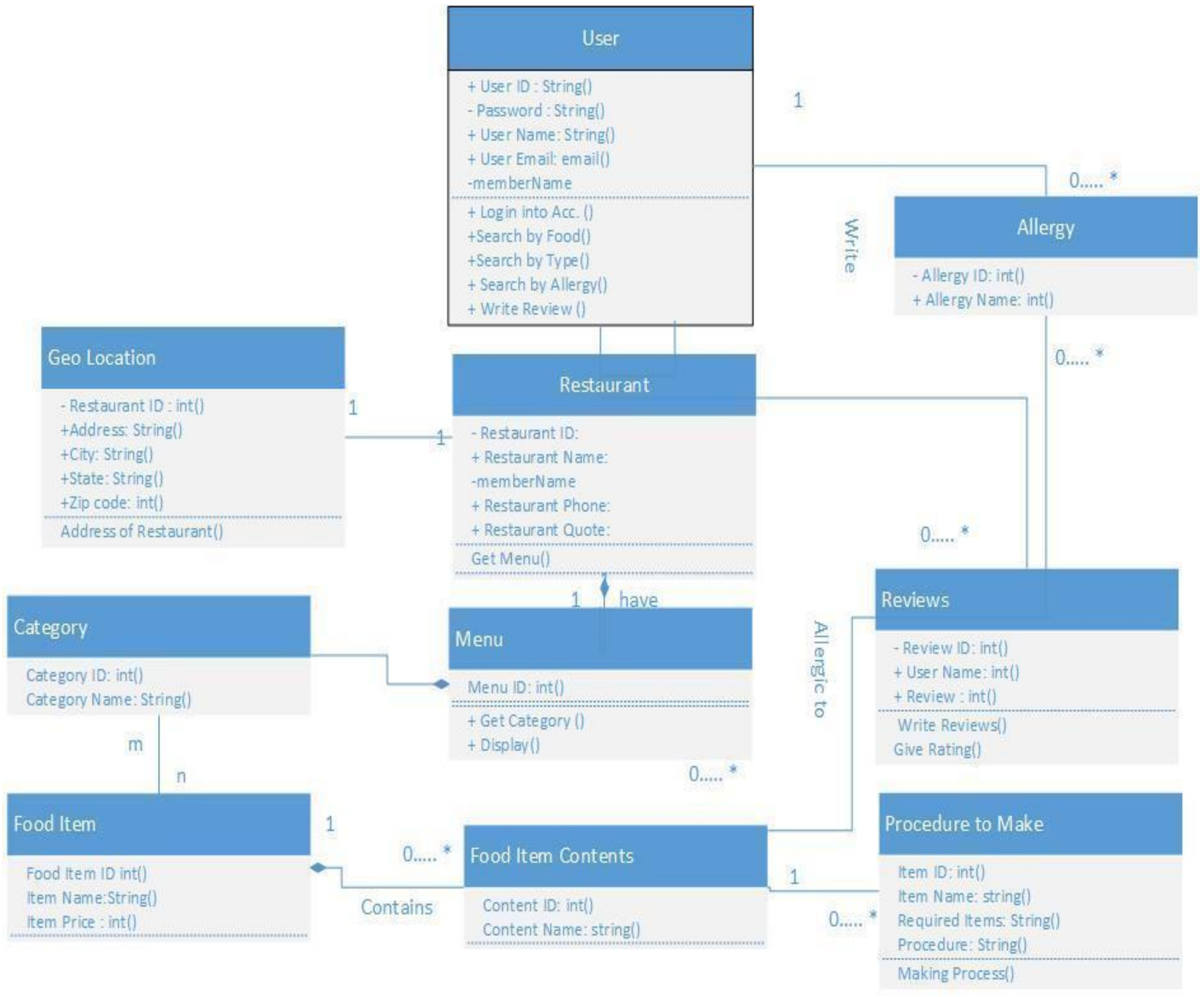
Menu page:
In this page we will display the menu with the items and health concern to give the user feedback whether is it good or bad to his health by indicating green / red mark.



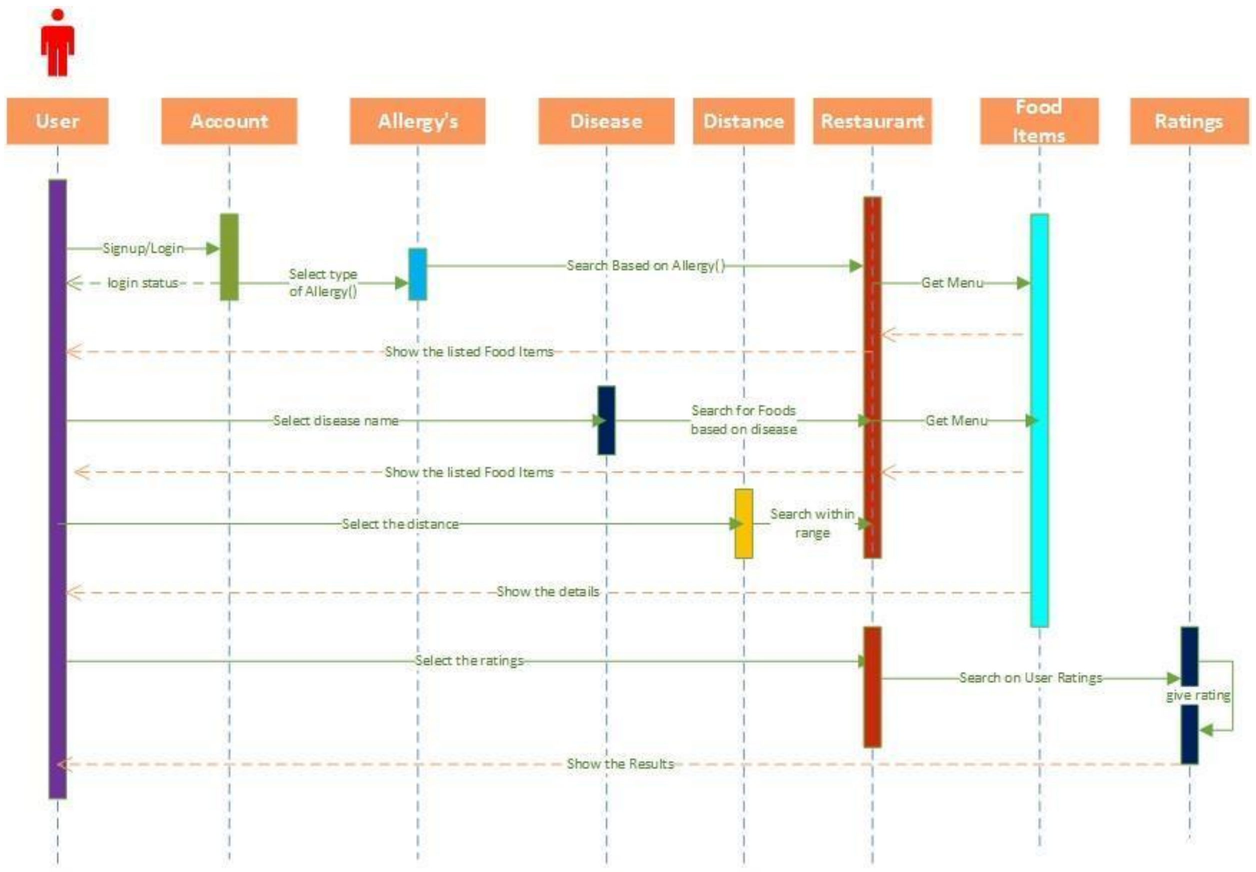
Architecture Diagram:



UML Class Diagram:



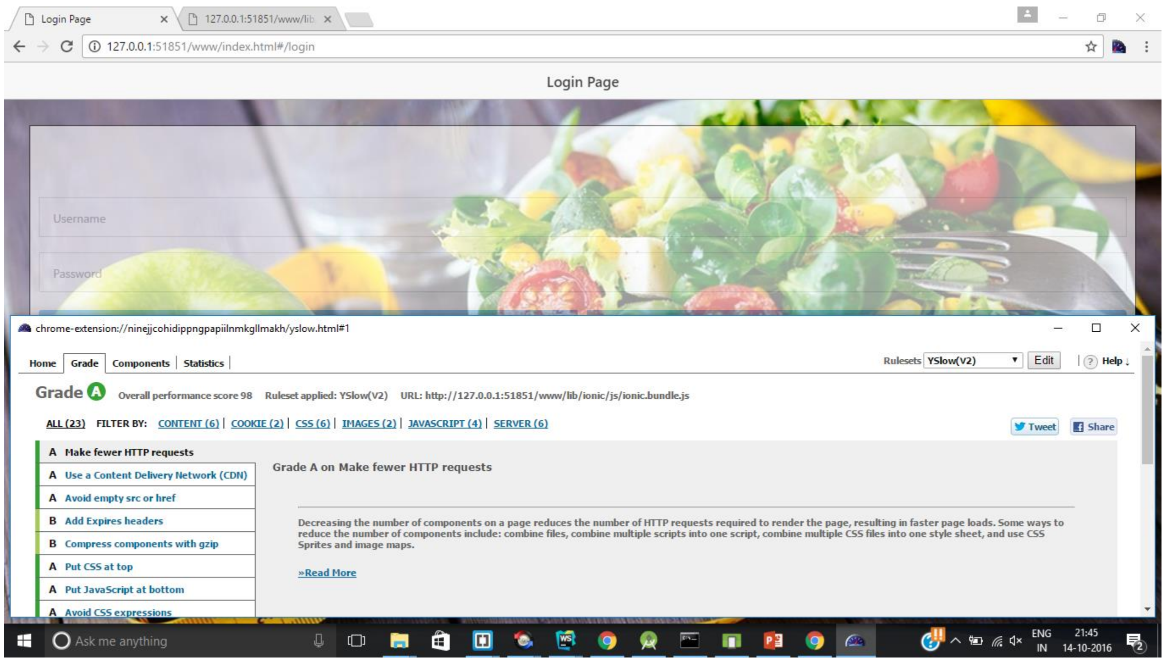
UML Sequence Diagram:



Project Testing:

The application has been tested for every webpage using yslow and all the screen shots are posted below.

Login page analysis screenshot:



chrome-extension://ninejjcohidippngpapiilnmkgllmakh/yslow.html#1

Home | Grade | Components | Statistics

Rulesets YSlow(V2) Edit | Help

Grade A — Overall performance score 98 — Ruleset applied: YSlow(V2) — URL: http://127.0.0.1:51851/www/lib/ionic/js/ionic.bundle.js

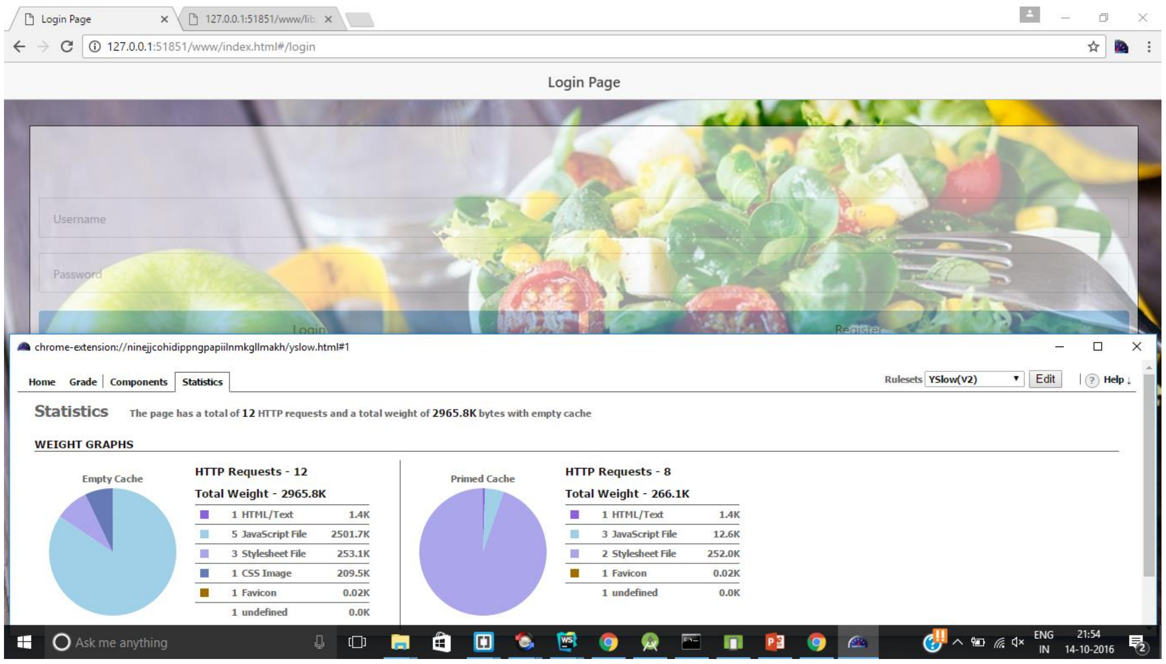
ALL (23) FILTER BY: CONTENT (6) | COOKIE (2) | CSS (6) | IMAGES (2) | JAVASCRIPT (4) | SERVER (6)

A	Make fewer HTTP requests
A	Use a Content Delivery Network (CDN)
A	Avoid empty src or href
B	Add Expires headers
B	Compress components with gzip
A	Put CSS at top
A	Put JavaScript at bottom
A	Avoid CSS expressions

Grade A on Make fewer HTTP requests

Decreasing the number of components on a page reduces the number of HTTP requests required to render the page, resulting in faster page loads. Some ways to reduce the number of components include: combine files, combine multiple scripts into one script, combine multiple CSS files into one style sheet, and use CSS Sprites and image maps.

»Read More



chrome-extension://ninejjcohidippngpapiilnmkgllmakh/yslow.html#1

Home | Grade | Components | Statistics

Statistics

The page has a total of 12 HTTP requests and a total weight of 2965.8K bytes with empty cache

WEIGHT GRAPHS

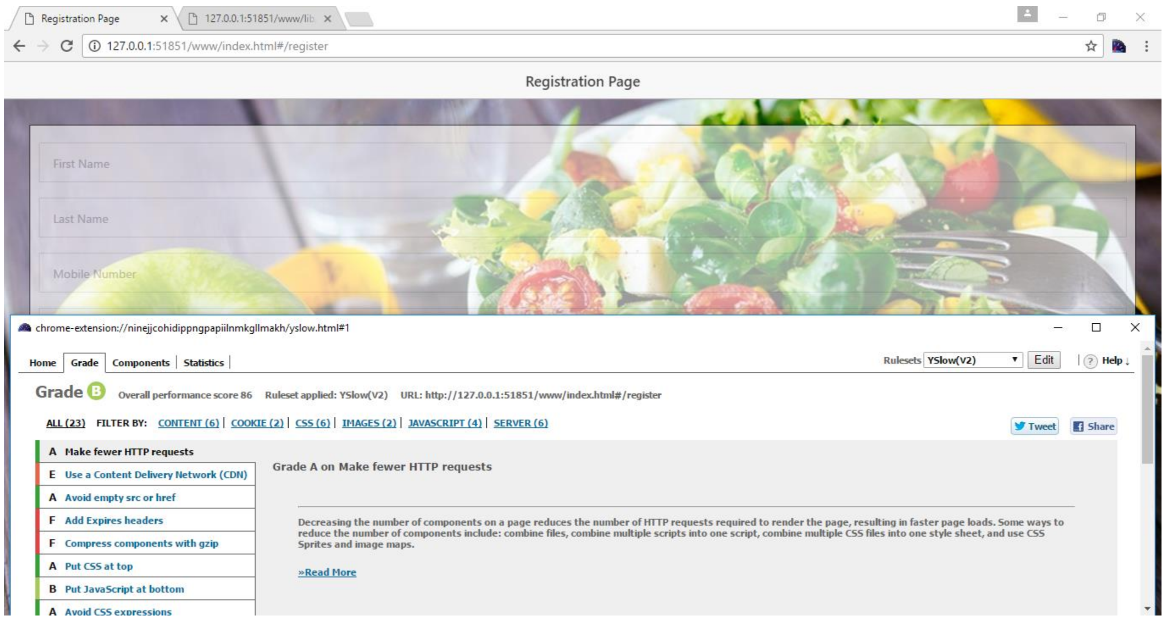
Empty Cache — HTTP Requests - 12 — Total Weight - 2965.8K

■	1	HTML/Text	1.4K
■	5	JavaScript File	2501.7K
■	3	Stylesheet File	253.1K
■	1	CSS Image	209.5K
■	1	Favicon	0.02K
	1	undefined	0.0K

Primed Cache — HTTP Requests - 8 — Total Weight - 266.1K

■	1	HTML/Text	1.4K
■	3	JavaScript File	12.6K
■	2	Stylesheet File	252.0K
■	1	Favicon	0.02K
	1	undefined	0.0K

Registration page analysis screenshot:



Registration Page

127.0.0.1:51851/www/index.html#/register

First Name

Last Name

Mobile Number

chrome-extension://ninejjcohidippngpapiilnmkgllmakh/yslow.html#1

Home | Grade | Components | Statistics

Rulesets YSlow(V2) Edit Help

Grade B Overall performance score 86 Ruleset applied: YSlow(V2) URL: http://127.0.0.1:51851/www/index.html#/register

ALL (23) FILTER BY: CONTENT (6) | COOKIE (2) | CSS (6) | IMAGES (2) | JAVASCRIPT (4) | SERVER (6)

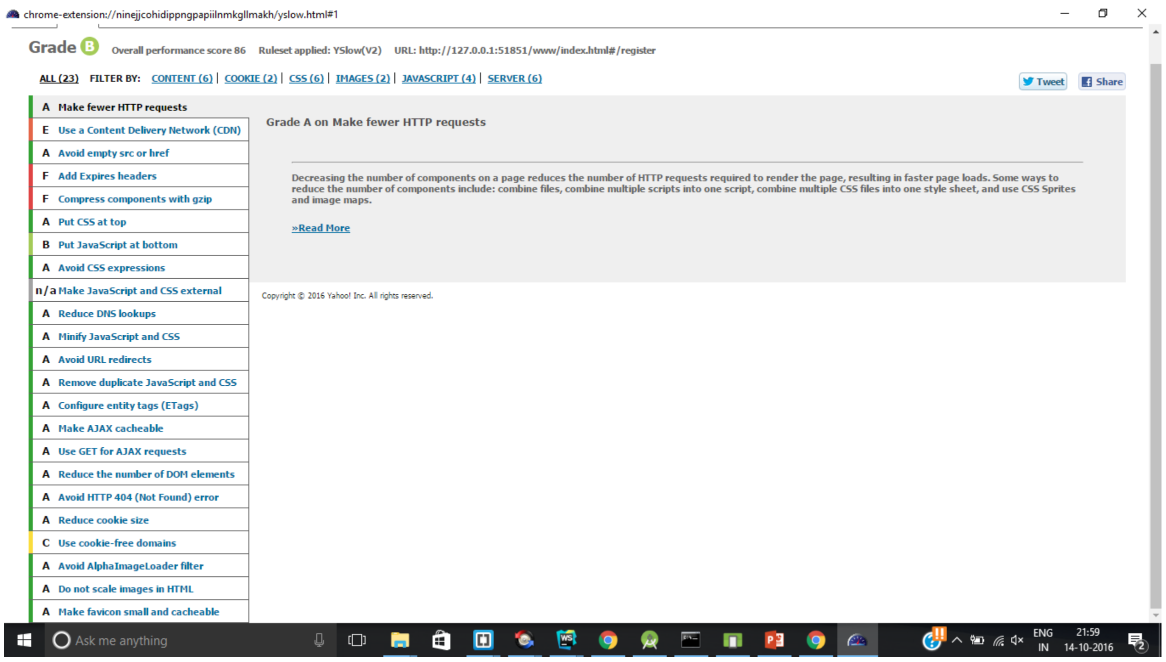
A Make fewer HTTP requests
E Use a Content Delivery Network (CDN)
A Avoid empty src or href
F Add Expires headers
F Compress components with gzip
A Put CSS at top
B Put JavaScript at bottom
A Avoid CSS expressions

Grade A on Make fewer HTTP requests

Decreasing the number of components on a page reduces the number of HTTP requests required to render the page, resulting in faster page loads. Some ways to reduce the number of components include: combine files, combine multiple scripts into one script, combine multiple CSS files into one style sheet, and use CSS Sprites and image maps.

»Read More

Overall performance testing :



chrome-extension://ninejjcohidippngpapiilnmkgllmakh/yslow.html#1

Grade B Overall performance score 86 Ruleset applied: YSlow(V2) URL: http://127.0.0.1:51851/www/index.html#/register

ALL (23) FILTER BY: CONTENT (6) | COOKIE (2) | CSS (6) | IMAGES (2) | JAVASCRIPT (4) | SERVER (6)

A Make fewer HTTP requests
E Use a Content Delivery Network (CDN)
A Avoid empty src or href
F Add Expires headers
F Compress components with gzip
A Put CSS at top
B Put JavaScript at bottom
A Avoid CSS expressions
n/a Make JavaScript and CSS external
A Reduce DNS lookups
A Minify JavaScript and CSS
A Avoid URL redirects
A Remove duplicate JavaScript and CSS
A Configure entity tags (ETags)
A Make AJAX cacheable
A Use GET for AJAX requests
A Reduce the number of DOM elements
A Avoid HTTP 404 (Not Found) error
A Reduce cookie size
C Use cookie-free domains
A Avoid AlphaImageLoader filter
A Do not scale images in HTML
A Make favicon small and cacheable

Grade A on Make fewer HTTP requests

Decreasing the number of components on a page reduces the number of HTTP requests required to render the page, resulting in faster page loads. Some ways to reduce the number of components include: combine files, combine multiple scripts into one script, combine multiple CSS files into one style sheet, and use CSS Sprites and image maps.

»Read More

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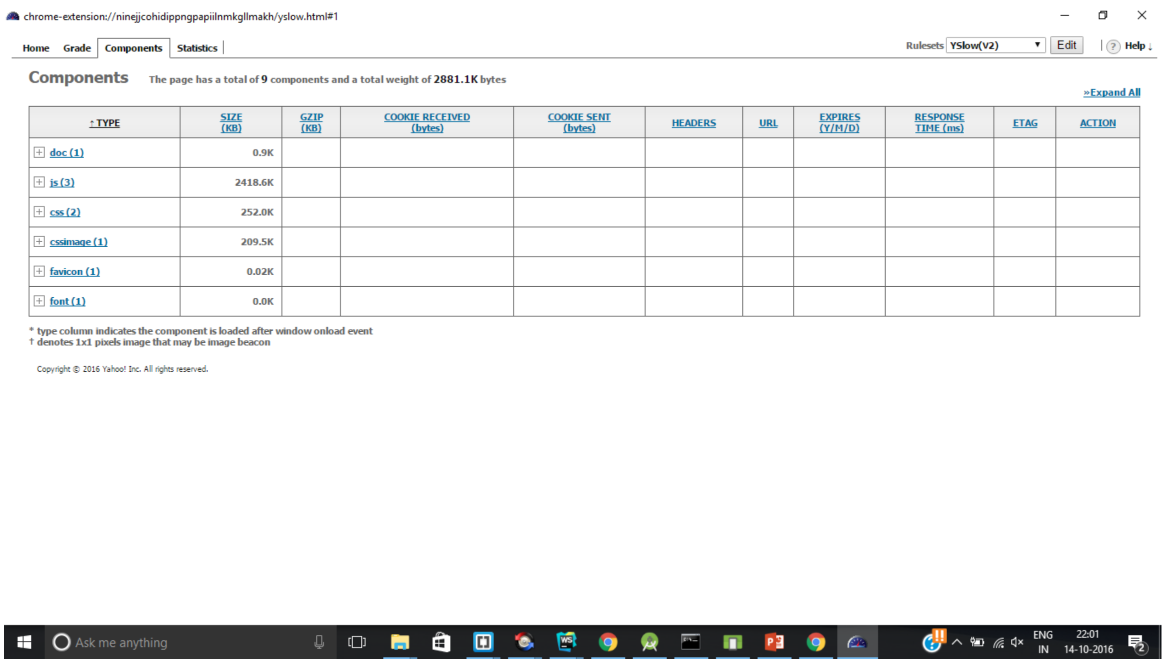
Ask me anything ENG IN 21:59 14-10-2016



chrome-extension://ninejjcohidippngpapiilnmkgllmakh/yslow.html#1

Home Grade **Components** Statistics | Rulesets YSlow(V2) Edit | ? Help ↓

Components

The page has a total of **9** components and a total weight of **2881.1K** bytes

»Expand All

↑TYPE	SIZE (KB)	GZIP (KB)	COOKIE RECEIVED (bytes)	COOKIE SENT (bytes)	HEADERS	URL	EXPIRES (Y/M/D)	RESPONSE TIME (ms)	ETAG	ACTION
⊞ doc (1)	0.9K									
⊞ js (3)	2418.6K									
⊞ css (2)	252.0K									
⊞ cssimage (1)	209.5K									
⊞ favicon (1)	0.02K									
⊞ font (1)	0.0K									

* type column indicates the component is loaded after window onload event
† denotes 1x1 pixels image that may be image beacon

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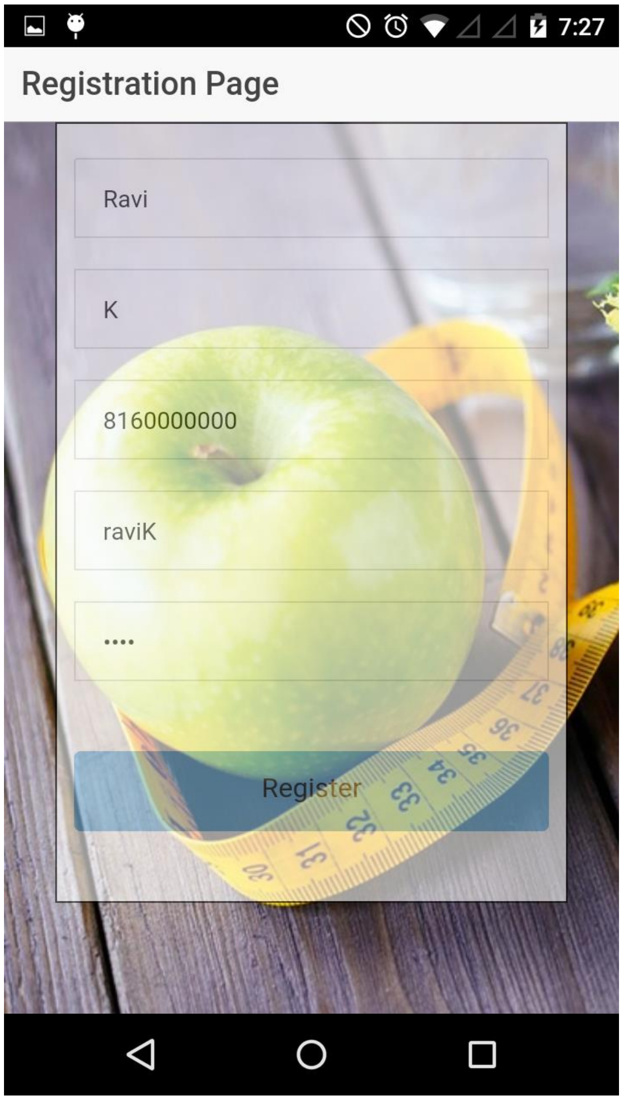
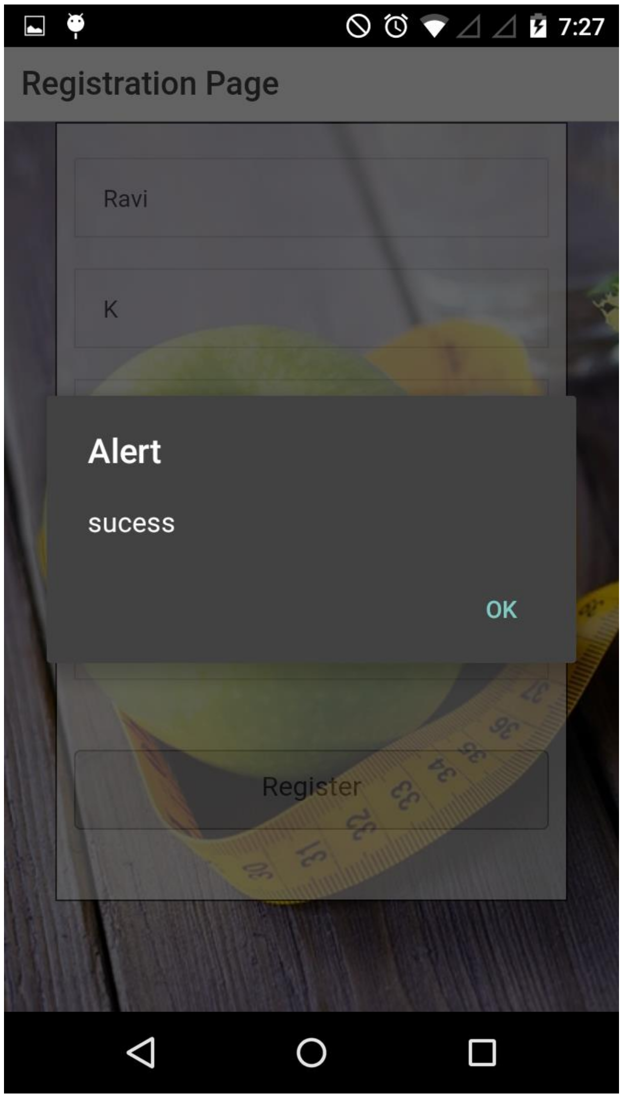
Project Deployment:

User Registration:

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



Once user press the signup button it will give user success popup message.

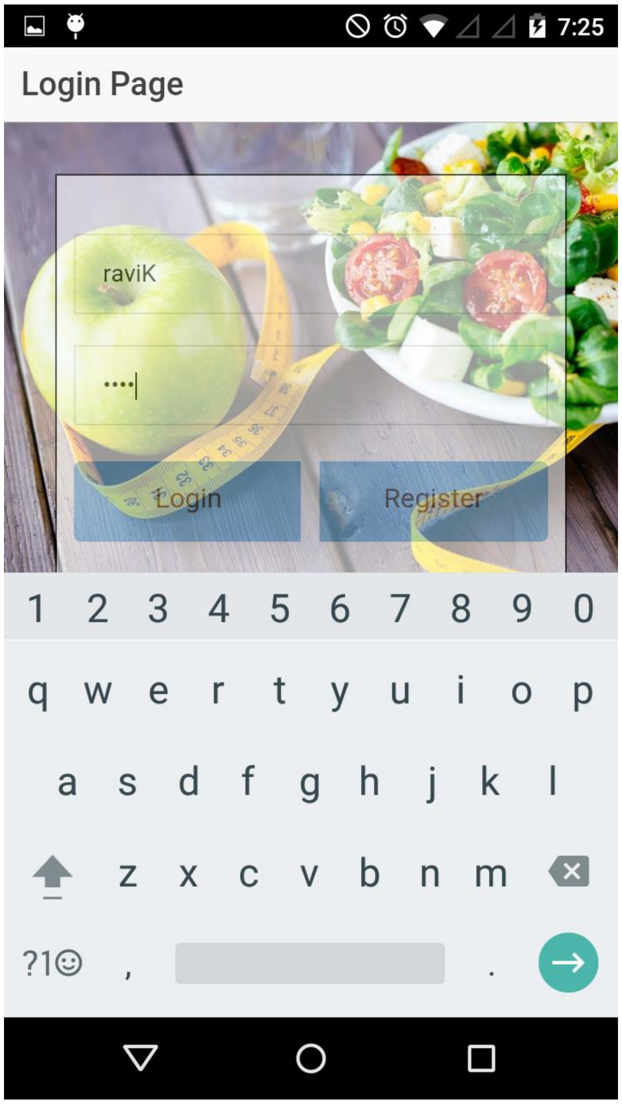


Alert

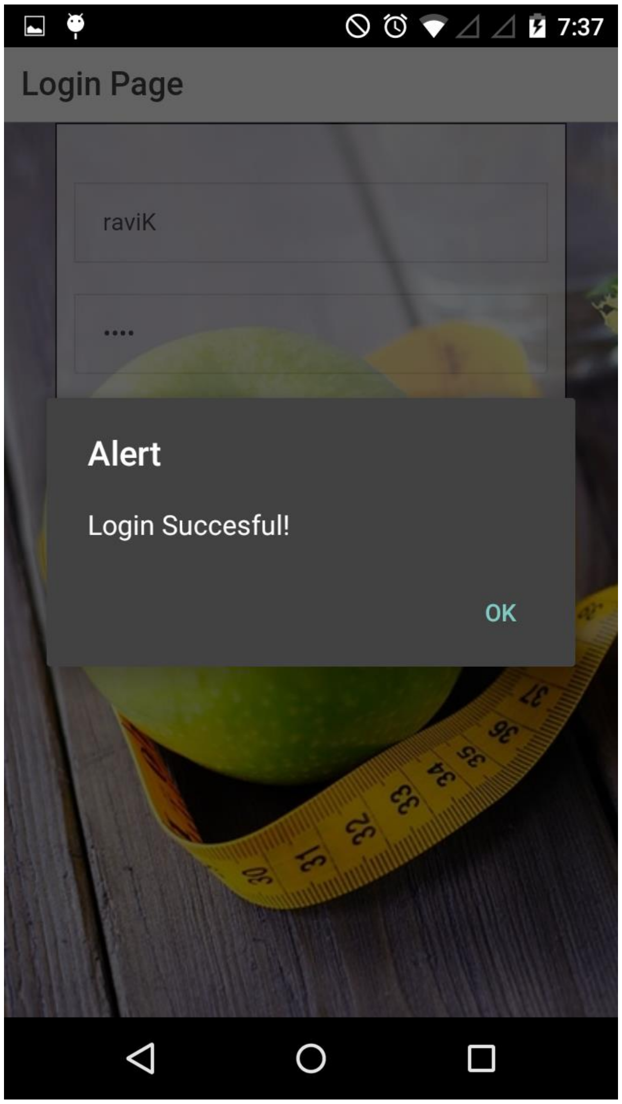
sucess

User Login :

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



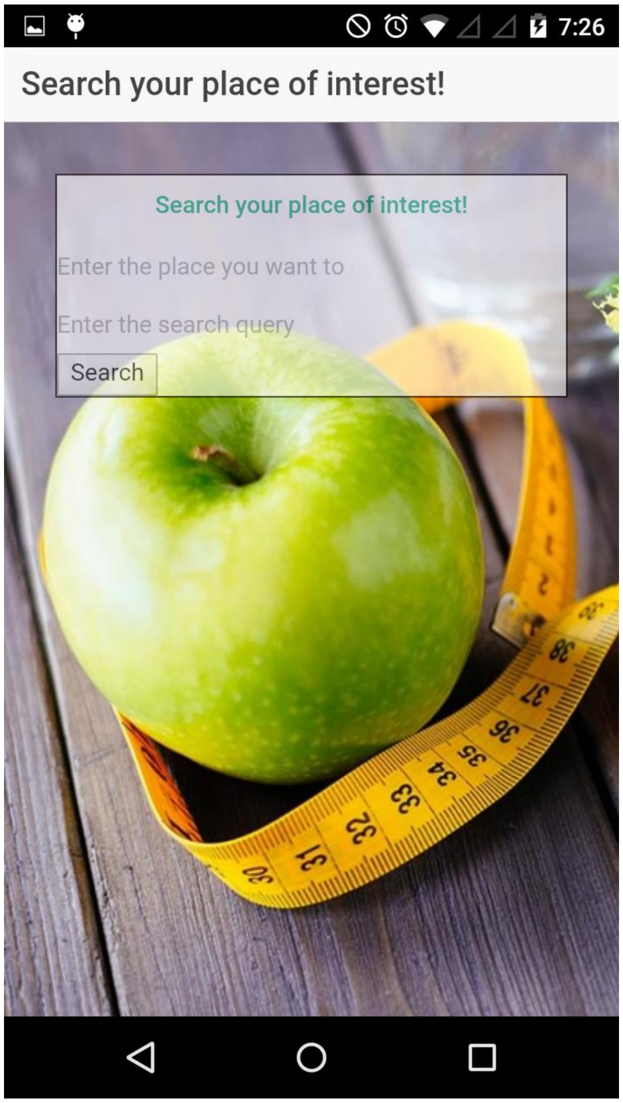
We will validate the user credentials, if they match the online database username and password it will give the user a successful login pop message and then redirected to the home page.



Login Succesful!

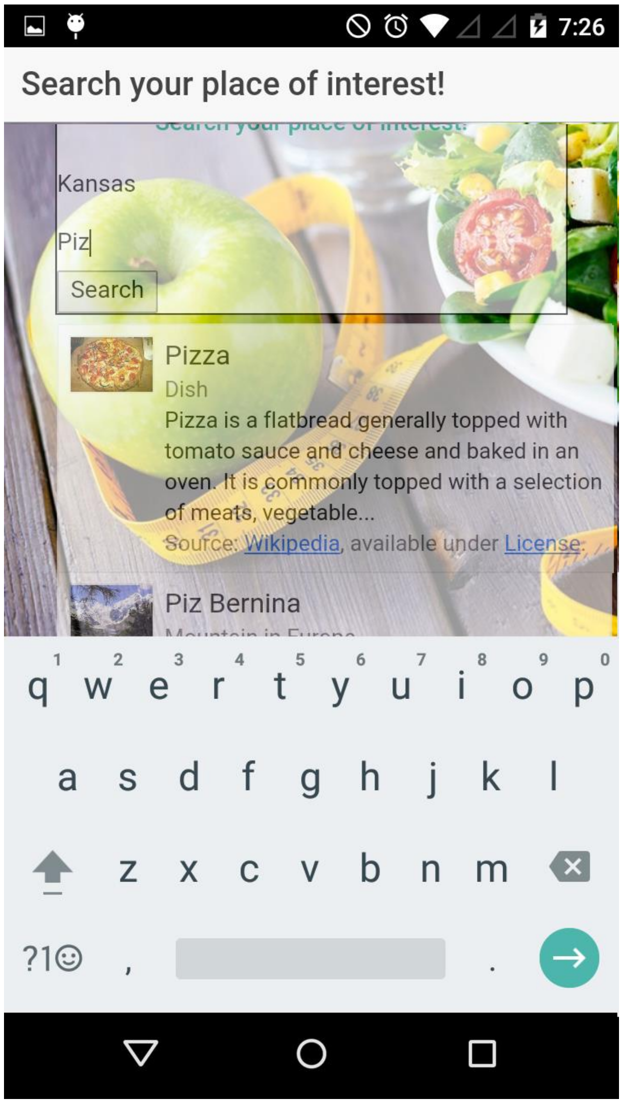
Home page :

In this page where user can search where and what type of food he wants to eat.


7:26
Search your place of interest!
Search your place of interest!
Enter the place you want to
Enter the search query
Search

Google knowledge service :

We have given an auto suggestion feature to the user to easily select which type of the dish he wants try without typing everything.


Search your place of interest!

Kansas

Piz

Search

Pizza

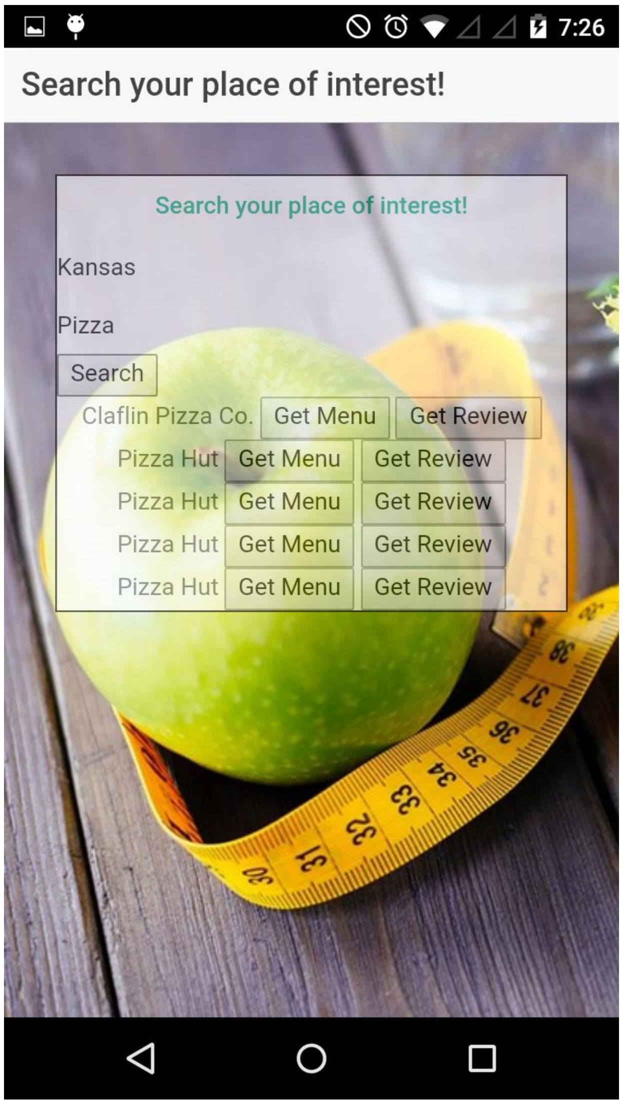
Dish

Pizza is a flatbread generally topped with tomato sauce and cheese and baked in an oven. It is commonly topped with a selection of meats, vegetable...

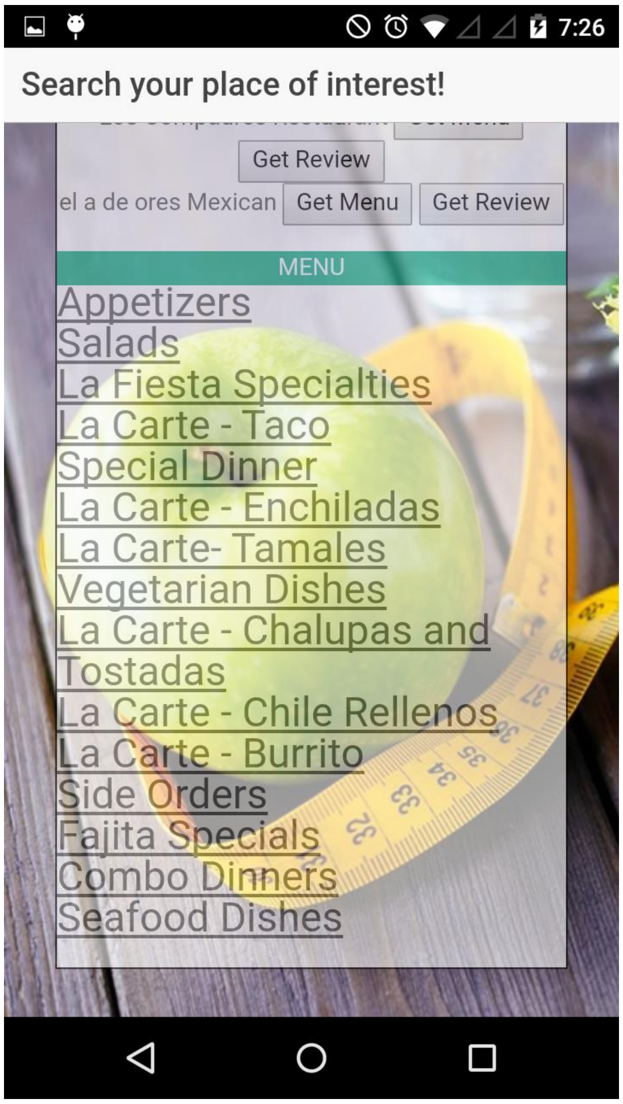
Source: Wikipedia, available under License.

Piz Bernina

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.


Search your place of interest!

Get Review

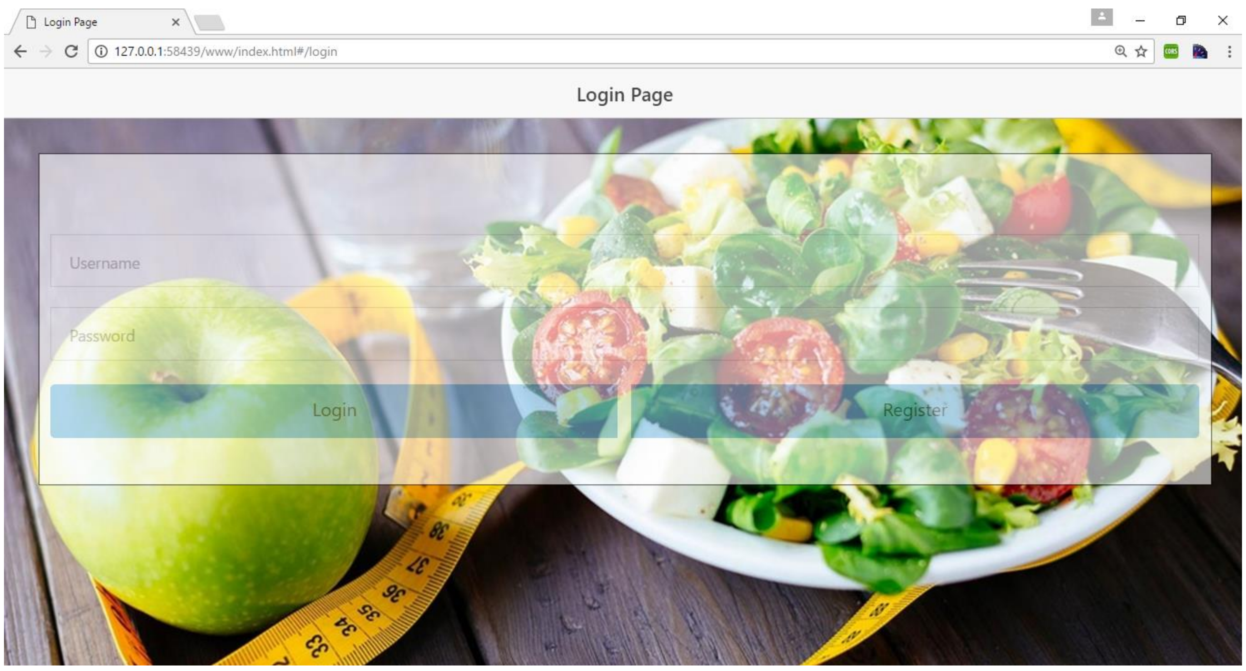
el a de ores Mexican Get Menu Get Review

MENU

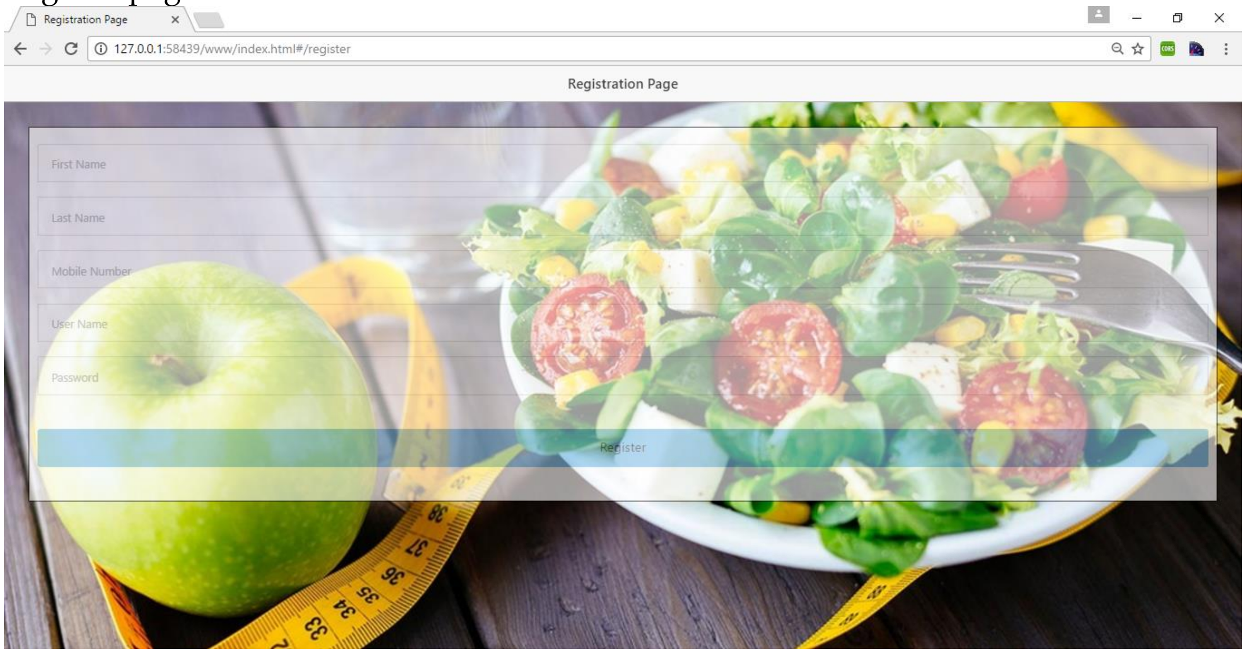
Appetizers
Salads
La Fiesta Specialties
La Carte - Taco
Special Dinner
La Carte - Enchiladas
La Carte- Tamales
Vegetarian Dishes
La Carte - Chalupas and Tostadas
La Carte - Chile Rellenos
La Carte - Burrito
Side Orders
Fajita Specials
Combo Dinners
Seafood Dishes

Deployment in browser:

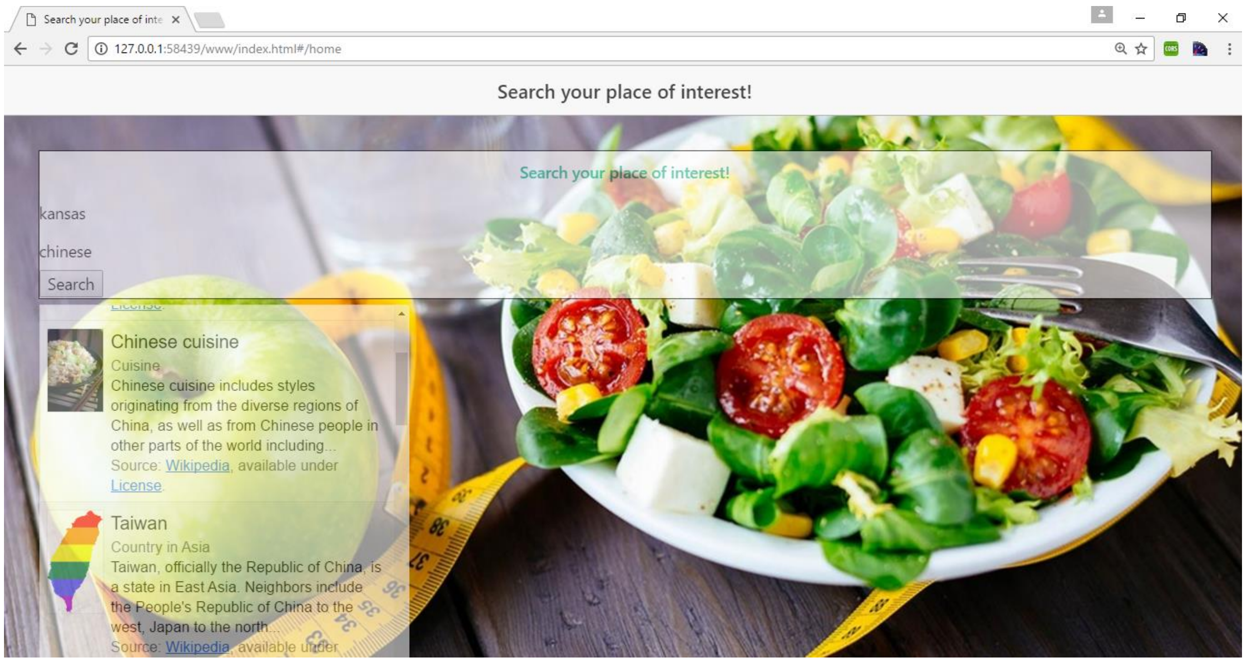
we have deployed our application in web browser and android platform the web browser screen shoots are posted below android screen shots are posted already in above pages.
webapplication login :



Register page :



Home page:



Search your place of interest!

Search your place of interest!

kansas

chinese

Search

Chinese cuisine

Cuisine

Chinese cuisine includes styles originating from the diverse regions of China, as well as from Chinese people in other parts of the world including...

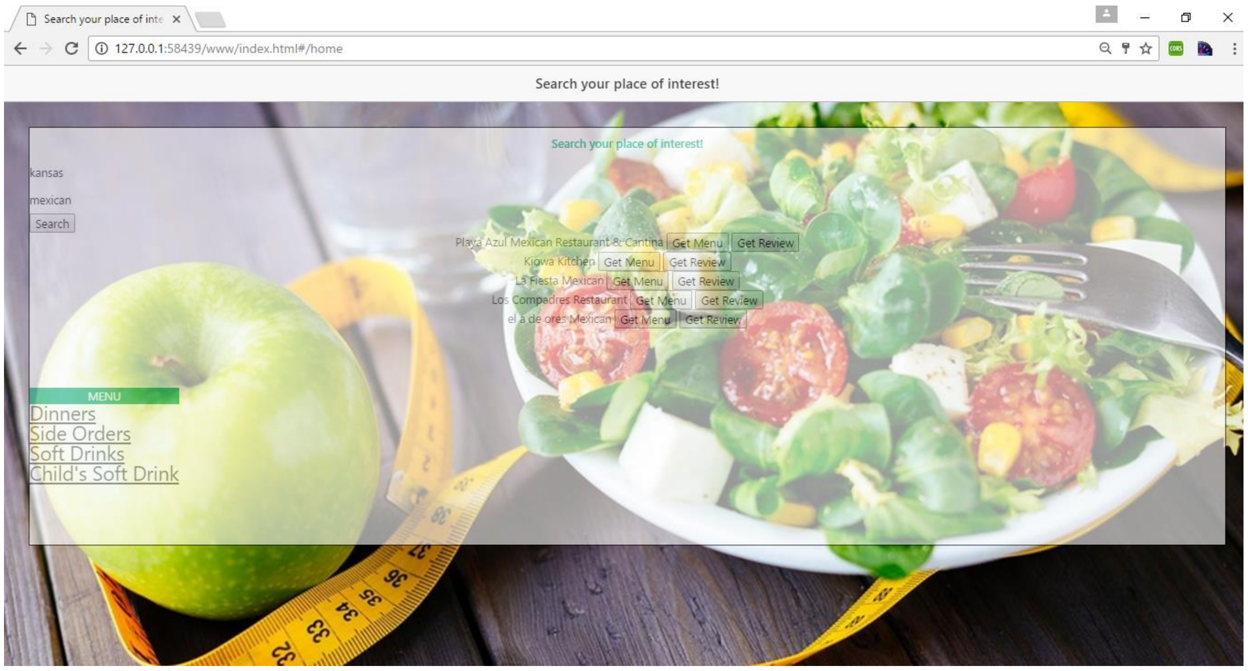
Source: Wikipedia, available under License.

Taiwan

Country in Asia

Taiwan, officially the Republic of China, is a state in East Asia. Neighbors include the People's Republic of China to the north, Japan to the north...

Source: Wikipedia, available under



Search your place of interest!

Search your place of interest!

kansas

mexican

Search

```
Playa Azul Mexican Restaurant & Cantina  Get Menu  Get Review
Kiowa Kitchen  Get Menu  Get Review
La Fiesta Mexican  Get Menu  Get Review
Los Compadres Restaurant  Get Menu  Get Review
el à de ores Mexican  Get Menu  Get Review
```

MENU

Dinners

Side Orders

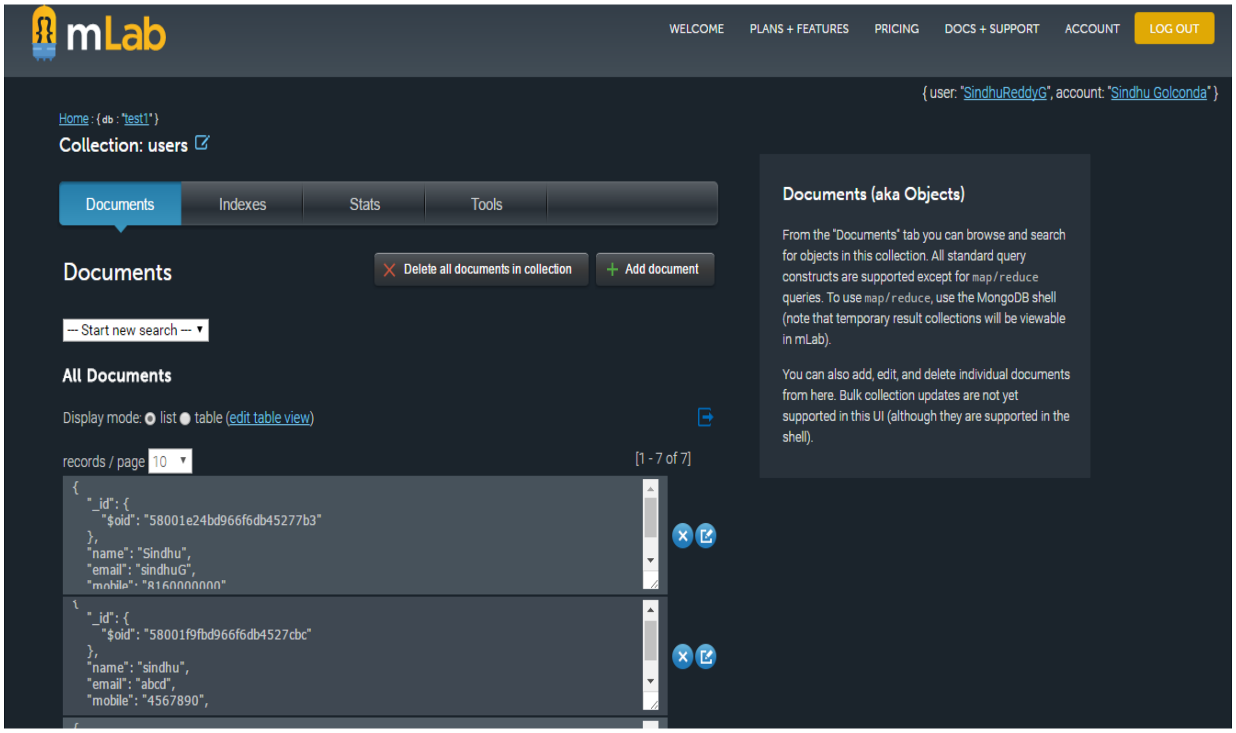
Soft Drinks

Child's Soft Drink

<u>Server Implementation:</u>

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.



{ user: "SindhuReddyG", account: "Sindhu Golconda" }

Home : { db : "test1" }

Collection: users

Documents

All Documents

Display mode: list table (edit table view)

records / page 10 [1 - 7 of 7]

```
{
   "_id": {
      "$oid": "58001e24bd966f6db45277b3"
   },
   "name": "Sindhu",
   "email": "sindhuG",
   "mobile": "8160000000"
```

```
{
   "_id": {
      "$oid": "58001f9fbd966f6db4527cbc"
   },
   "name": "sindhu",
   "email": "abcd",
   "mobile": "4567890",
```

Documents (aka Objects)

From the "Documents" tab you can browse and search for objects in this collection. All standard query constructs are supported except for `map/reduce` queries. To use `map/reduce`, use the MongoDB shell (note that temporary result collections will be viewable in mLab).

You can also add, edit, and delete individual documents from here. Bulk collection updates are not yet supported in this UI (although they are supported in the shell).

<u>GITHUB URL:</u>

Source code GITHUB link is provide below:

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

Project Management:

- **Storage of User data:** User account details are stored in the mlab's online mongo database.
    - Contributors: Advaith, Ravi
- **User authentication:** User login credentials are validated with the values in database of mongo lab.
    - Contributors: Sindhu, Uday
- **User interface: F**ront end idea and implementation of webpages in html.
    - Contributors: Uday, Advaith
- **Auto-Population of Textboxes:** While entering text in the search fields, application suggests by auto populating the data using Google Image Graph search API.
    - Contributors: Sindhu, Ravi
- **Restaurant Search:** Using Foursquare API, the restaurants are retrieved based on location and search query.
    - Contributors: Advaith, Ravi
- **Menu and Item Search:** 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, Advaith
- **Application deploying**: We had deployed our application in android platform using Ionic.
    - Contributors: Sindhu, Ravi.

- **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

Bibliography:

https://developers.google.com/knowledge-graph/how-tos/search-widget
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