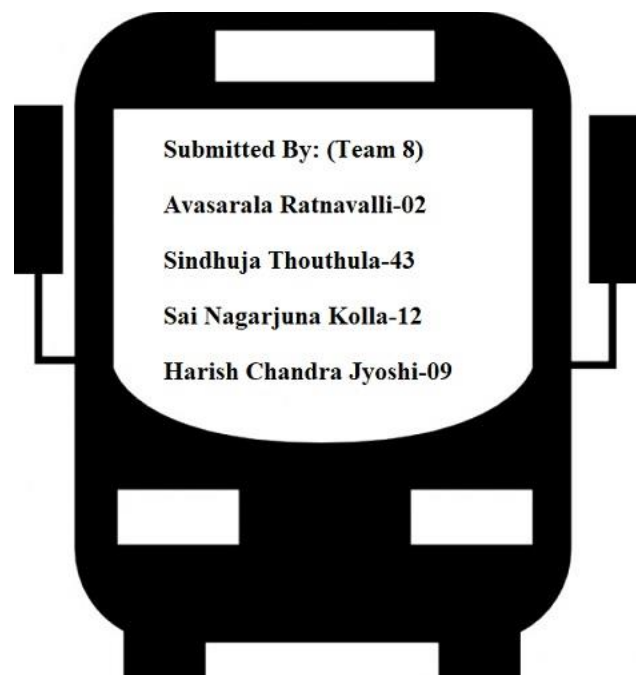




# THE ROVER



## Project Increment-3



## **1. Project Goal and Objectives:**

### **1.1 Motivation:**

To provide the travel assistance to travellers in planning the tour, acquiring accommodation and the transportation facilities and also to overcome the difficulties faced by them like the language barrier and the restaurant/food availabilities, search for the tourist attractions has motivated us to develop an app with all the requirements integrated with augmented Reality, which would help them to give a best travel experience.

### **1.2 Significance/uniqueness:**

This system has all the travel support and guidance options with augmented reality feature integrated in a single platform.

### **1.3 Objective:**

Our idea is to develop a web application for a particular tourist attraction and implement augmented reality on it for a better tourist experience by integrating various facilities on a single platform.

### **1.4 System Features:**

- The user can login using any social networking sites like google or facebook or create an account and get assistance about the places he is planning to have a tour.
- Using Augmented Reality get the instant Text Translation of any text to their native languages.
- Acquire the shortest distance suggestions, Transportation facilities available, estimated time of reaching and the nearby restaurants and the accommodations along their way to destination.
- Gets to know the historical and the cultural information of a monument or a place and also how would they appear in a different season or in the past years.
- Travellers will never get bored during their long drives by playing educational games about their destinations.
- Obtain the weather Forecast even before reaching the destination in an interactive way with augmented reality feature.

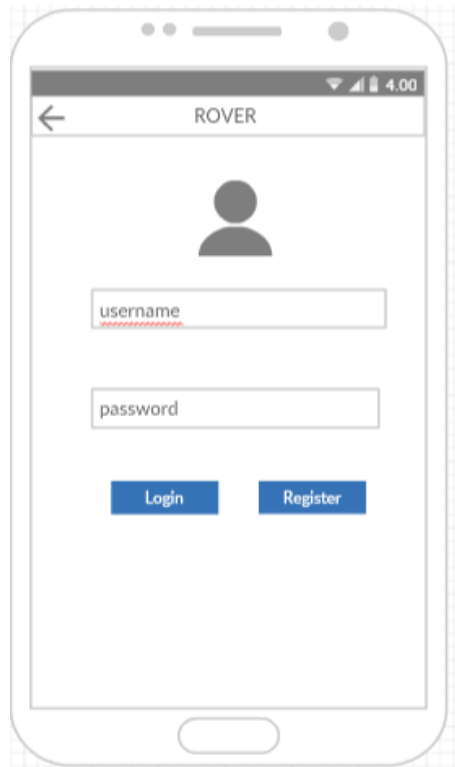
## 2. Third Increment report:

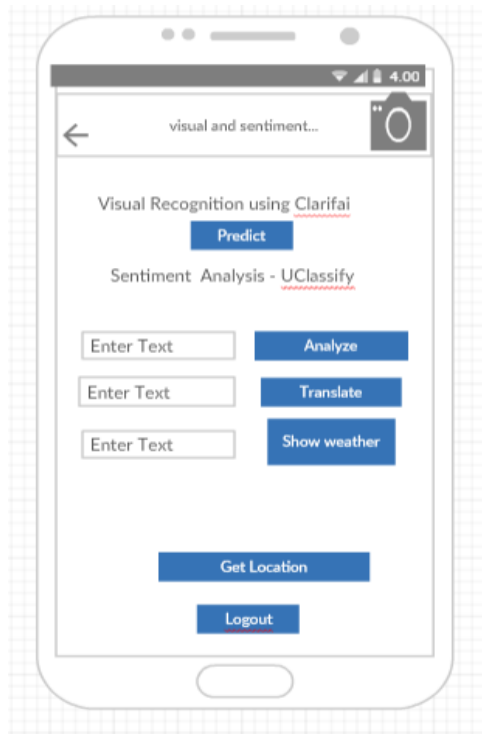
### 2.1 REST Services:

- OpenWeatherMap API
- UClassify Sentiment Analysis API
- Translate YANDEX API
- Clarifai Visual Recognition API
- Wikitude for ionic framework
- Google GeoLocation API

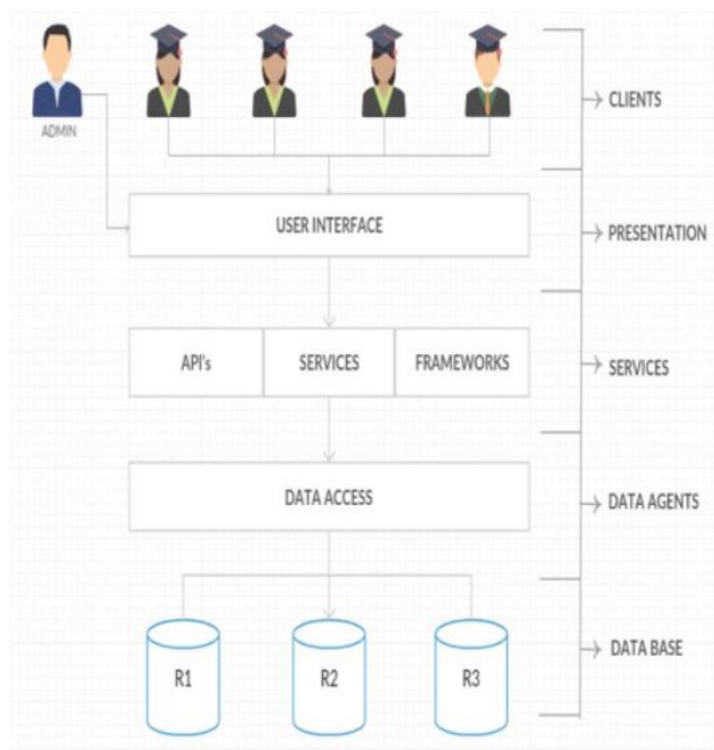
### 2.2 Detailed Design of Features

- **Wireframes:**

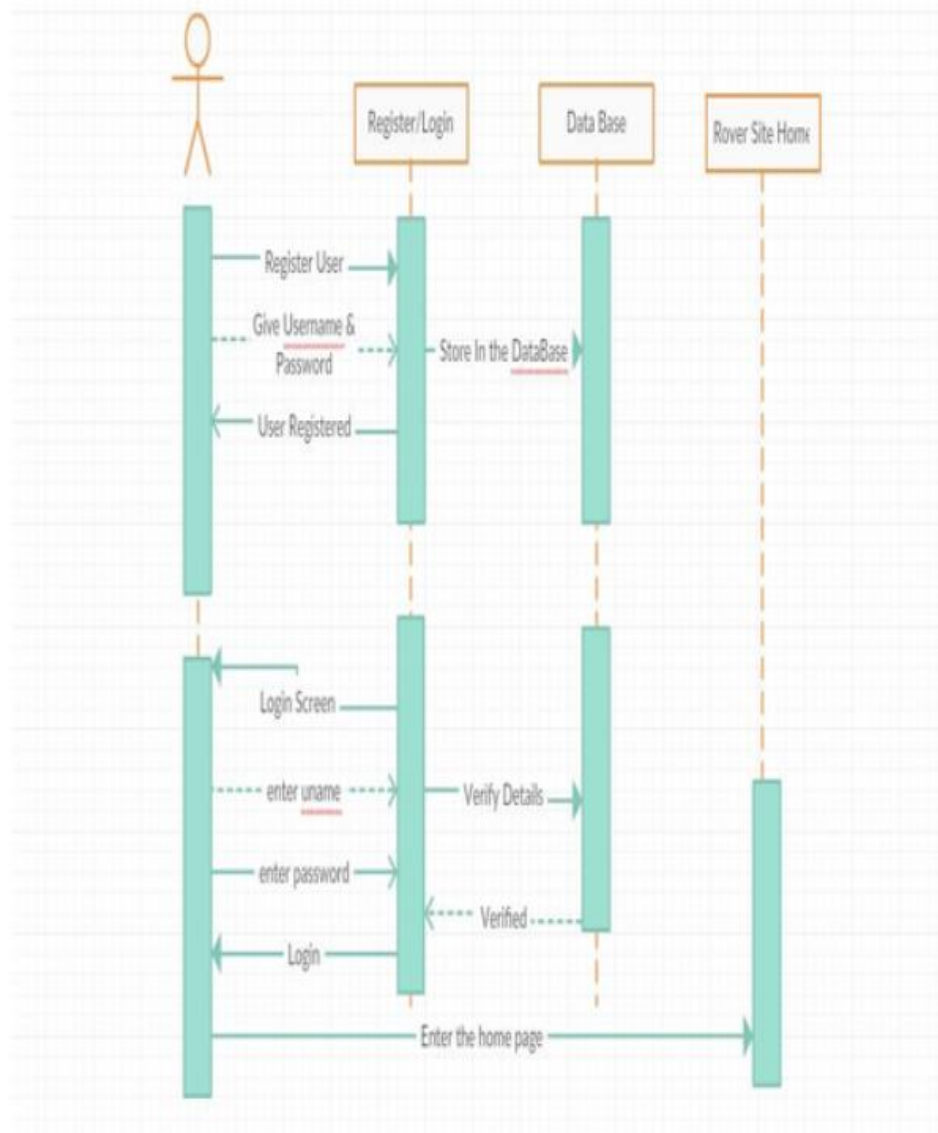




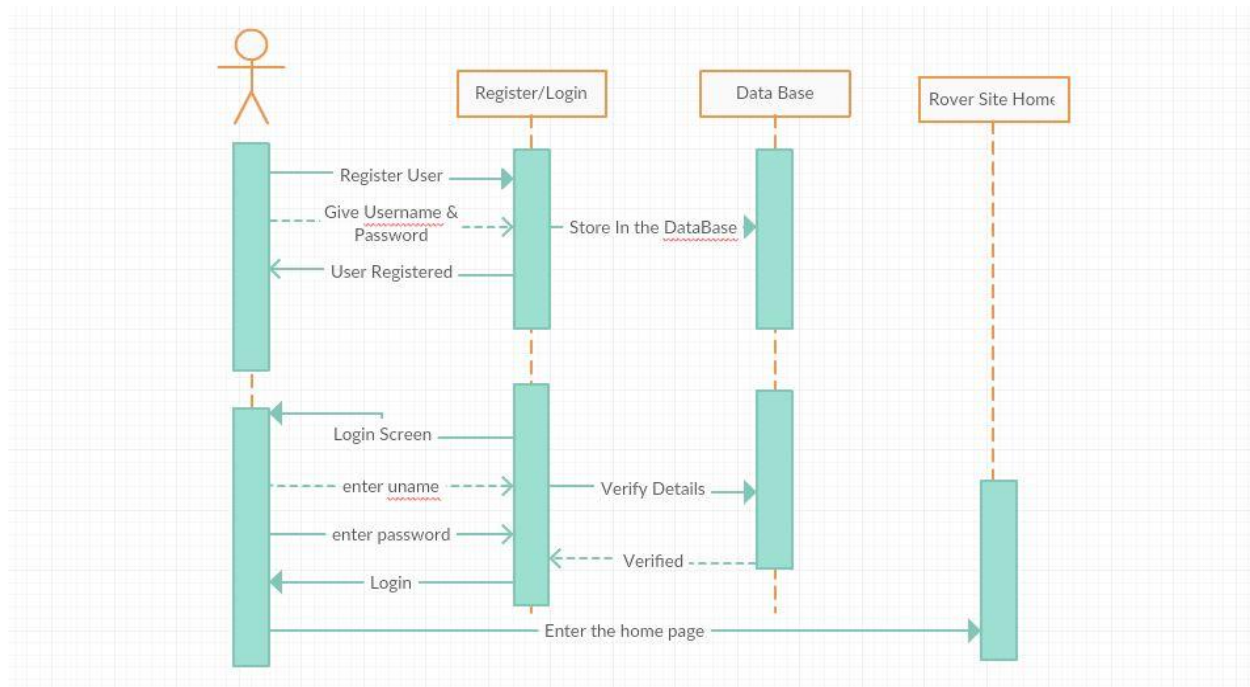
## ■ Architecture Diagram:



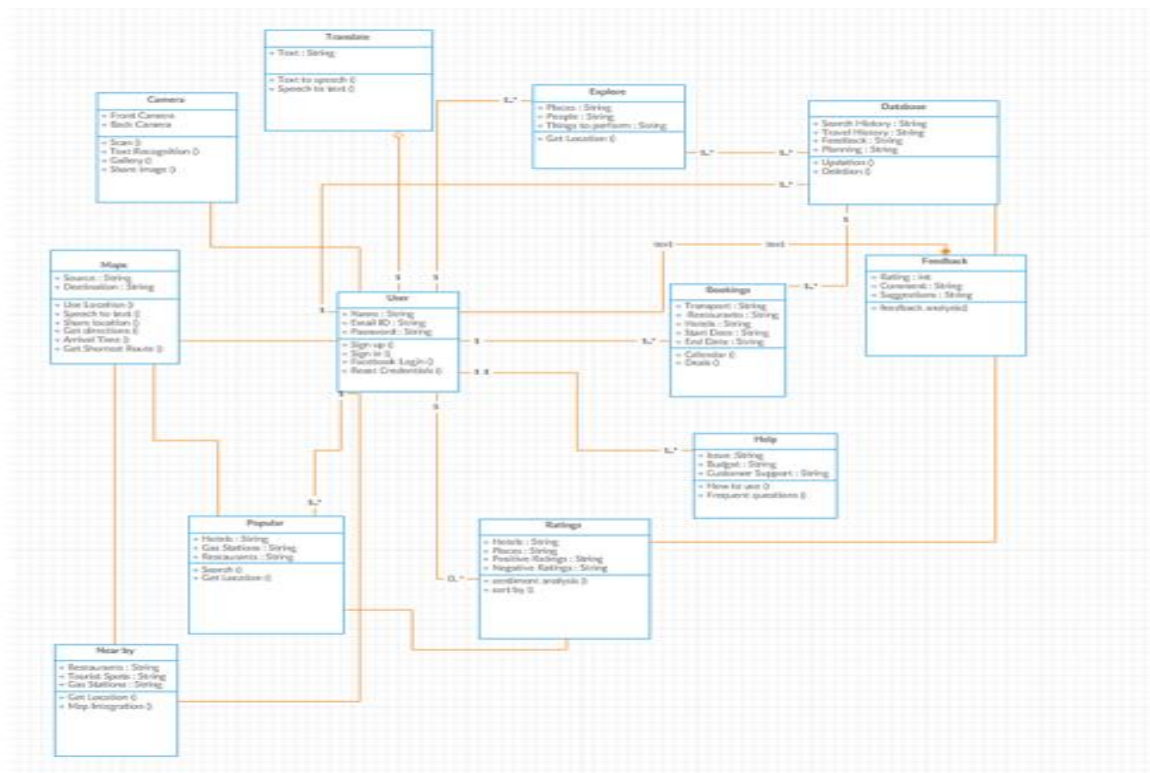
- Sequence Diagram:



- Sequence diagram of User Register and Login



- **Class Diagram:**

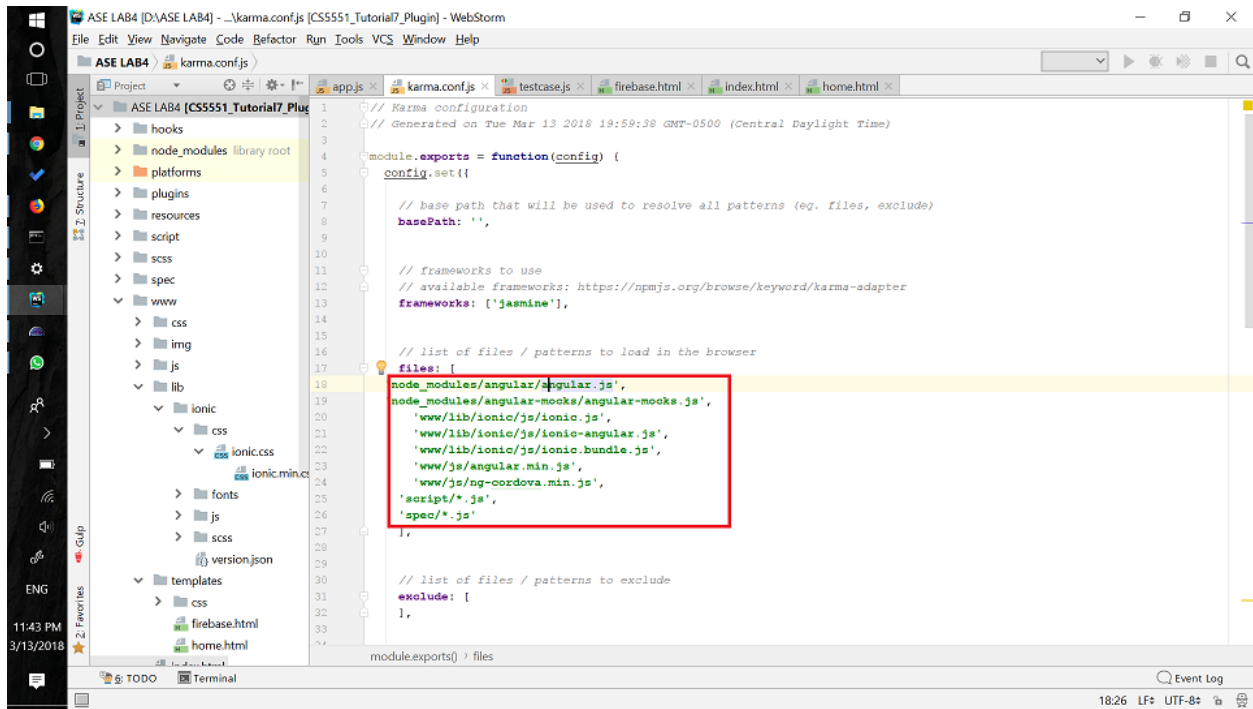


## 2.3 Testing:

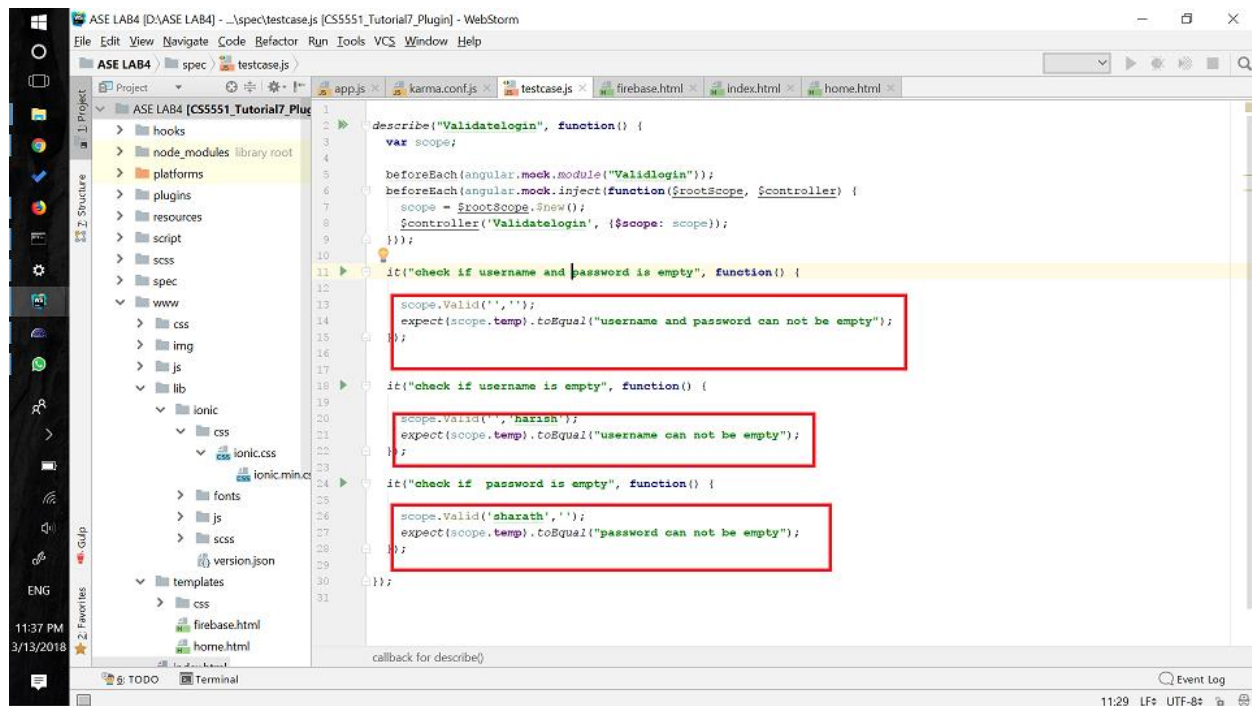
### Karma and Jasmine Unit tests:

The unit test are performed using karma and jasmine plugins in webstorm.

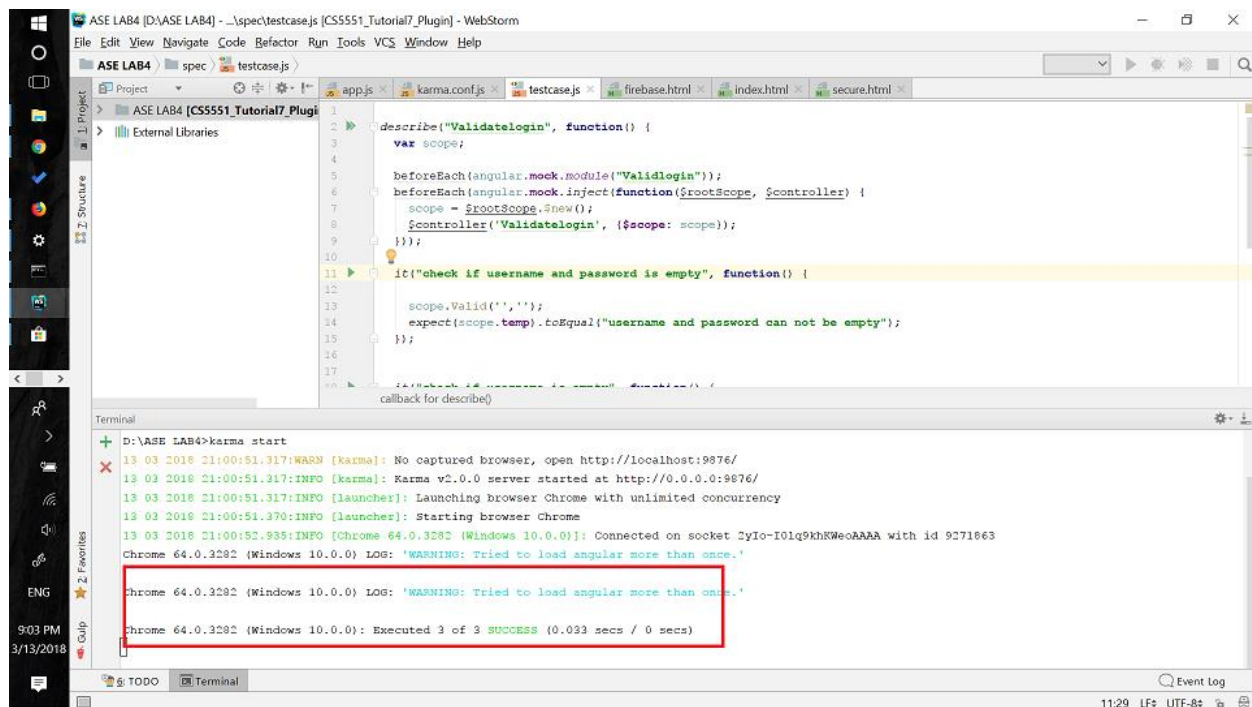
### karma.config page



## Test cases js page



## Execution of test cases





- Unit testing:

Test case Name	Expected Result	Actual Result	Result
Login with null values	Validation should be thrown to user to enter the mandatory fields.	Validation message is not displayed	Fail
Login with invalid user id	Validation should be done for valid user name	Validation message is not displayed for invalid user name	Pass
Login with invalid password	Validation should be done for valid password	Validation message is displayed for invalid password	Pass
Login on entering the username and password and clicking login button	User should be navigated to user home page	Successfully redirected to user home page.	Pass
Register with null values	Validation should be thrown to user to enter the mandatory fields.	Validation message is not displayed	Fail
Register with invalid email id	Validation should be done for invalid user id	Validation message is displayed for invalid email id	Pass
Register with invalid password	Validation should be done for invalid password	Validation message is displayed for invalid password	Pass

## ■ Yslow performance testing:

Grade c for login page

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

Home Grade Components Statistics

Rulesets YSlow(V2) Edit Help

Grade **C** Overall performance score 72 Ruleset applied: YSlow(V2) URL: http://localhost:8100/#/firebase

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

D Make fewer HTTP requests

F Use a Content Delivery Network (CDN)

A Avoid empty src or href

F Add Expires headers

F Compress components with gzip

B Put CSS at top

E Put JavaScript at bottom

A Avoid CSS expressions

n/a Make JavaScript and CSS external

A Reduce DNS lookups

D 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

F Use cookie-free domains

A Avoid AlphaImageLoader filter

Grade D on Make fewer HTTP requests

This page has 11 external Javascript scripts. Try combining them into one.  
This page has 3 external stylesheets. Try combining them into one.

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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chrome-extension://ninejcohidippngpapiilnmkgllmakh/yslow.html#

Home Grade Components Statistics

Rulesets YSlow(V2) Edit Help

Statistics The page has a total of 18 HTTP requests and a total weight of 3646.0K bytes with empty cache

WEIGHT GRAPHS

Empty Cache

HTTP Requests - 18

Total Weight - 3646.0K

1 HTML/Text 1.9K

11 JavaScript File 3255.4K

3 Stylesheet File 219.4K

1 CSS Image 169.0K

1 Favicon 0.1K

1 undefined 0.0K

Primed Cache

HTTP Requests - 17

Total Weight - 860.4K

1 HTML/Text 1.9K

10 JavaScript File 469.9K

3 Stylesheet File 219.3K

1 CSS Image 169.0K

1 Favicon 0.1K

1 undefined 0.0K

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Graded C for home page

10:15 PM  
4/23/2018

ENG

10:14 PM  
4/23/2018

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

HomeGradeComponentsStatistics

Rulesets YSlow(V2)EditHelp

Grade C

Overall performance score 73 Ruleset applied: YSlow(V2) URL: http://localhost:8100/#/secure

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

D Make fewer HTTP requests

F 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

E Put JavaScript at bottom

A Avoid CSS expressions

n/a Make JavaScript and CSS external

A Reduce DNS lookups

D 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

F Use cookie-free domains

A Avoid AlphaImageLoader filter

Grade D on Make fewer HTTP requests

This page has 11 external Javascript scripts. Try combining them into one.

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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Statistics

The page has a total of 17 HTTP requests and a total weight of 3645.9K bytes with empty cache

WEIGHT GRAPHS

Empty Cache

HTTP Requests - 17

Total Weight - 3645.9K

1 HTML/Text	1.9K
11 JavaScript File	3255.4K
2 Stylesheet File	219.3K
1 CSS Image	169.0K
1 Favicon	0.1K
1 undefined	0.0K

Primed Cache

HTTP Requests - 16

Total Weight - 860.2K

1 HTML/Text	1.9K
10 JavaScript File	469.9K
2 Stylesheet File	219.1K
1 CSS Image	169.0K
1 Favicon	0.1K
1 undefined	0.0K

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## 2.4 Implementation:

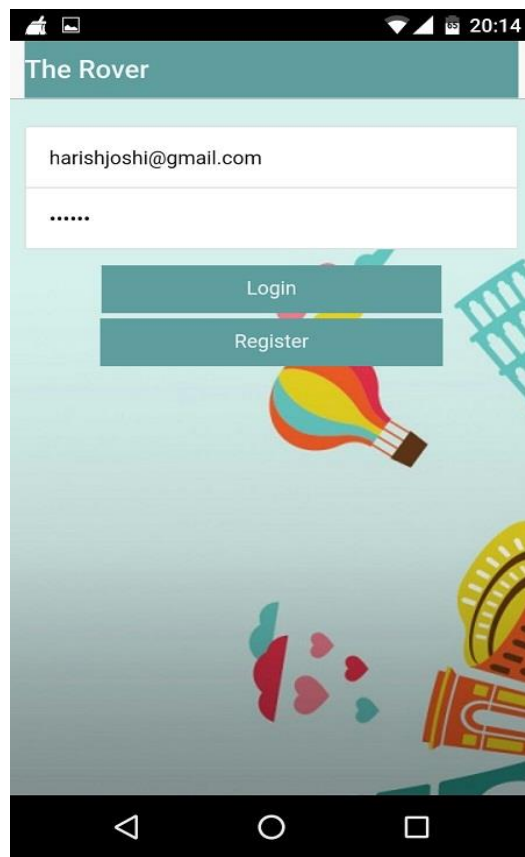
### ▪ Mobile implementation

Below are the steps involved in creating the application

#### **Login/Registration using Firebase Authentication.**

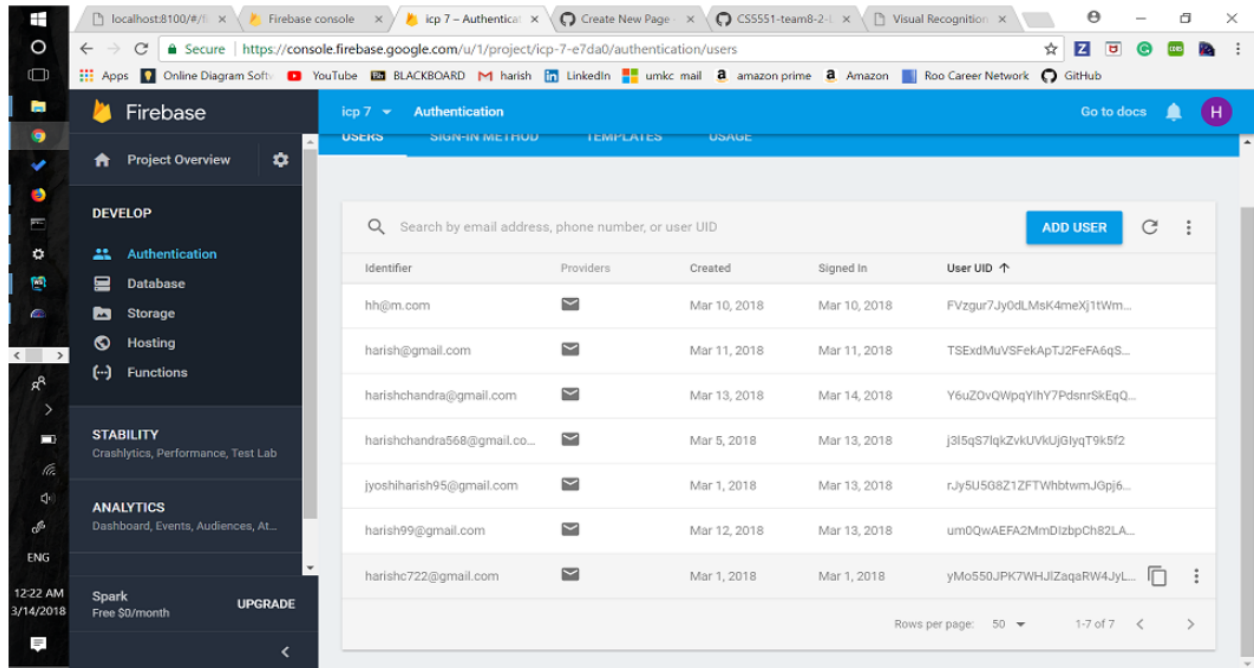
---

1. An ionic app is created with blank template.
2. Login and register pages with email and password are created.
3. Firebase Authentication is created for Login and registration



## Firebase Authentication

All the login details are stored in firebase. The user needs to register once before logging in. Here is the history of login details stored in firebase.



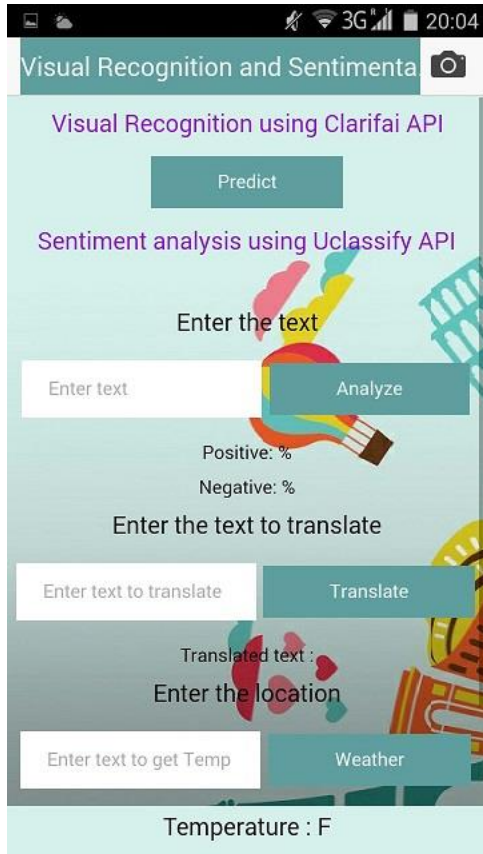
The screenshot shows the Firebase Authentication console in a web browser. The left sidebar contains the Firebase logo and navigation links for Project Overview, Authentication, Database, Storage, Hosting, Functions, Stability, Analytics, and Spark. The main content area displays the 'Users' tab with a search bar and an 'ADD USER' button. Below this is a table listing users with columns for Identifier, Providers, Created, Signed in, and User UID. The table contains 7 rows of user data.

Identifier	Providers	Created	Signed in	User UID
hh@m.com		Mar 10, 2018	Mar 10, 2018	FVzgr7Jy0dLMsK4meXj1tWm...
harish@gmail.com		Mar 11, 2018	Mar 11, 2018	TSExdMuVSFekApTJ2FeFA6qS...
harishchandra@gmail.com		Mar 13, 2018	Mar 14, 2018	Y6uZ0vQWpqYihY7PdsnrSkEqQ...
harishchandra568@gmail.co...		Mar 5, 2018	Mar 13, 2018	j3l5qS7lqkZvkUvKuj0IyqT9k5f2
jyoshiharish95@gmail.com		Mar 1, 2018	Mar 13, 2018	rJy5U5G8Z1ZFTWhbtwmJGpj6...
harish99@gmail.com		Mar 12, 2018	Mar 13, 2018	um0QwAEFA2MmDlzbPCh82LA...
harishc722@gmail.com		Mar 1, 2018	Mar 1, 2018	yMo550JPK7WHJlZaqaRW4JyL...

- After the user logs into the app, he can make use of all the services that are made available in the app. After signing in, the user will be redirected to the home page.

## Home page:

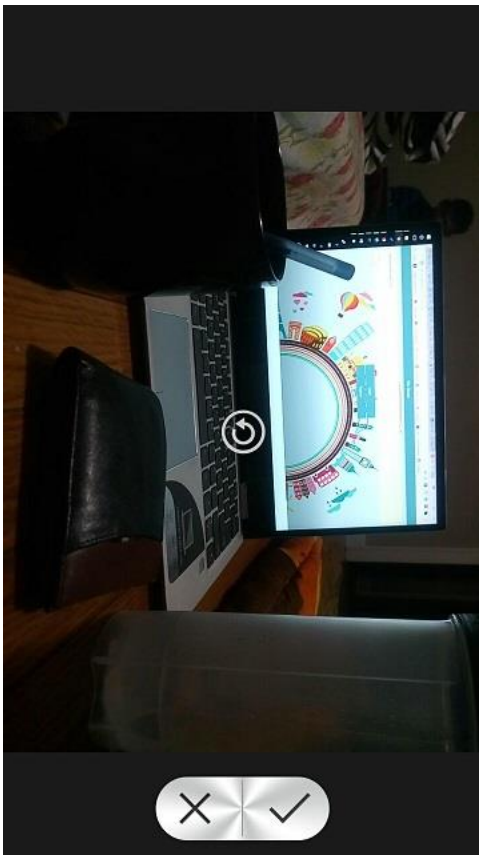
Here we used different API's for translating text, weather information, sentimental analysis and visual recognition and below are the screenshots attached.



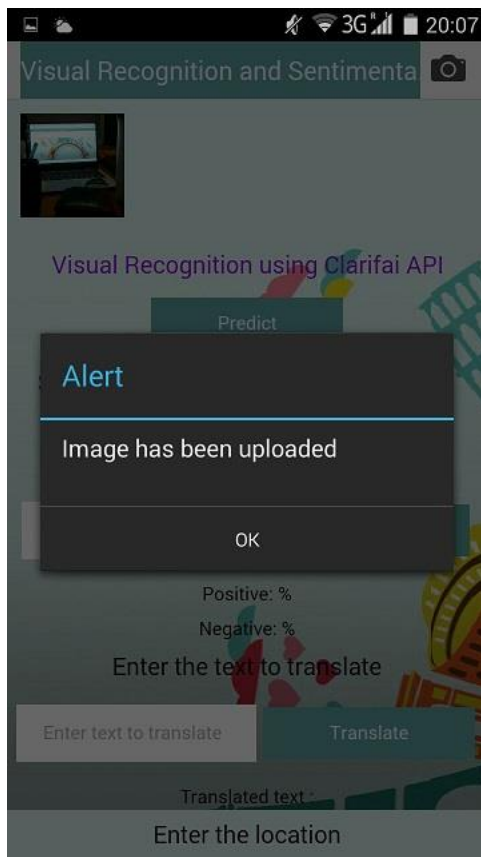
## Visual recognition API

Here we made use of **Clarifai** visual recognition API where we used the camera feature for capturing the images and thereby predicting the connected things , objects and any particulars to that of the image captured.

### Step1: Capturing Image using camera



## Step2: Image uploaded alert



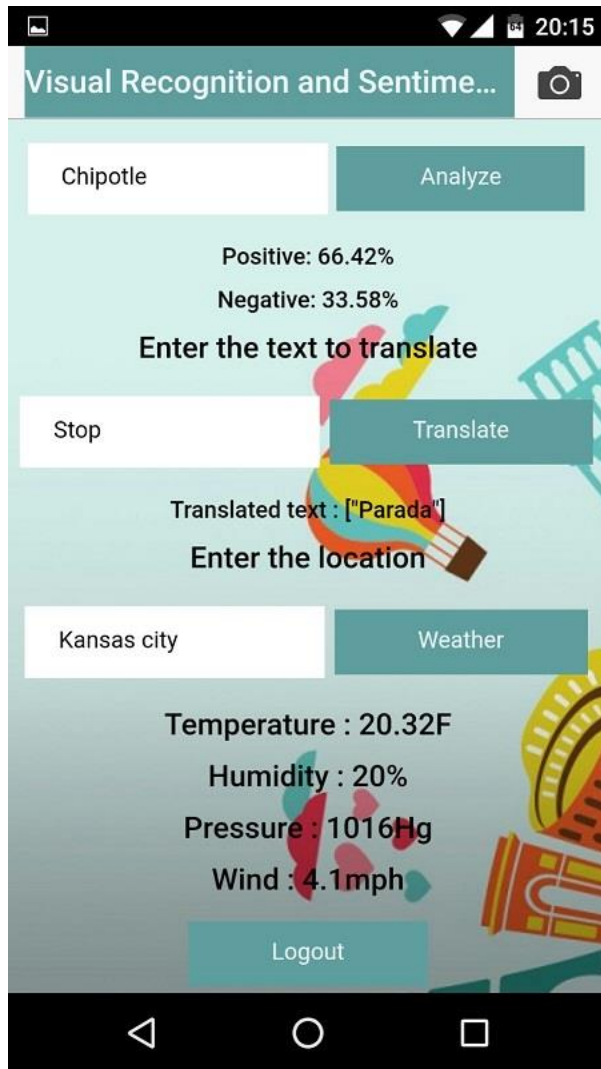


### Step 3: Prediction performed using the Clarifai API



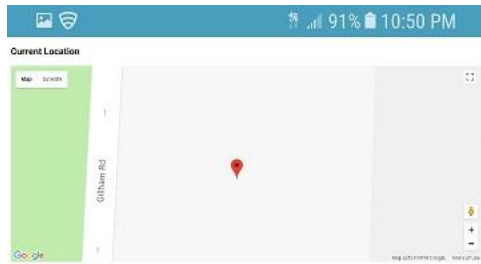
## Sentimental analysis, Translate, Weather API

- We used **Uclassify sentiment analysis** API .This API determines if a text is positive or negative. It's trained on 2.8 million documents with data from Twitter.
- We used **OpenWeatherMap** API for getting the current weather and also the **Translate Yandex** API.

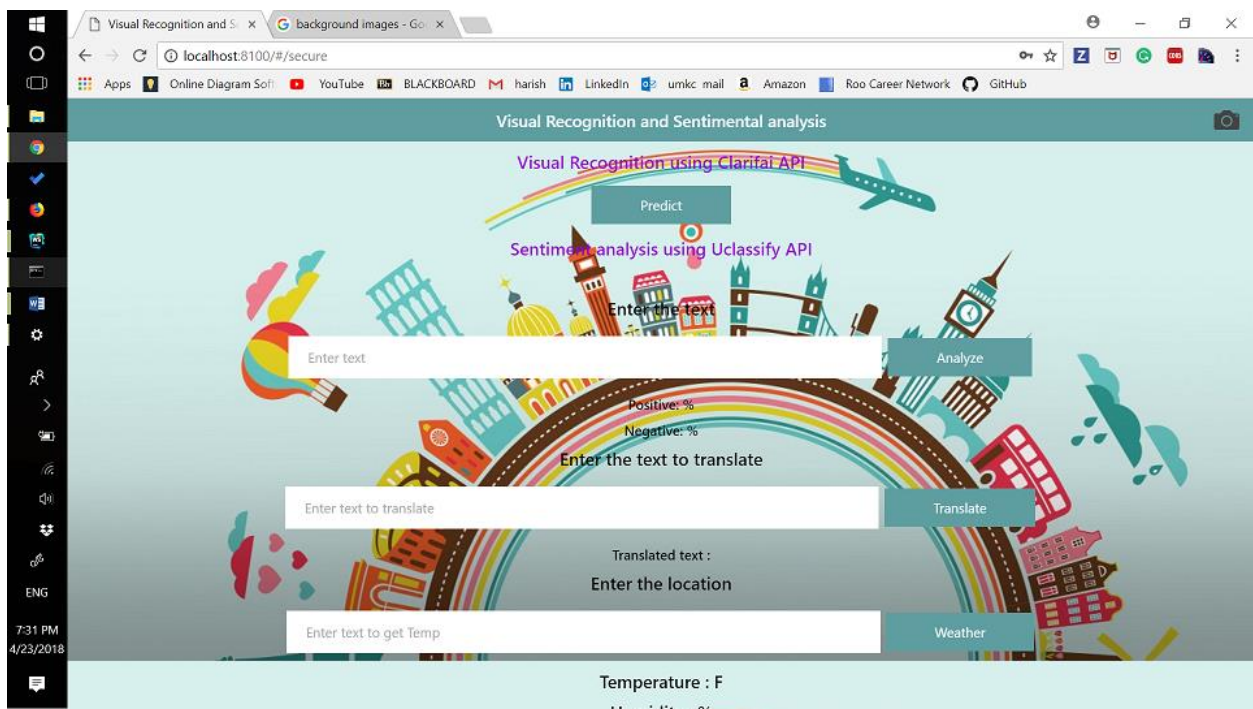
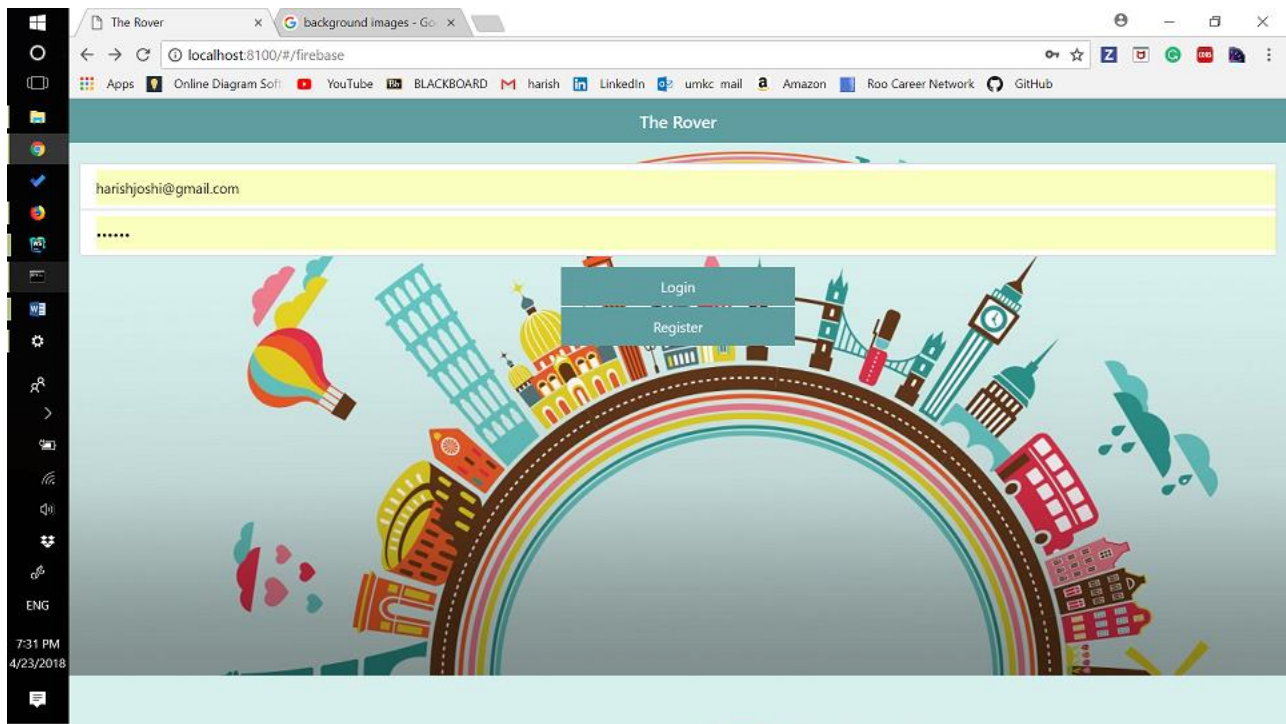


## Google Geo Location API

In this Increment we also made use of **Google geo location** API where we get the current location.



We developed the project in ionic framework. Following are the screenshots of the app in web browser.



Visual Recognition and S...  
localhost:8100/#/secure  
Apps Online Diagram Soft YouTube BLACKBOARD harish LinkedIn umkc mail Amazon Roo Career Network GitHub

Visual Recognition and Sentimental analysis

Visual Recognition using Clarifai API

Predict

Sentiment analysis using Uclassify API

Enter the text

china feast

Analyze

Positive: 55.62%  
Negative: 44.38%

Enter the text to translate

Stop

Translate

Translated text : ["Parada"]

Enter the location

california

Weather

Temperature : 28F  
Humidity : 12%

7:28 PM  
4/23/2018  
ENG

- **Augmented Reality:**

We used wikitude SDK for ionic to get nearby restaurants and gas stations in Augmented Reality. Following are the screenshots of Augmented Reality View.

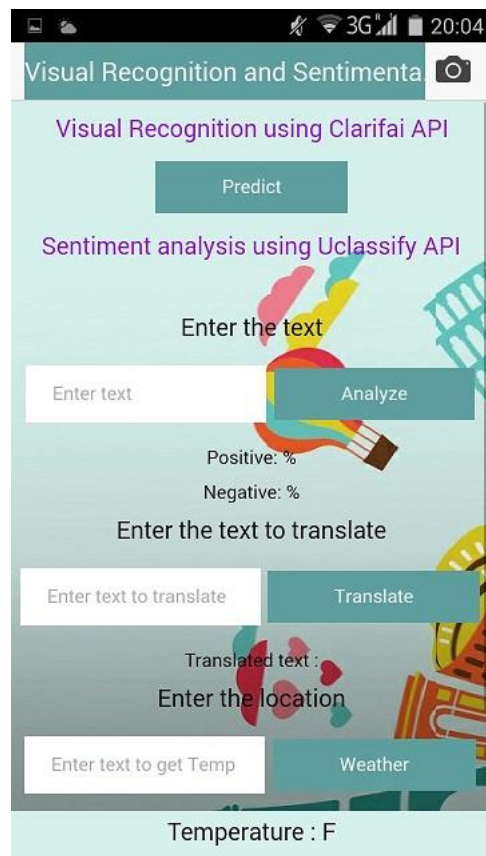
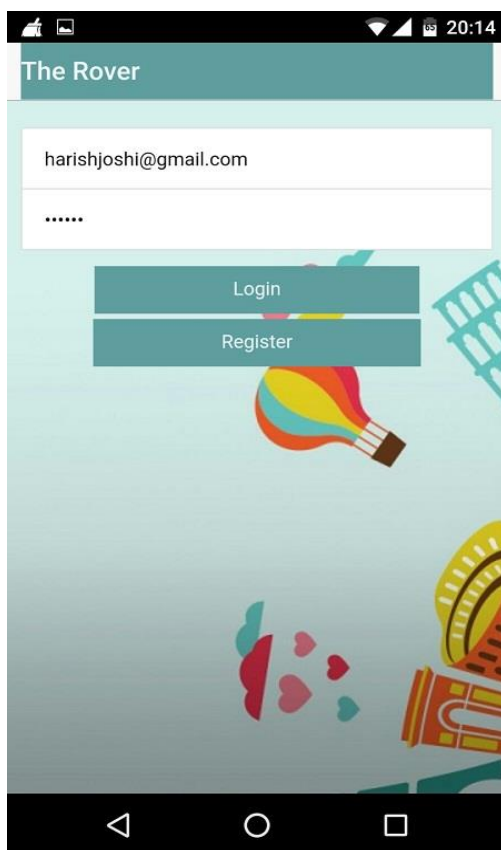






## 2.5 Deployment:

- We deployed our app to smart phone. Following are the screenshots.



- We also deployed our service into Heroku server. Here is the link of app running in Heroku server.

<https://whispering-wildwood-11675.herokuapp.com/#/firebase>

## 2.6 Project Management:

### Implementation status report:

Work completed:

**1.Augmented reality:** Developed augmented reality application using wiktitude SDK. This feature will be get nearby restaurants and gas stations.

Responsibility and time taken: Harish– Designed and implemented and feature (21 days)

**2. Changing UI:** Changed the user interface to deploy it into the mobile.

Responsibility and time taken: Sindhu and Ratnavalli- changed the user interface(21 days)

**3. Heroku server:** deployed the service in Heroku server and installed required dependencies.

Responsibility and time taken: Nagarjuna and Sindhu-Installed required dependencies. (10 days)

**4.Deploying in mobile:** deployed the application in mobile.

Responsibility and time taken: Ratnavalli-deployed the app in android platform and fixed some errors in the process.

### Concerns

Facing some issues while integrating the wiktitude.

### Future work:

Need to implement social media analysis, will be completed in 3 days.



Following are the screenshots of the Issues and Burndown chart in ZENHUB

The screenshot displays the ZENHUB web application interface for a project named 'ASE-Project'. The browser's address bar shows the URL: <https://app.zenhub.com/workspace/o/ratnavalli24/ase-project/boards?milestones=Increment%203%232018-04-23&repos=11913...>. The interface includes a sidebar with navigation icons and a main workspace with a Kanban board. The board has five columns: 'New Issues', 'Icebox', 'Backlog', 'In Progress', and 'Review/QA'. The 'New Issues' column contains four issues, each with a title, a status (Increment 3), and a priority (21). The other columns are currently empty. A search bar and a 'New Issue' button are located at the top right of the workspace.

ASE-Project

Repos (1/1) Labels Milestones Assignees Epics Releases

Find Issues (f+i) New Issue +

Increment 3 X Select all (4) Clear all filters

4 Issues - 84 Story Points New Issues

ASE-Project #12 Augmented reality Increment 3 21 enhancement

ASE-Project #13 Change UI Increment 3 21

ASE-Project #14 deploy in heroku server Increment 3 21

ASE-Project #15 deploy the app in mobile, create wireframes, test the app

0 Issues - 0 Story Points Icebox

0 Issues - 0 Story Points Backlog

0 Issues - 0 Story Points In Progress

0 Issues - 0 Story Points Review/QA

9:49 PM 4/23/2018

ASE-Project > ☆

Repos (1/1) ▾ Labels ▾ Milestones ▾ Assignees ▾ Epics ▾ Releases ▾

Find Issues (f+i) New Issue +

Increment 3 x Clear all filters

0 Issues - 0 Story Points  
Review/QA

0 Issues - 0 Story Points  
Done

4+ Issues - 84 Story Points  
Closed

ASE-Project #13  
Change UI  
Increment 3  
21

ASE-Project #15  
deploy the app in mobile, create wireframes, test the app  
Increment 3  
21  
enhancement

ASE-Project #14  
deploy in heroku server  
Increment 3  
21

ASE-Project #12

Add a Pipeline ...

https://app.zenhub.com/workspace/o/ratnavalli24/ase-project/reports?report=burndown&milestoneId=3085376&showPRs=f...

Boards Reports Overview Burndown report Velocity tracking Release report

Milestones Notifications Create... Invite your team View tutorials Shortcuts

9:49 PM 4/23/2018

9:50 PM 4/23/2018

Harish chandra Harish-Chandra95

Burndown report

Weekends Ideal Completed

Today

84 Total Story Points  
84 Completed / 0 Remaining

4 Total Issues  
4 Completed / 0 Remaining

Completed Issues	Story points
Augmented reality <b>enhancement</b> ASE-Project #12 New Issues Increment 3	21
Change UI ASE-Project #13 New Issues Increment 3	21
deploy in heroku server ASE-Project #14 New Issues Increment 3	21
deploy the app in mobile, create wireframes, test the app <b>enhancement</b> ASE-Project #15 New Issues Increment 3	21

## 2.7 References:

<https://www.wikitude.com/>