CS 5551 Advanced Software Engineering

Smart Police

Team 14

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Safety is a key feature in our life and it always is a priority while adding something new to our lives. The goal of this project is to create an application which will help police to find stolen cars by scanning license plates.

Objectives

The main goal of this application system is to provide the easy way to find the stolen car. Our app contains cameras which will scan the license plates either on the way or even in the parking slots and then it check whether it has any allegations or crime report active on that plate. Then, finally, it is reported to the police, which makes policemen job easy.

Motivation

If a car is stolen, user will log a complaint about the lost car in the police department. Police will update the stolen license number to the database. If any of car's camera scans the license plate of the stolen car, then the user location is immediately sent to the police department if we could find an evidence of the stole car then the required action will be taken by the department. We would like to create an android application for this showing the login and signup pages in order to access their location.

Significance

The key thing of the application is to provide the details of the theft cars and any other related cases on that car This app after scanning details of that plate it gives details like is that car theft.

System Features

In order to implement our application we will need to work on Android Studio and use different APIs which will help us to scan the license plate. We will be testing our application on real device with real products.

Prioritized Features:

Notifications: Smart Police has this feature which enables police to get up information about stole car by scanning the license plate.

Social media login: Social media login is like a must and should, as many people are engaged in different social medias like facebook,twitter. So, enabling user to login with those accounts instead of creating a new account for this application.

License plate scanning: This is the key feature of this app, we will scan the license plate of different cars. and find whether is it in the recorded database. This make user to find his stolen car easily.

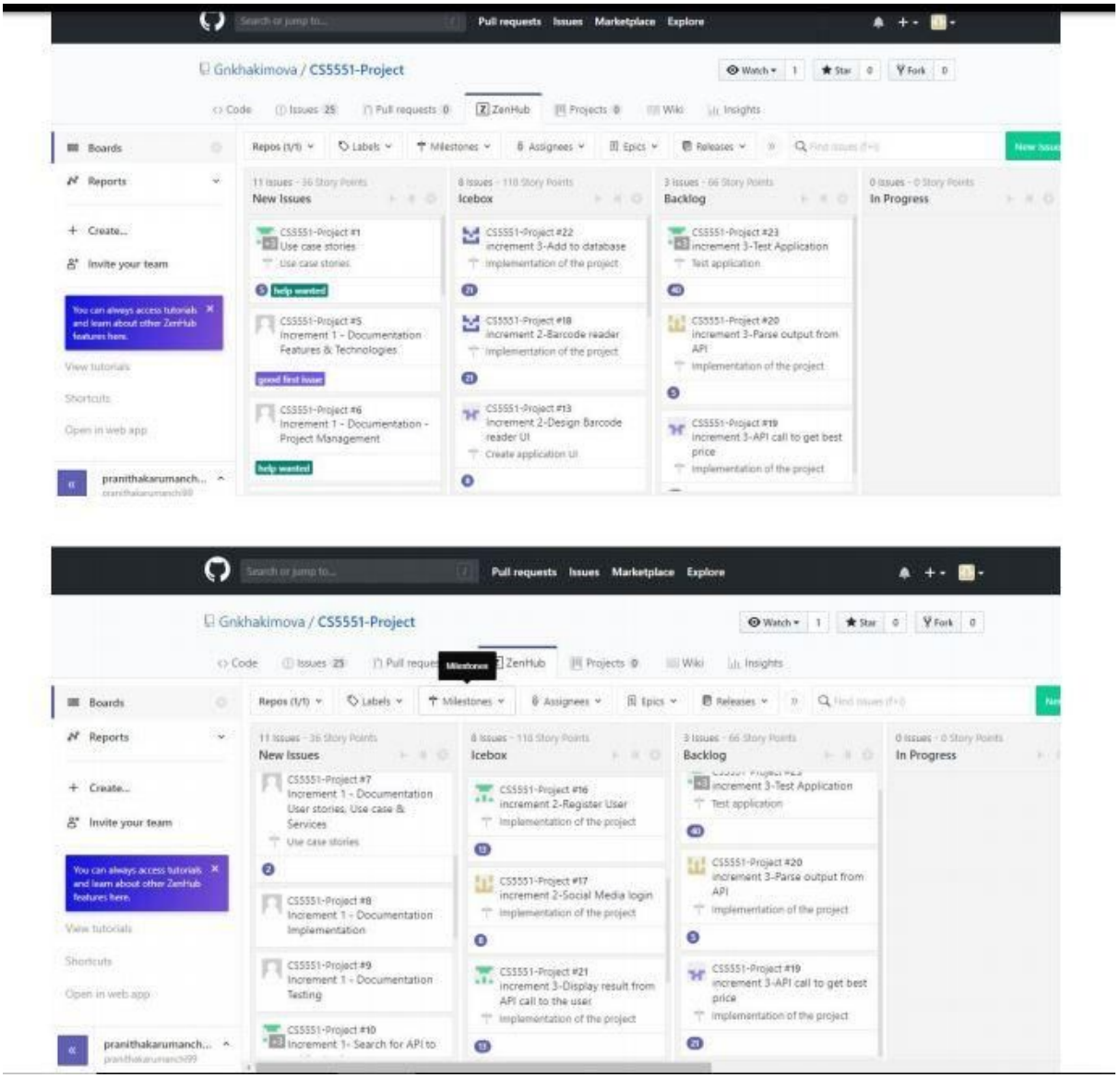
API: We use API to get better result. We call API which retrieve the information from database and shows to the user.

Technologies

Android studio: It is an official IDE. It is mainly used for application. It is a good editor tool where we can run over code and create UI according to our requirements. Here we are also using Gradle Plugin to run our code in different configuration. Our apk files can be easily moved to play store and can be edited. Using this we can check for performance , usability, by using lint tools. We are developing a android app, so this helps to support android wear apps.

SCHEDULE FOR THREE DIFFERENT INCREMENTS

We have finally proposed the project plan. Using the zenhub we have created the issues for our project. Project issues are divided as three increments. In the following, we gone show the work to improve in each increment.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Repos (1/1) Labels Milestones Assignees Epics Releases
New Issue
11 Issues · 36 Story Points
New Issues
CS5551-Project #1
Use case stories
Use case stories
help wanted
CS5551-Project #5
Increment 1 - Documentation
Features & Technologies
good first issue
CS5551-Project #6
Increment 1 - Documentation -
Project Management
help wanted
8 Issues · 110 Story Points
Icebox
CS5551-Project #22
increment 3-Add to database
Implementation of the project
21
CS5551-Project #18
increment 2-Barcode reader
Implementation of the project
21
CS5551-Project #13
Increment 2-Design Barcode
reader UI
Create application UI
8
3 Issues · 66 Story Points
Backlog
CS5551-Project #23
increment 3-Test Application
Test application
40
CS5551-Project #20
increment 3-Parse output from
API
Implementation of the project
5
CS5551-Project #19
increment 3-API call to get best
price
Implementation of the project
0 Issues · 0 Story Points
In Progress

Pull requests Issues Marketplace Explore
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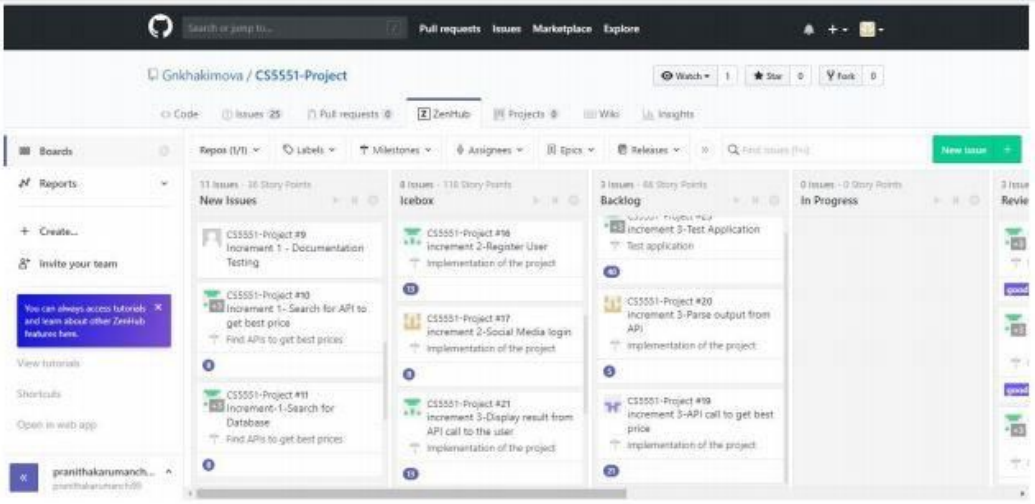
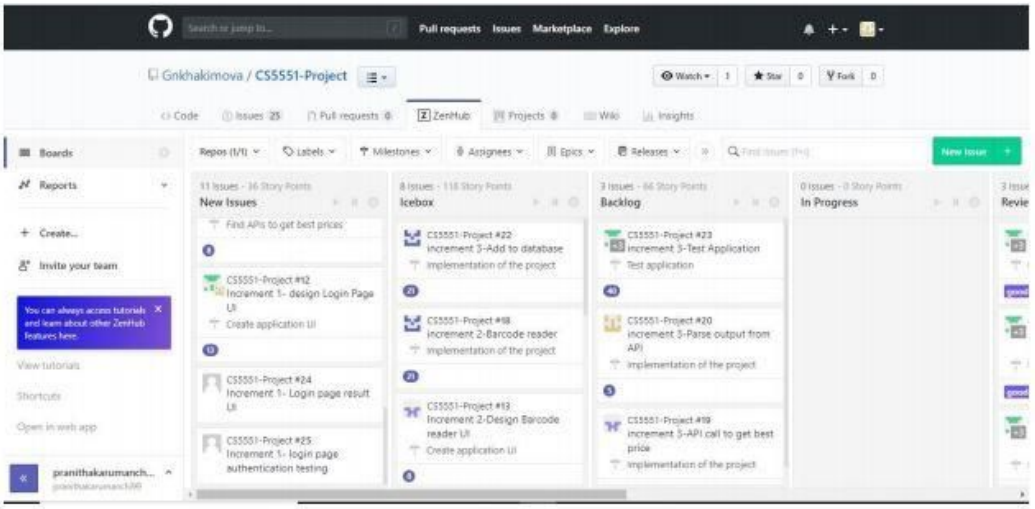
Repos (1/1) Labels Milestones Assignees Epics Releases
11 Issues · 36 Story Points
New Issues
CS5551-Project #7
Increment 1 - Documentation
User stories, Use case &
Services
Use case stories
2
CS5551-Project #8
Increment 1 - Documentation
Implementation
CS5551-Project #9
Increment 1 - Documentation
Testing
CS5551-Project #10
Increment 1- Search for API to
8 Issues · 110 Story Points
Icebox
CS5551-Project #16
increment 2-Register User
Implementation of the project
13
CS5551-Project #17
increment 2-Social Media login
Implementation of the project
8
CS5551-Project #21
increment 3-Display result from
API call to the user
Implementation of the project
13
3 Issues · 66 Story Points
Backlog
increment 3-Test Application
Test application
40
CS5551-Project #20
increment 3-Parse output from
API
Implementation of the project
5
CS5551-Project #19
increment 3-API call to get best
price
Implementation of the project
21
0 Issues · 0 Story Points
In Progress





Stories

- As a user, they want to login, and scan license plate.
- We call API to get location.
- We display result from API call to the user.
- User can check the details of the stolen car.
- User can login through social media sites.

Project TimeLines, Members, Task Responsibility

We divided our project work into three incremental parts. In each phase every team member has there own roles in developing this app. Tasks were assigned to every member and reviewed at the end of the period. In zenhub we can see each others contribution.

Members of our group:

Gulnoza Khakimova

Pranitha Saroj Karumanchi

Sushma Sri Surapaneni

Sai Kalyan Vytla

Task Responsibilities:

Gulnoza Khakimova: Project proposal and issues.

Pranitha Saroj Karumanchi: Stories, project timelines,task responsibilities,burndown chart and issues.

Sushma Sri Surapaneni: Schedule plan.

Sai Kalyan Vytla: Project features and Technologies and issues.

Burndown Chart

Increment Report

API's Used

Facebook API:

We used Facebook API for login into the page using OAuth 2.0 security.Through this we can sign up directly into the application as a facebook user.

OpenALPR:

We use this to recognize license plates from camera streams.**.** The obtained data is stored either in the cloud or we can store it in our local network. With this we can analyze still pictures. We can integrate this into our code directly.

API's Forthcoming:

- Google Maps API
- Facebook API
- OpenALPR

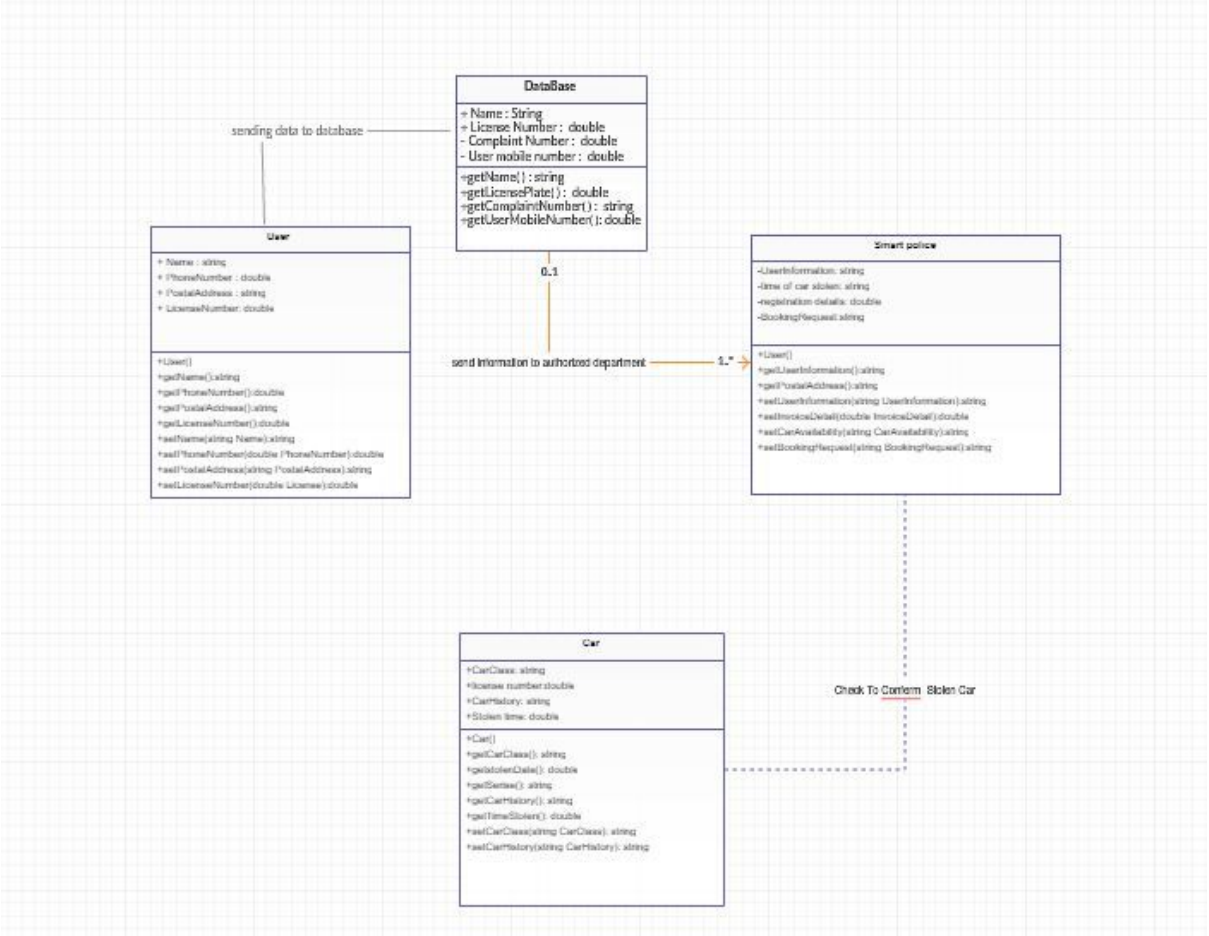
Design of Features (using tools)

Login Screen Wireframe:

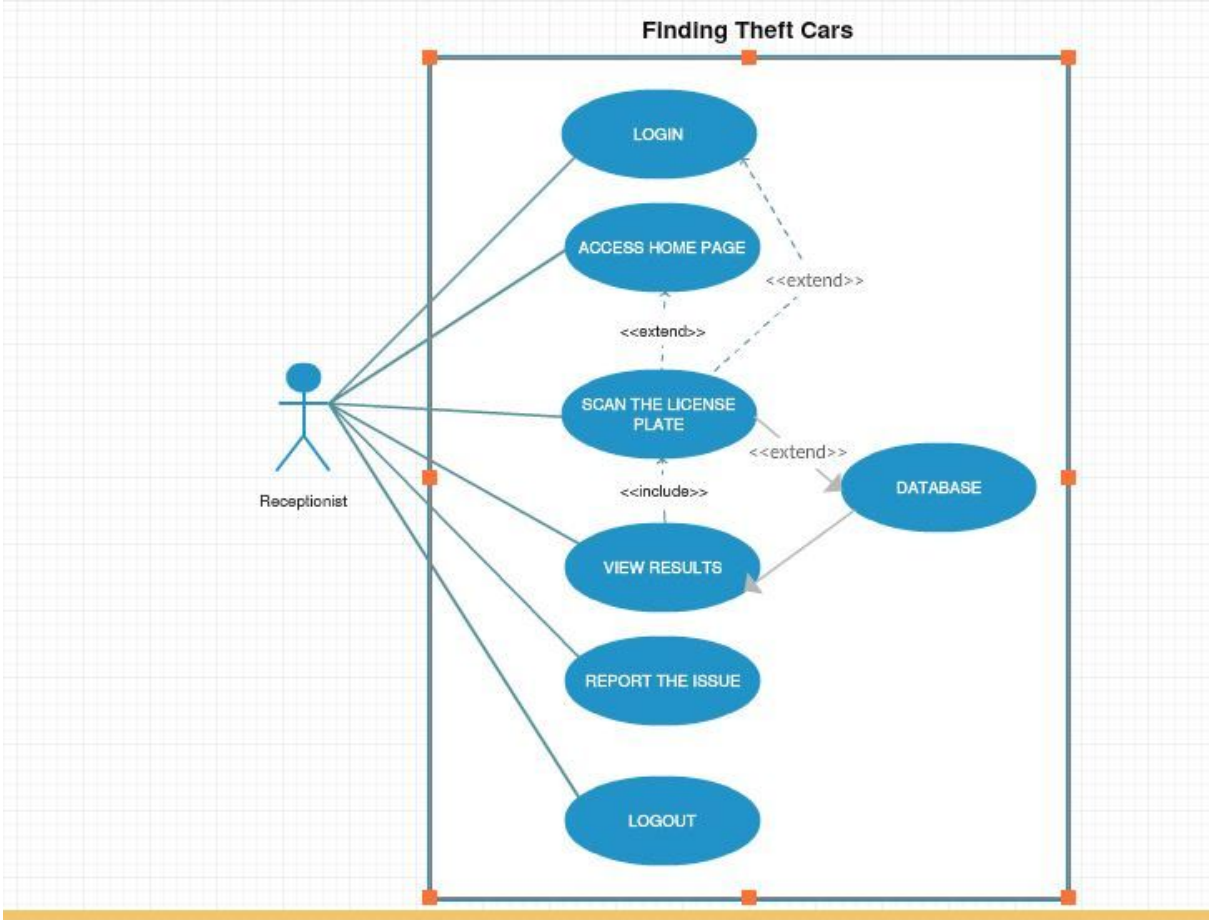
Signup Screen Wireframe:

Home Screen Wireframe

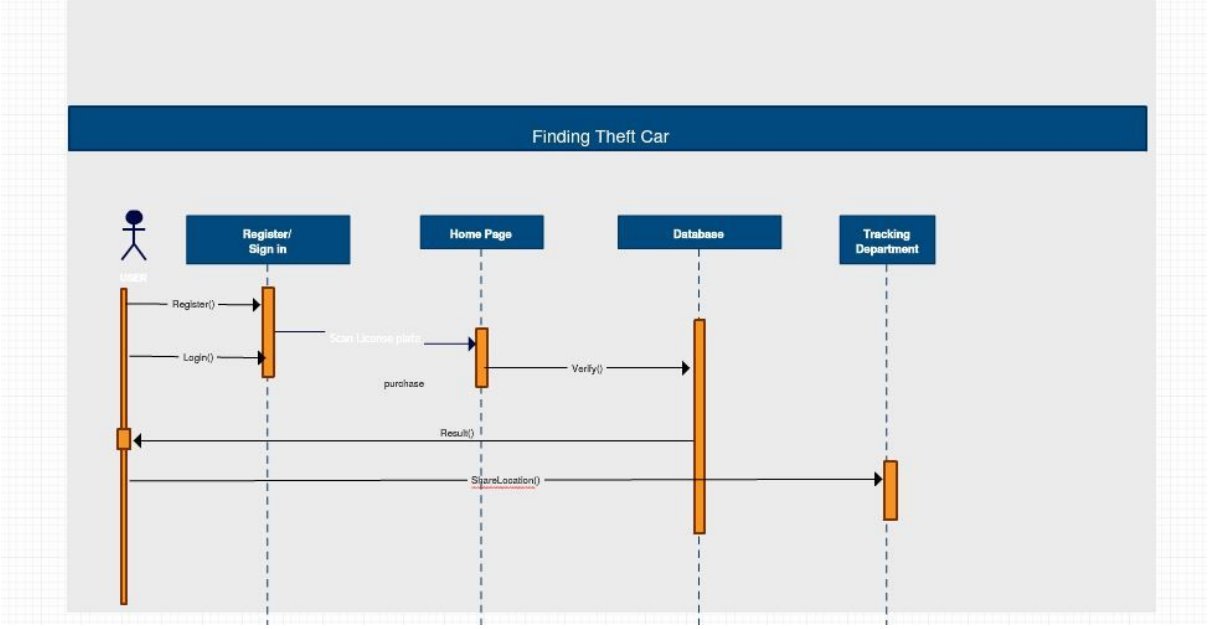
Class Diagram



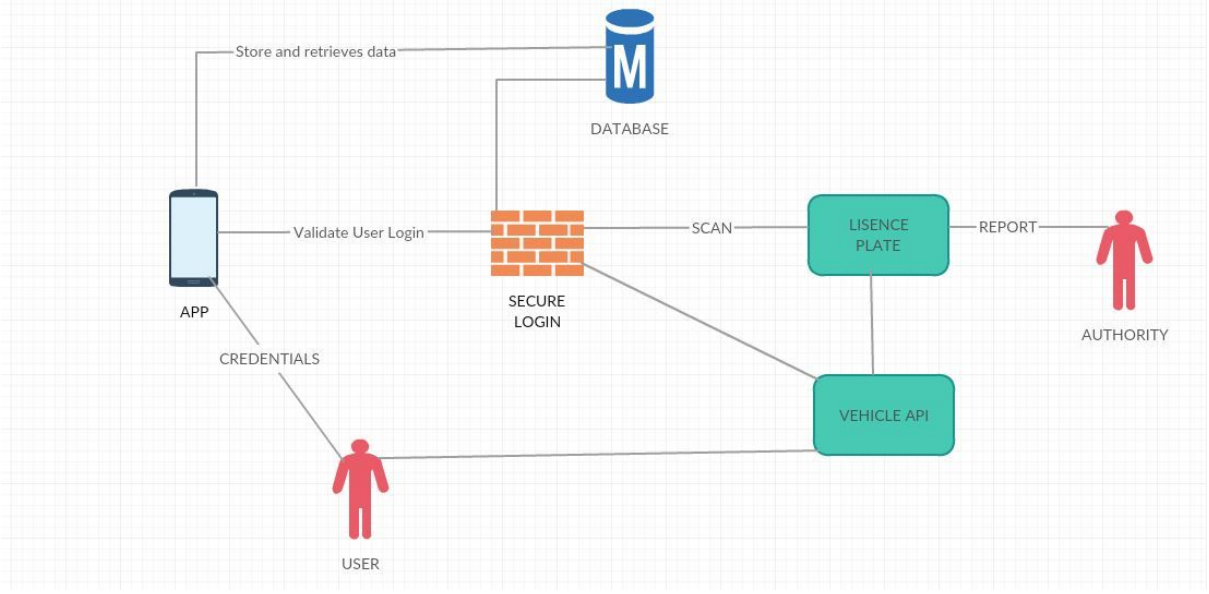
Use case Diagram



Sequence Diagram



Architecture Diagram



User Stories

I am	I need to	That
User	Login to the application	I can access the resources of the home page
User	Access the camera	I can able to get the picture .
User	Scan the license plate store	I'll be able to know either the car is stolen or not.
User	Know the result about the car	We can send the tracking of the location.
User	Get the history/notifications	I'll be able to reach all the information or the data.

Unit Testing

Test cases

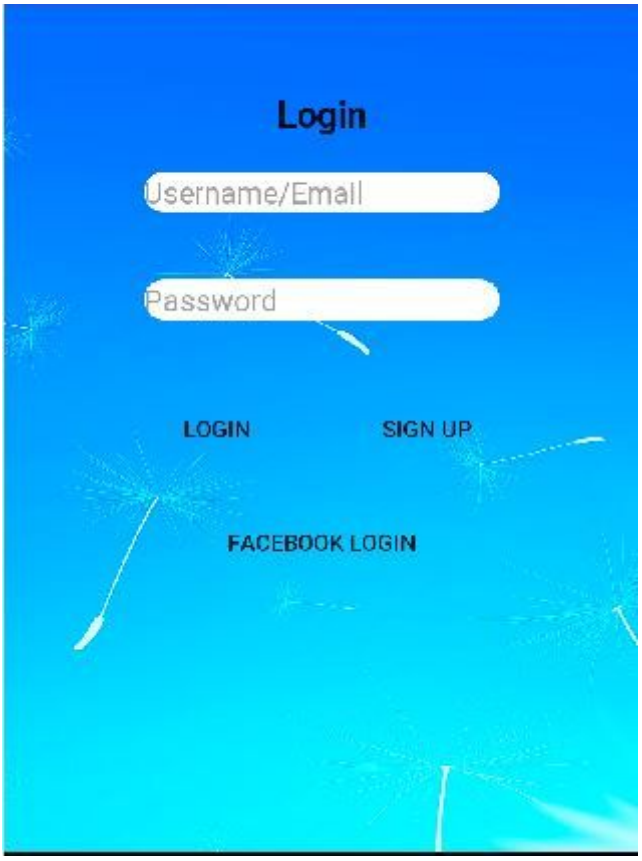
Case	Test Case n	Relevance Result	Original Result	Result
Login	Invalid Username and Password	warning should pop up,So that the given credentials are invalid	Warning should pop up, saying that incorrect credentials	Pass
Login	Invalid Username and Valid Password	Warning should pop up, saying that	Warning should pop up, so that	Pass

		wrong credentials and Re-enter valid username	incorrect credentials and Re-enter valid username.	
Login	correct Username and wrong Password	Error Message should pop up, stating that wrong credentials and Re-enter right password.	Error Message should pop up, stating that wrong credentials and Re-enter right password.	Pass
Login	Correct Username and Valid Password	Home Page.	directed to Home Page.	Pass
Signup	Should have correct email ID format	Enter correct email id	Enter correct email id	Pass
Signup	password length should be at least 8 characters	Enter correct password	Enter correct password	Pass
Signup	Password and confirm password should match	Passwords are not same	Passwords are not same	Pass

Deployment

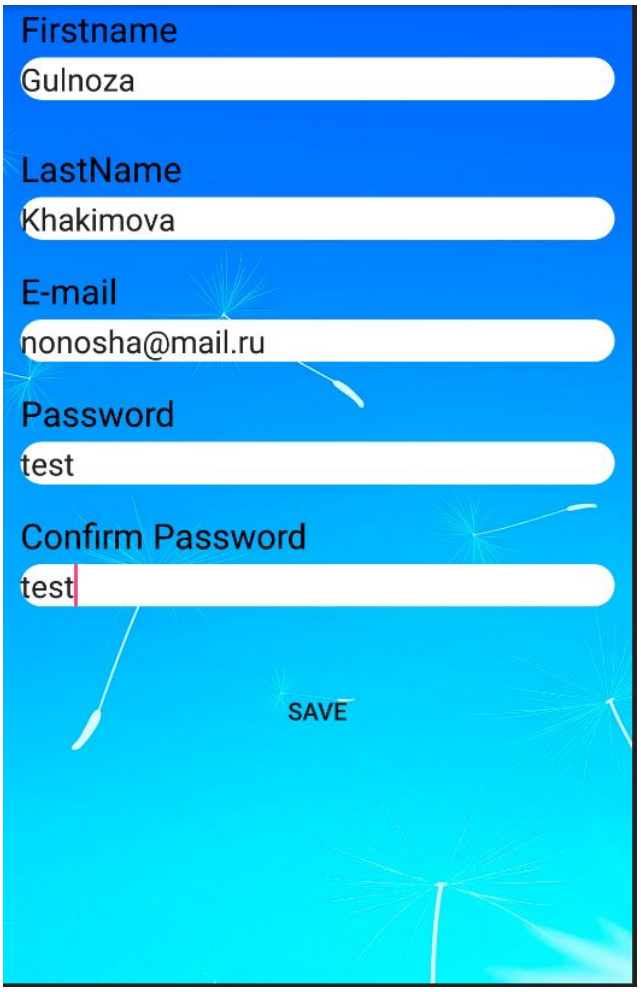
Our project implements mobile application using the API's. The below screenshots will give the process flow of the application.

The login page details that includes username, password. We also include facebook login.

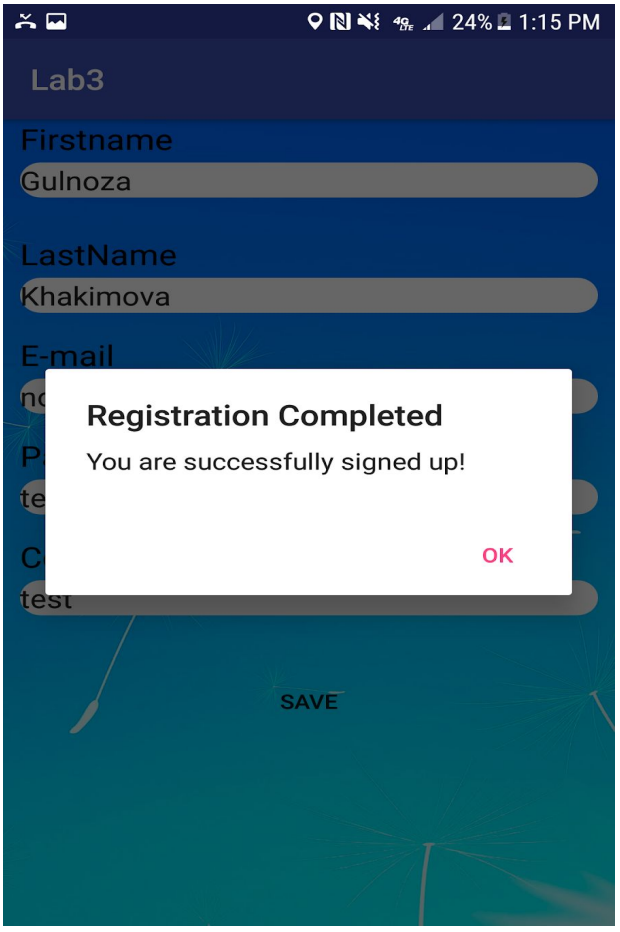


Register page has few fields, for new user to register to the application. Validation is done for email id, password. The below screenshot directs us to the registration page with all validations.

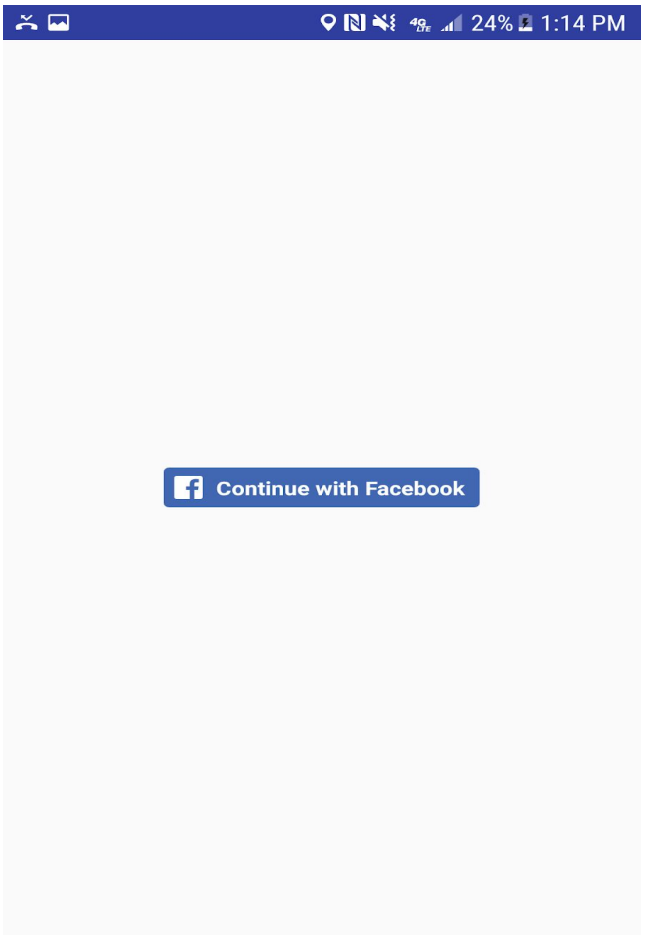
will give all required details for registration and for future login authentication.Below is the respective screenshot

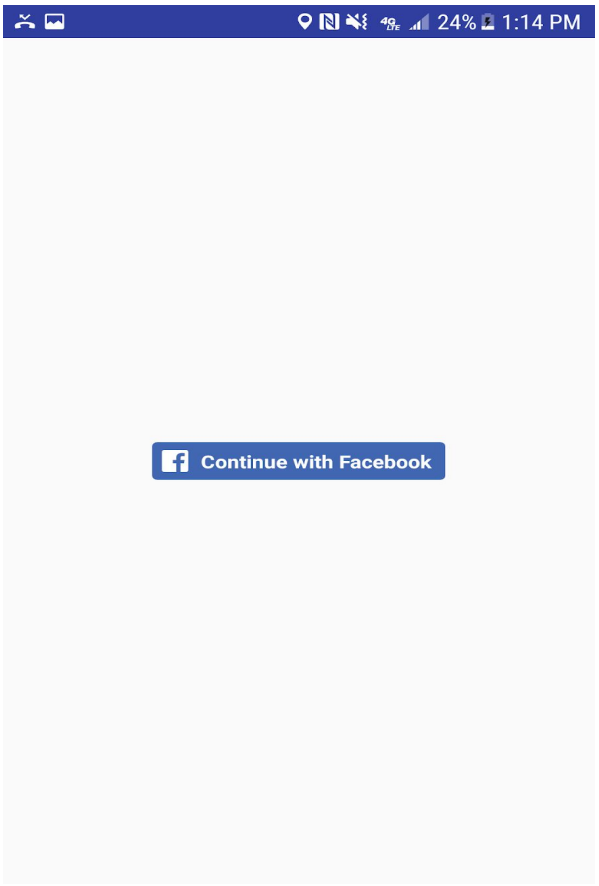


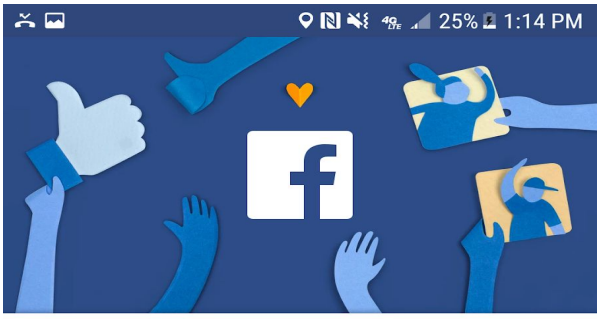
After successful sign up, all the register details are stored in the local storage. It pop as the successfully registerd.



Facebook Login screenshots







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Phone or Email

Password

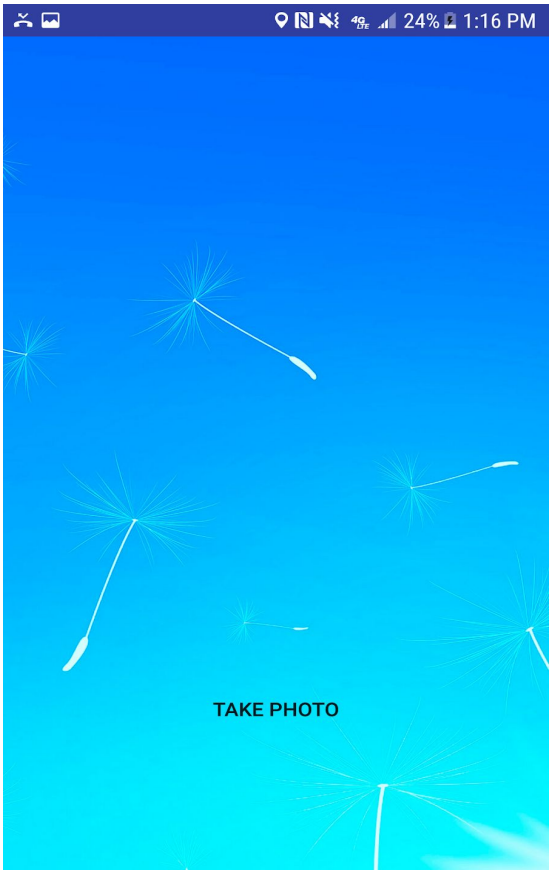
LOG IN

FORGOT PASSWORD?

OR

CREATE NEW FACEBOOK ACCOUNT

On register/login user is redirected to the home page, where the user can take access the camera.



- Here we take the picture of the license board of the car

- In the camera we can crop the picture according to our requirement.

- This is the final output of the phase1

Github Wiki

The following is the github wiki link

https://github.com/Gnkhakimova/CS5551-Project

Video Link

https://youtu.be/qnH8t8mttpo

Project Management Details

Implementation Report

Technologies We Used

The various technologies we used in this application.

- Java
- Xml
- Angular JS
- JavaScript

Work Completed

The completed tasks ,

- Design and implementation of Login and Register Pages,
- Design and ayout of the Home Page,
- Architecture and flow of the application is defined,
- API’s are successfully integrated in the application.

Work to be Completed

The work need to be completed for upcoming increment is,

UI for the web pages

Transition to other pages,

Integration of Restful API’s,

Better UI

.

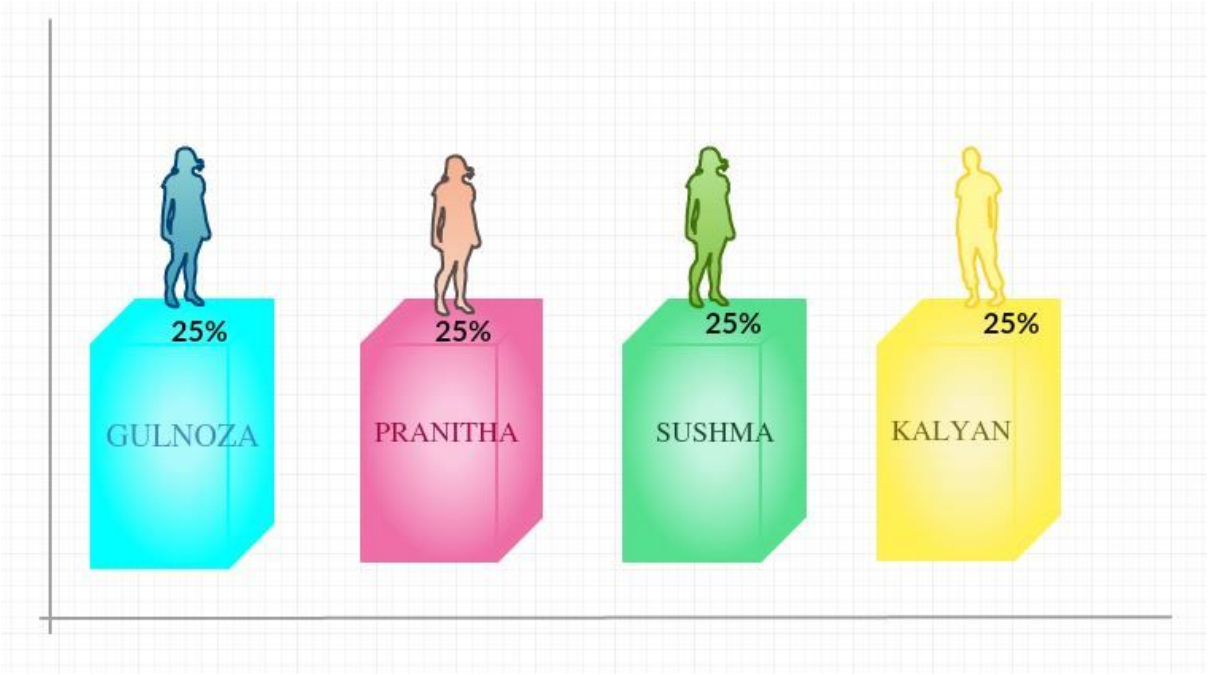
Responsibility and Time Taken

- Login Page, Gulnoza 3 hr.
- Registration Page, Gulnoza 3 hr.
- Design UI, Pranitha 3½ hr.
- UML Diagrams, Kalyan 5 hr.
- Wireframes, Sushma 3½ hr.
- Social Login OAuth, Kalyan 3½ hr.
- Integrating Pages, Sushma 2 hr.
- Home Page, Kalyan 3 hr.
- User Stories, Sushma 3 hr.
- Unit Test cases, Pranitha 3hr.
- Local Storage Implementation, Gulnoza 5 hr.
- Project Increment Report, Pranitha 5 hr.

Contributors

- Pranitha Saroj Karumanchi- **25%**
- Gulnoza Khakimova- **25%**
- Sushmasri Surapaneni- **25%**
- Sai Kalyan Vytla- **25%**

Below is the bar graph which describes the each team member work in this phase.



7. Bibliography

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2. www.angularjs.org
3. www.developers.facebook.com