MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION
MUMBAI

A

Capstone Project Execution Report

on

"Complaint Management System"

Submitted by-

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DEPARTMENT OF COMPUTER ENGINEERING

Shri Swami Vivekanand Shikshan Sanstha's

Dr. Bapuji Salunkhe Institute of Engineering & Technology Kolhapur.

Academic Year: 2021-22

Shree Swami Vivekanand Shikshan Sanstha's

Dr. Bapuji Salunkhe Institute of Engineering & Technology, Kolhapur.

Certificate

This is to certify that

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Miss. Vaishnavi Maruti Zanjage (3307)

Mr. Siddhesh Indrajeet Kamble (3308)

from institute Dr. Bapuji Salunkhe Institute of Engg. and Tech., Kolhapur has completed the capstone project execution report having title **"Complaint Management System"** in a group consisting of 4 candidates under the guidance of the faculty guide.

Place : **Kolhapur**

Date: **21 /5/ 2022**

Prof. A.R.Sawant	**Prof. A.R.Sawant**	**Prof. Ramachandran Patil**
GUIDE	**HOD**	**Principal**
	Computer Engg. Dept.	

Acknowledgement:

With deep sense of gratitude, we would like to thank all the people who have lit out path with their guidance. We are very grateful to these intellectuals who did their best to help our project work.

It is our proud to privilege **Prof. Ramchandra Patil**, Principal of Dr. Bapuji Salunkhe Institute of Engineering and Technology Kolhapur, for his comment and kind permission complete this project. We remain indebted to **Prof. A. R. Sawant**, Head of Computer Engineering Department for their timely suggestions and valuable guidance.

A special thanks to our guide **Prof. A. R. Sawant**, and all the staff members of Computer Engineering Department for their excellent and precious guidance in completion of this work.

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And lastly, we thank to our all friends and the people who are directly or indirectly related to our project work.

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Abstract:

In India we don't have any direct communication between the government and public in an efficient way for solving the problems. A web application is proposed to overcome their problem by delivering the grievances to the government. It will provide a common man to deliver his complaints and problems to municipal authority as well as let the municipal authorities to address the problem in a short period of time. It acts as interface to register one's complained and follow it up and also it provides a complaint module which helps clicking up a picture of any problem that people are facing and text information along with the complaint.

In addition to that it also includes the online discussion forums and feedback forms which will help them to communicate well with the government and then how effectively the funds are utilized for the development purpose can be known by Public.

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CHAPTER 1: INTRODUTION

In our country there is no direct communication between the person who complaints and government. It leads to inconvenience to the public by standing in long queue and waiting for the acknowledgment of their complaints. Acknowledgment of the people and their complaints cannot reach properly to the higher authorities who are responsible to solve the problem. The existing models has been in the form of ideas, doesn't implemented at real time. Some sites gives information about the authorities but not allowed to register complaints by a common people. Here we have developed a web application to register complaint through online.

In Online Complaint management system, the public who are facing different problems in the localities can register their problems with this online application. This project is having that potential to reduce the gap between people and Govt. It can control unethical work of bribe and even it can reduce the processing time. In this project identification and solution for the complaints given by the people, rectifying the complaints is the main concept of the project. A clear report is generated by the system which shows name, complaint type, etc. All the above attributes help while viewing the report of complaints. The admin examines weather the problem is rectified or not within the grace period. The main objective of this project is to make easy the process of complaint reporting with very simplified and effective way. This project involves major problem solving modules where these acts as best solution for incoming bulk complaints. For every submission of complaint, the user gets complaint acknowledgement. All these type of acknowledgement is generated by the computer; the solution of time may differ from the type of the complaint and category. To make any complaint, it is made mandatory for the user to mention his contact details, so that it does not receive any anonymous complaint details.

CHAPTER 2: LITERATURE SURVEY

This system aims to create a platform for citizen registering complaints in their locality.. In this system, there is two users of the system –administrator, citizen. The administrator can be able to assigned workers and updates status of complaint. The citizen can be able to register complaint, track progress of complaints and give feedback on the given complaints.

CHAPTER 3: SCOPE OF PROJECT

3.1 Problem Statement

Currently our government has manual system of registering citizen complaints. It's outdated now. As nobody has a time to stand in queue in order to register complaints and time-consuming process.

3.2 Objective

1. To create user-friendly interface.
2. To provide facilitate communication between citizen and government to Become more easy and speedy
3. To increase the quality of government services by saving effort, time and Take feedback.

3.3 Scope

The main purpose of this system is to registering complaints about problem without going manually to the office. This system provides give proper acknowledgement about the registered complaints and also display current status of the complaints. It will reduce time and paper work.

CHAPTER 4: METHODOLOGY

4.1 Requirement Analysis

Sr. No.	Name of Resources Used	Specification
1.	Android Studio	Frontend: Backend: Java
2.	Database	Real-time firebase database

Hardware requirements

1. System : Dual Core
2. Hard Disk : 500 GB
3. Monitor: 15 VGA Colour.
4. Mouse: Logitech.
5. RAM : 4GB or more

4.2 Architecture Diagram

Figure 4.2.1: System Architecture Diagram

4.3 Technology Used

Android Studio-

1. Android is a stack of software for mobile devices that are an operating system, middleware and applications
2. Android is Linux based operating system which is designed for touchscreen mobile devices like smartphones and tablet computers.
3. It is an open source technology that allows the software to be freely modified ad distributed by device manufacturers, wireless carriers and developers.
4. Android was unveiled during 2007 along with the founding of the Open Handset Alliance.

Firebase-

Firebase is a Backend-as-a-Service (Baas). It provides developers with a variety of tools and services to help them develop quality apps, grow their user base, and earn profit. It is built on Google's infrastructure.

Key Features of firebase:

1. Authentication

It supports authentication using passwords, phone numbers, Google, Facebook, Twitter, and more. The Firebase Authentication (SDK) can be used to manually integrate one or more sign-in methods into an app.

2. Real-time database-

Data is synced across all clients in real-time and remains available even when an app goes offline.

3. Hosting-

Firebase Hosting provides fast hosting for a web app; content is cached into content delivery networks worldwide.

4. Test lab-

The application is tested on virtual and physical devices located in Google's data centers.

CHAPTER 5: DETAILS OF DESIGN, WORKING AND PROCESSES

5.1 Diagrams

5.1.1 DFD

Level 0 DFD: Show outline of system modules

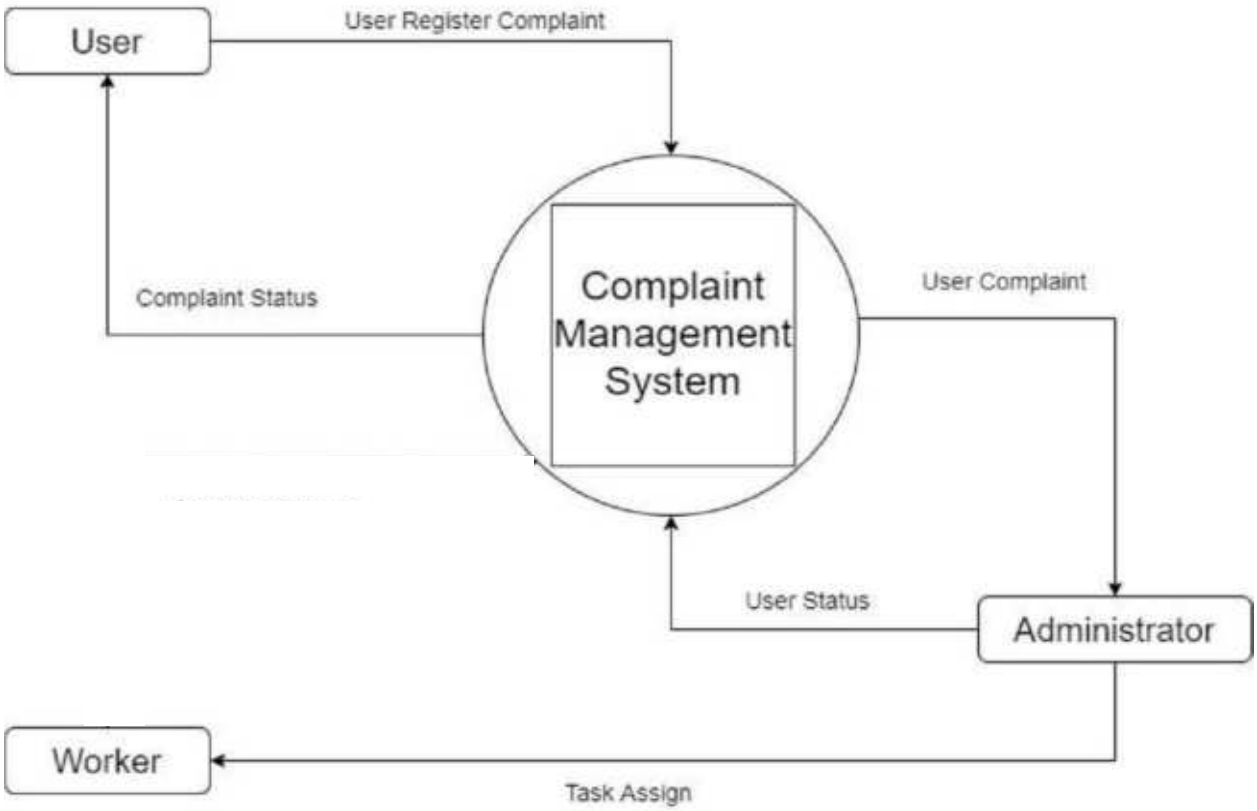

Figure 5.1.1: level 0 DFD Diagram

Level 1 DFD: This shows the separation of all external modules, relationship between those Modules and the application.

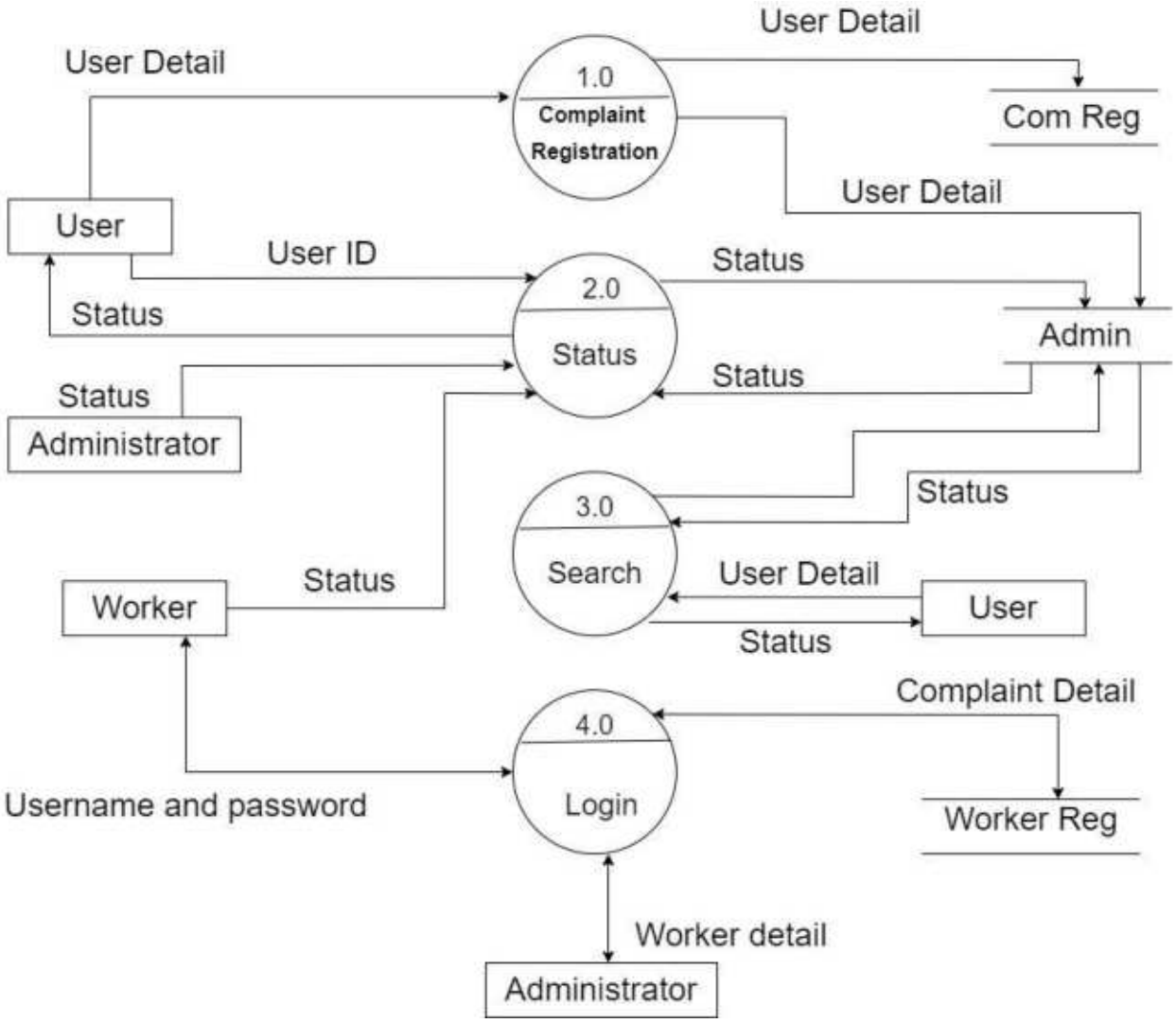

Figure 5.1.2: level 1 DFD Diagram

5.1.2.1 Use case Diagram

Client use case diagram:

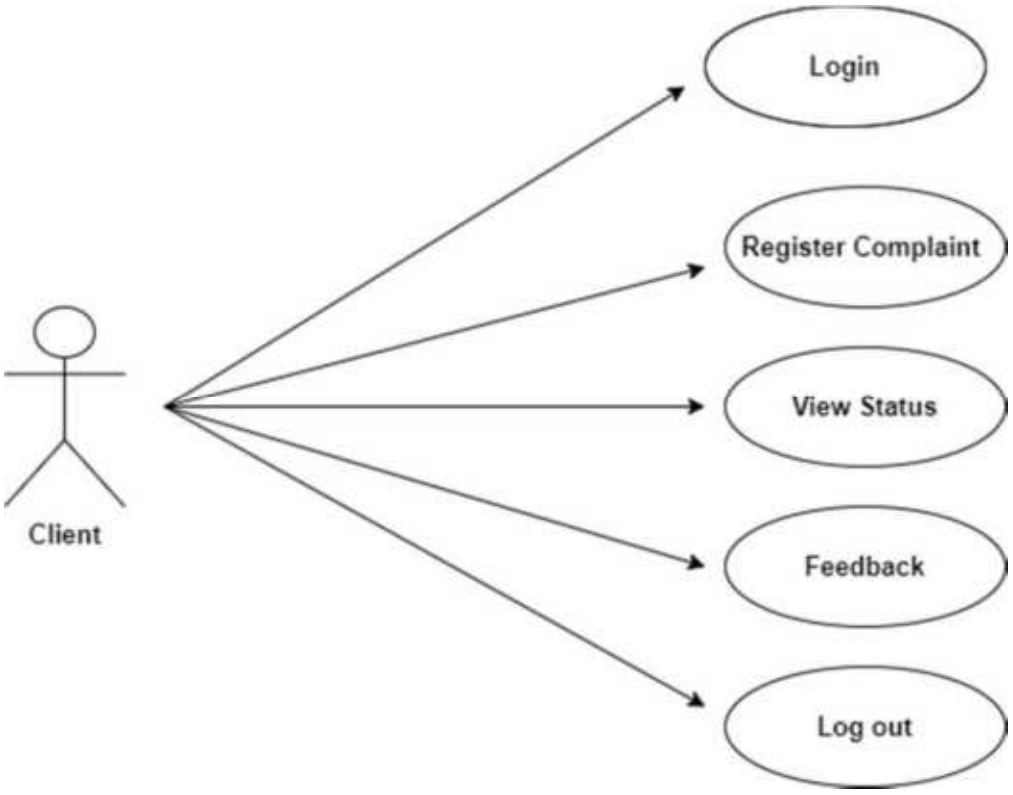

Figure 5.1.2.1: Client Use Case Diagram

5.1.2.1.2 Administrator use case diagram:

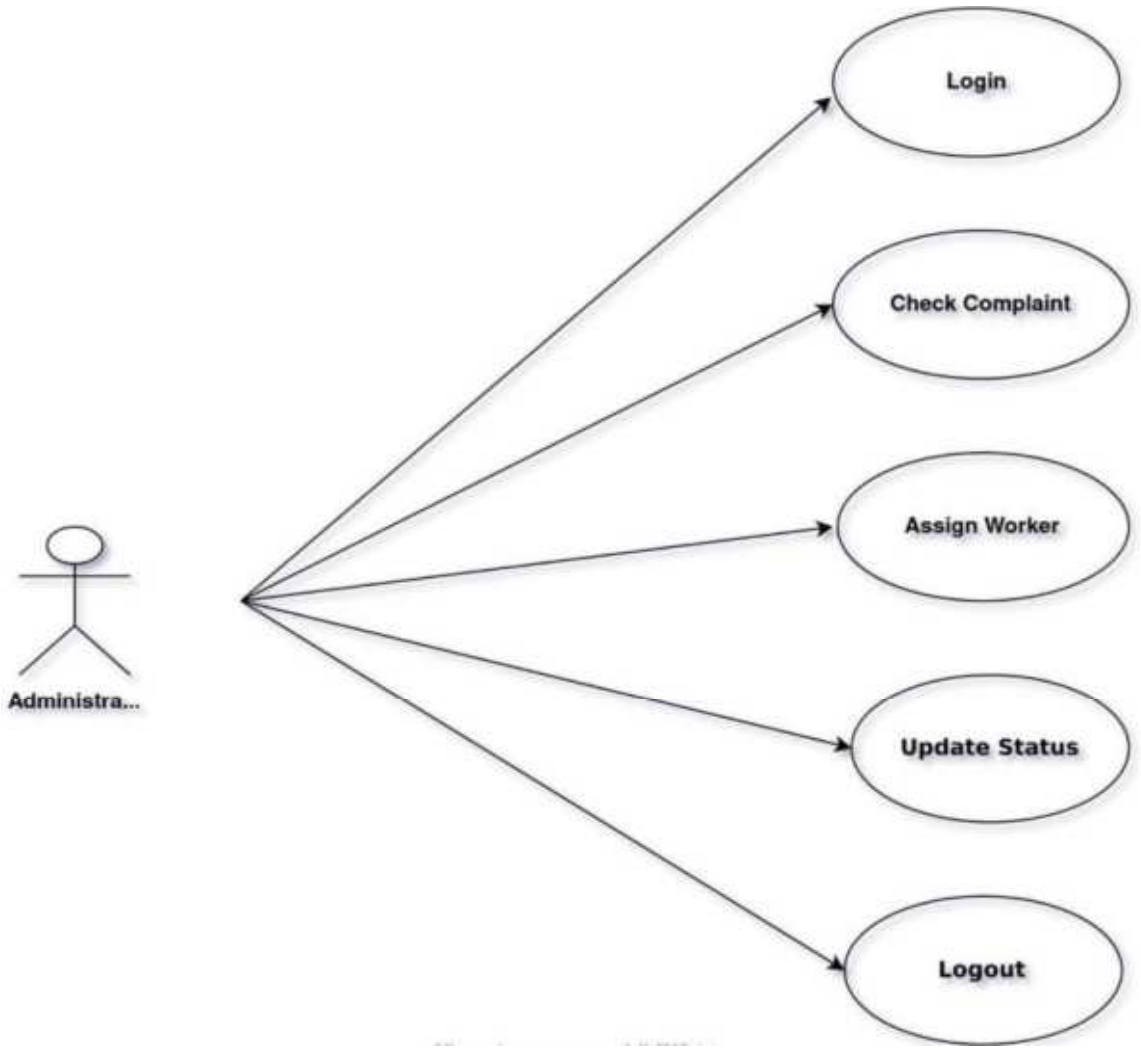

Figure 5.1.2.1.2: Administrator use case Diagram

5.1.2.1.3 Client Use Case Diagram.

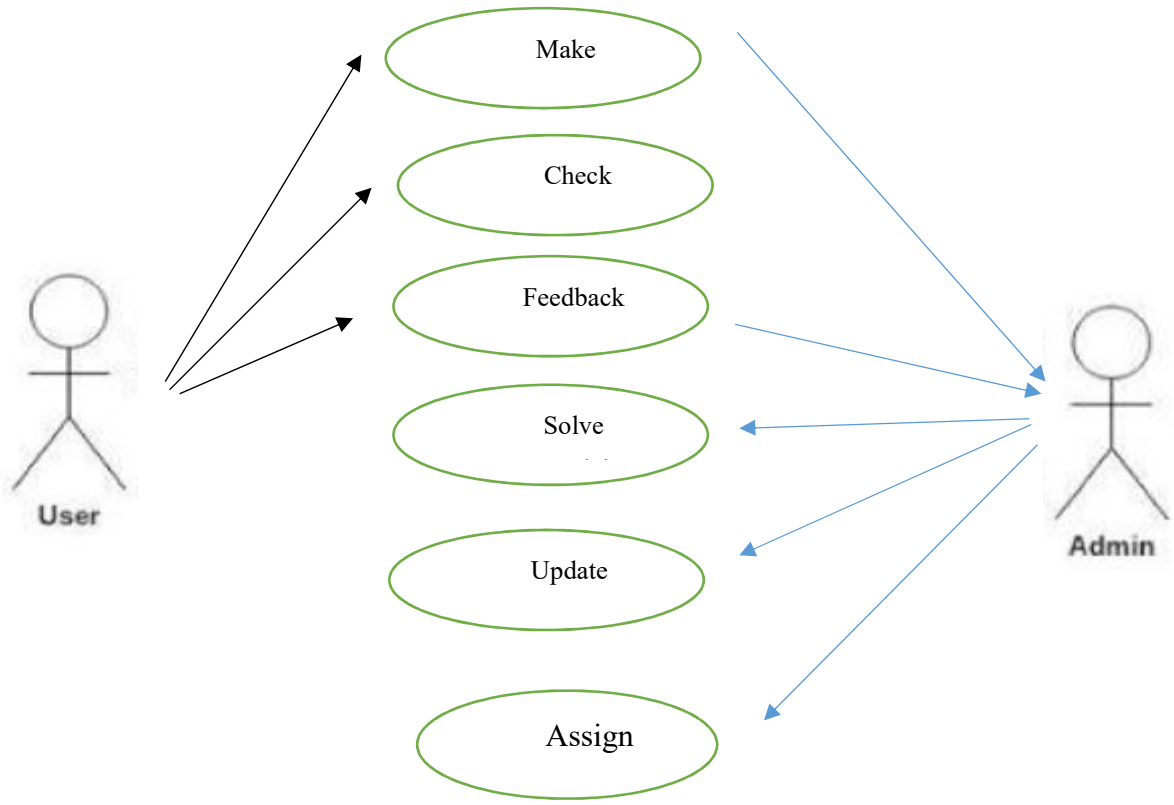

Fig 5.1.2.1.3: Client Use Case Diagram.

5.1.2.2 Activity Diagram

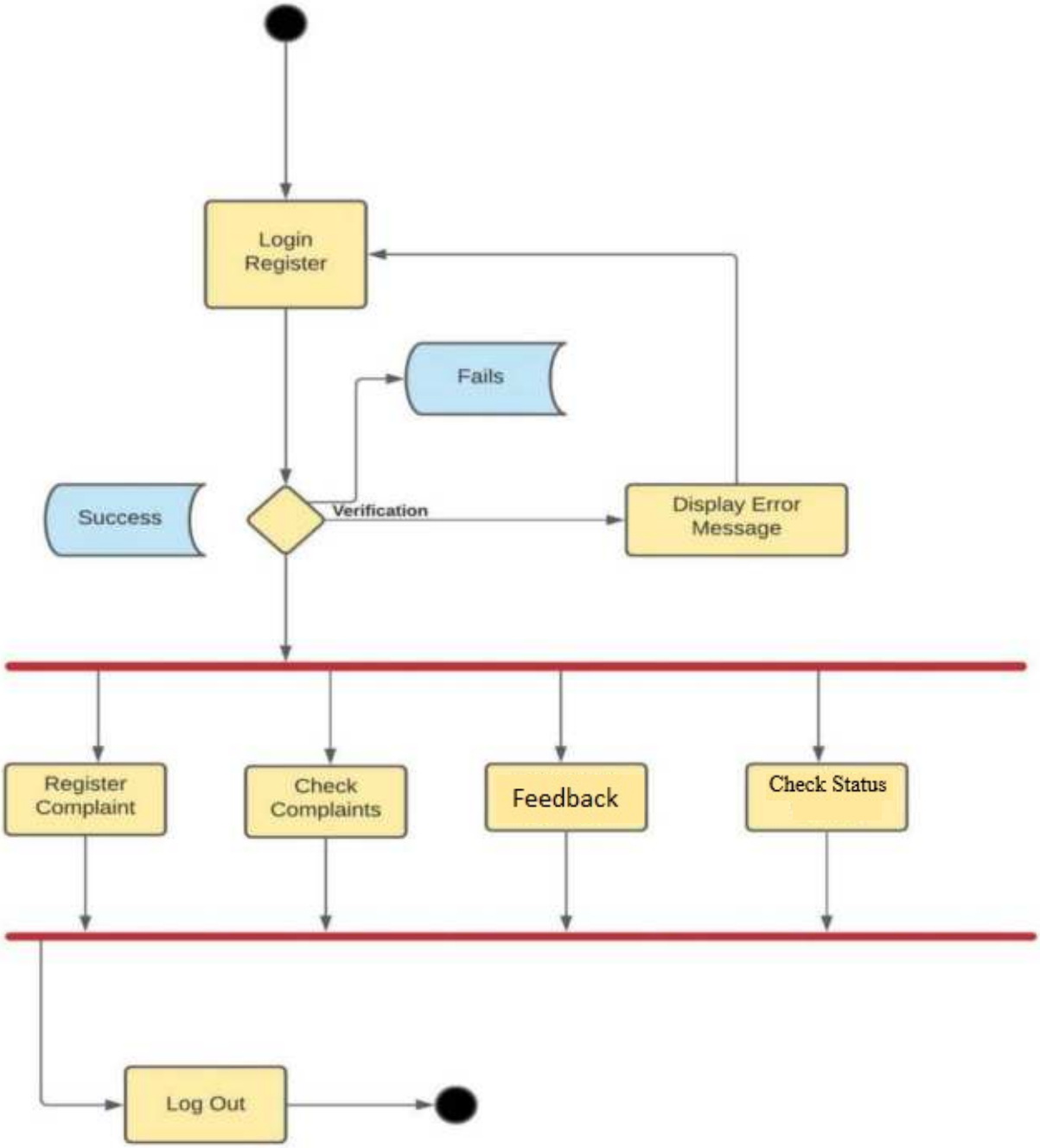

Figure 5.1.2.2: Activity Diagram

5.1.2.3 Sequence diagram.

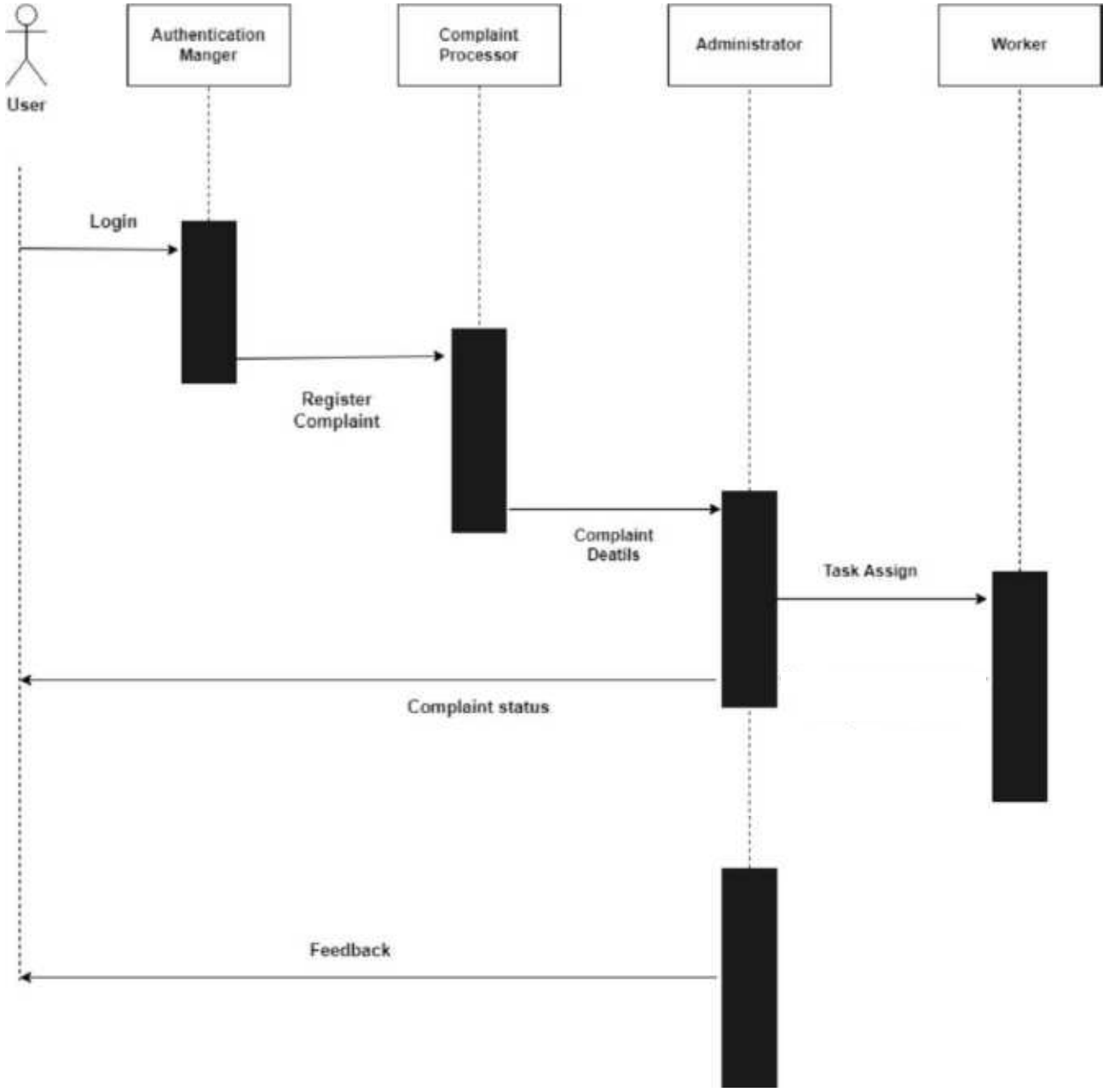

Figure 5.1.2.3: Sequence Diagram

5.2 Schedule

Sr.No.	Details of Activity	Week on	Name of responsible team member
1.	Literature Survey	Week 1-2	Parshwa Bhandari. Anuja Pawar.
2.	Problem Definition	Week 3	Vaishnavi Zanjage. Siddhesh Kamble.
3.	Defining Scope and Methodology	Week 4-5	Parshwa Bhandari. Siddhesh Kamble.
4.	Gathering information about Standalone system	Week 6	Anuja Pawar. Vaishnavi Zanjage.
5.	Information collection and developing SRS	Week 7-8	Parshwa Bhandari. Vaishnavi Zanjage.
6.	Analysis of resources Required	Week 9	Anuja Pawar. Siddhesh Kamble.
7.	Defining Procedure	Week 10	Vaishnavi Zanjage. Siddhesh Kamble.
8.	Gathering resources required	Week 11-12	Parshwa Bhandari. Anuja Pawar.
9.	Drawing diagram: 1.System architecture 2.DFD 3.UML diagram 4 Activity diagram 1. Sequence diagram	Week 13-16	Parshwa Bhandari. Anuja Pawar. Vaishnavi Zanjage. Siddhesh Kamble.

10.	Implementation of System 1. Create Admin module. 2. Create User module.	Week 17-24	Parshwa Bhandari. Anuja Pawar. Vaishnavi Zanjage. Siddhesh Kamble.
11.	Testing	Week 24-27	Parshwa Bhandari. Anuja Pawar. Vaishnavi Zanjage. Siddhesh Kamble.
12.	Testing system at integration	Week 27-29	Parshwa Bhandari. Anuja Pawar. Vaishnavi Zanjage. Siddhesh Kamble.
13.	Demonstration and Report preparation	Week 30-32	Parshwa Bhandari. Anuja Pawar. Vaishnavi Zanjage. Siddhesh Kamble.

CHAPTER 6: RESULTS AND APPLICATIONS

6.1 Implementation and Design

6.1.1.Login Page User and Admin.

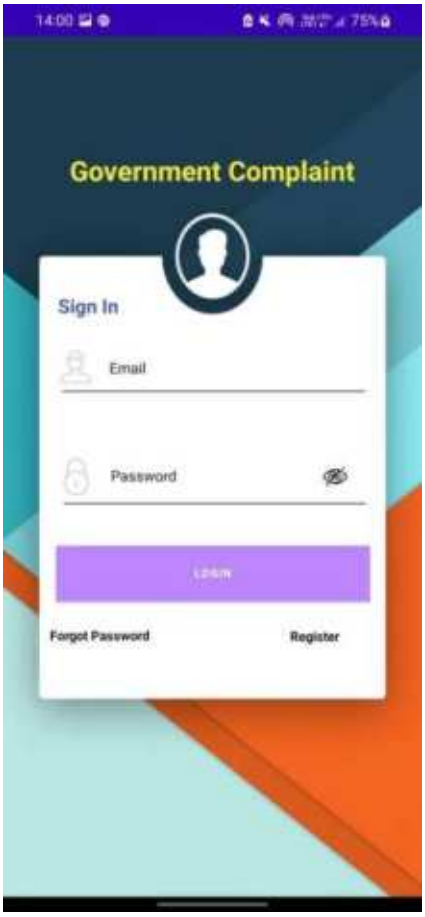

Fig 6.1.1: Login Page User/Admin

6.1.2. New User Registration:

In this interface, we can create a new User account by filling user details like user name, email-id, mobile number and password.

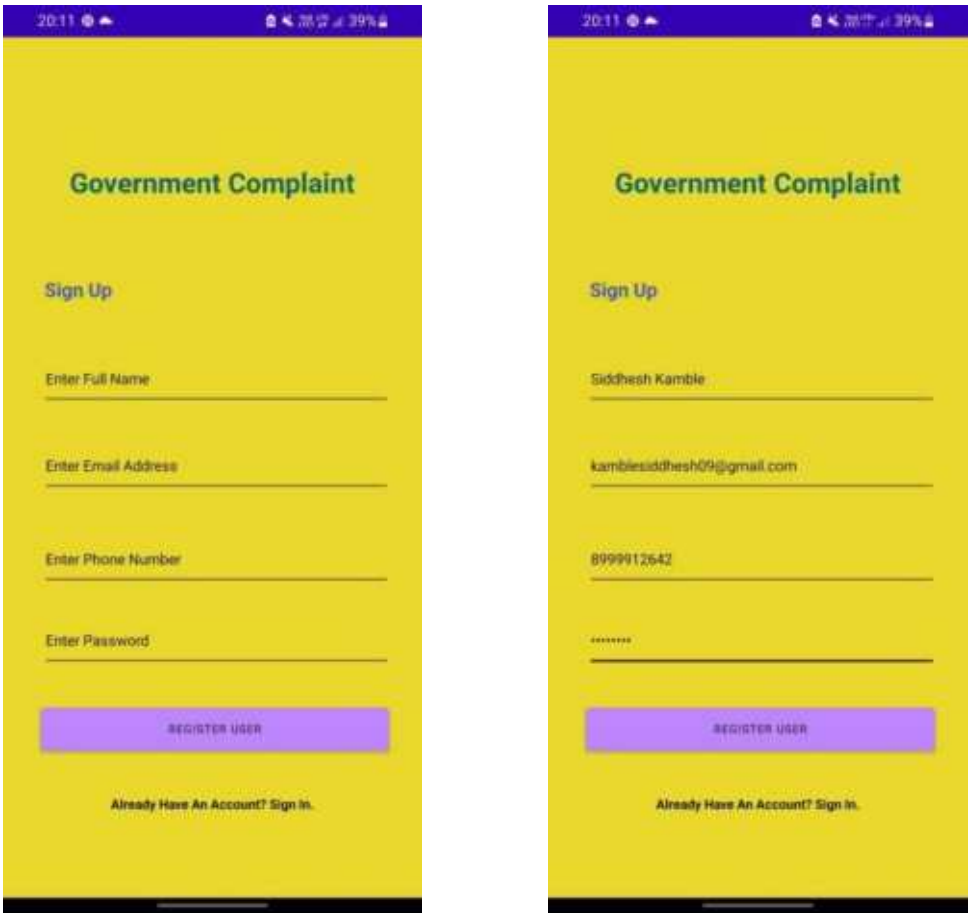

Fig 6.1.2. New User Registration.

6.1.3. User Login.

In user login module, user will enter the login details. and login to their account.

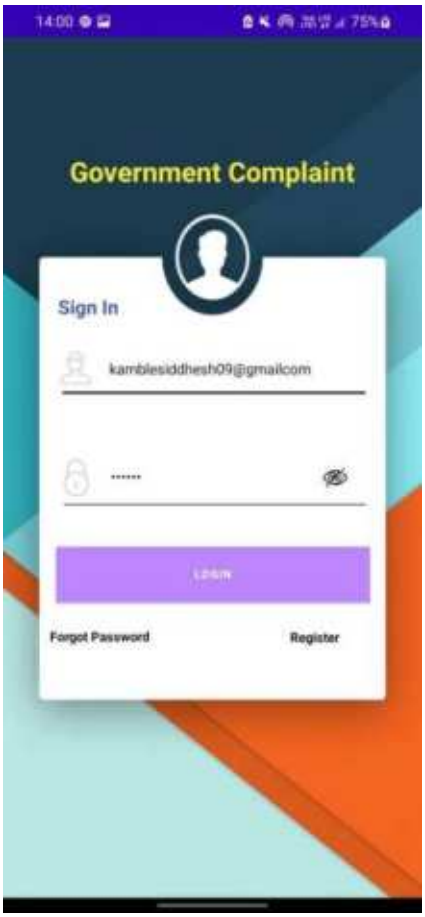

Fig 6.1.3. User Login

6.1.4 User Interface.

This is the interface where the user can complaint his register and can also check the status of his work.

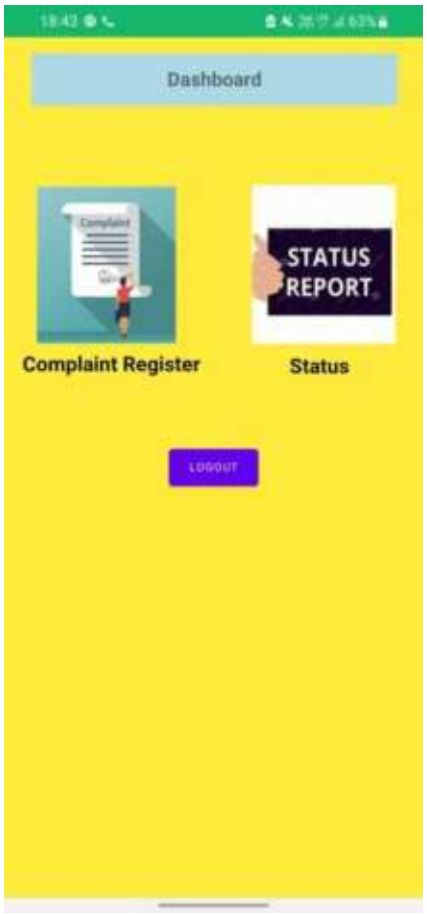

Fig.6.1.4 User Interface

6.1.5 Complaint Registration:

In this interface, the user registers for the complaint with his name, mobile number, address, department and description of the complaint.

Fig.6.1.5 Complaint Registration

6.1.6 Check Status:

In this interface, status of each user is displayed along with the worker assigned to do that particular work

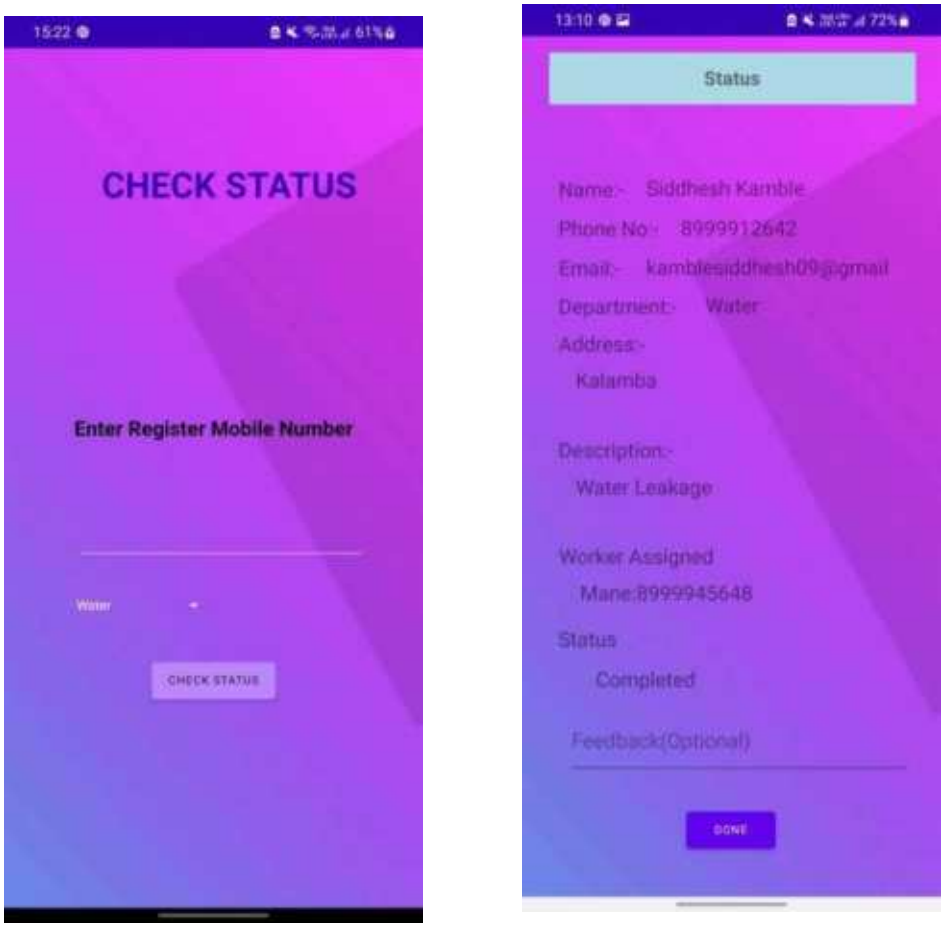

Fig 6.1.6 Check Status

6.1.7 Admin Login:

This is the admin login interface, where only admin can register and login to the app.

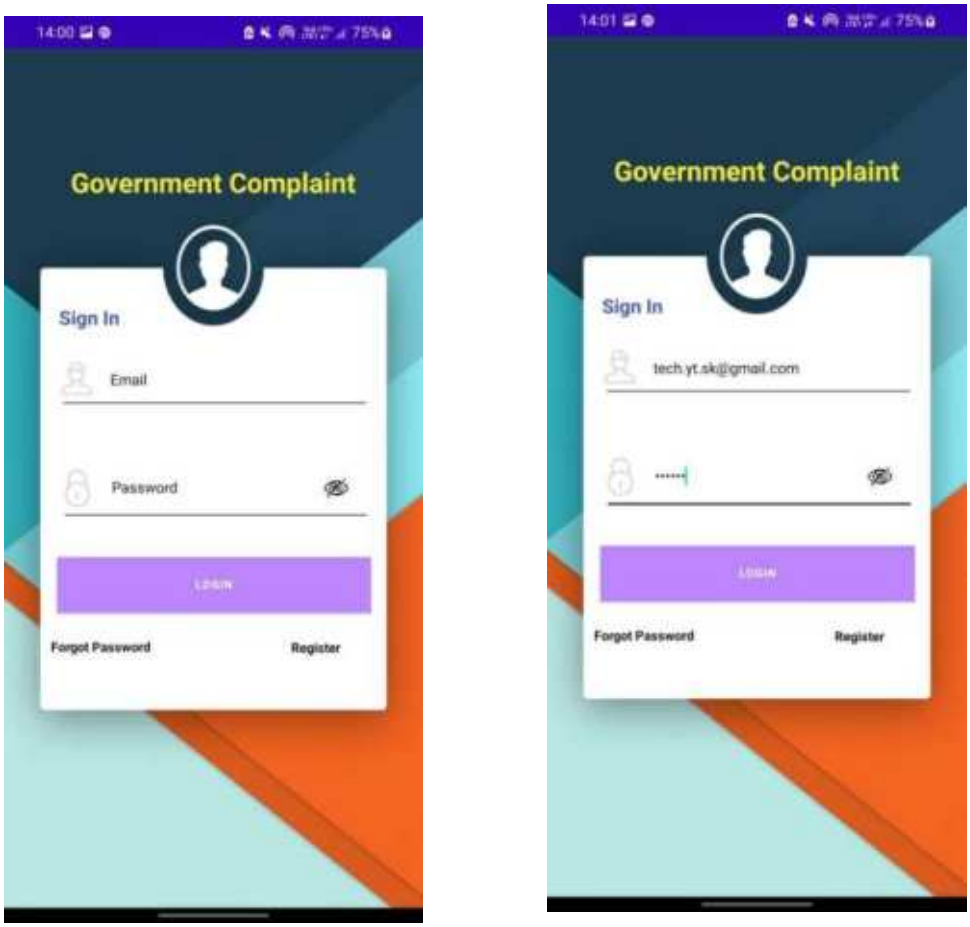

Fig 6.1.7 Admin Login.

6.1.8. Admin interface:

In the above admin interface, admin is able the 4 modules such as feedback, user complaints, employee details and last, logout

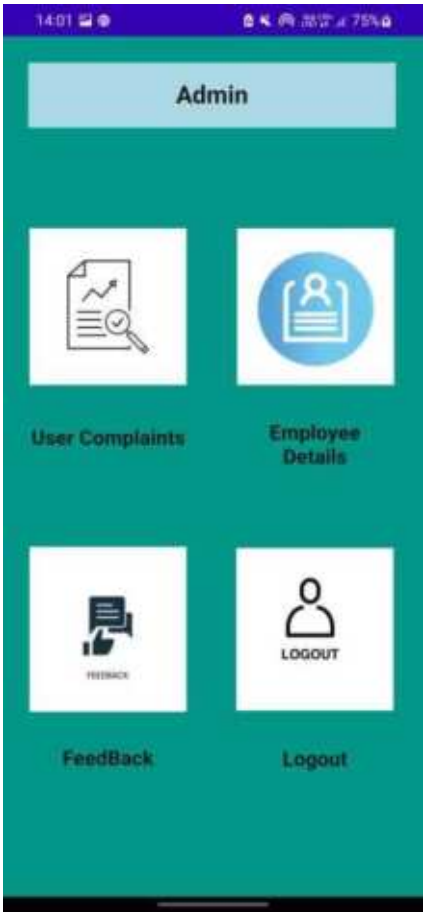

Fig 6.1.8. Admin interface.

6.1.9 Complaint view:

In the above module, department wise complaint details of the user, are viewed by the admin

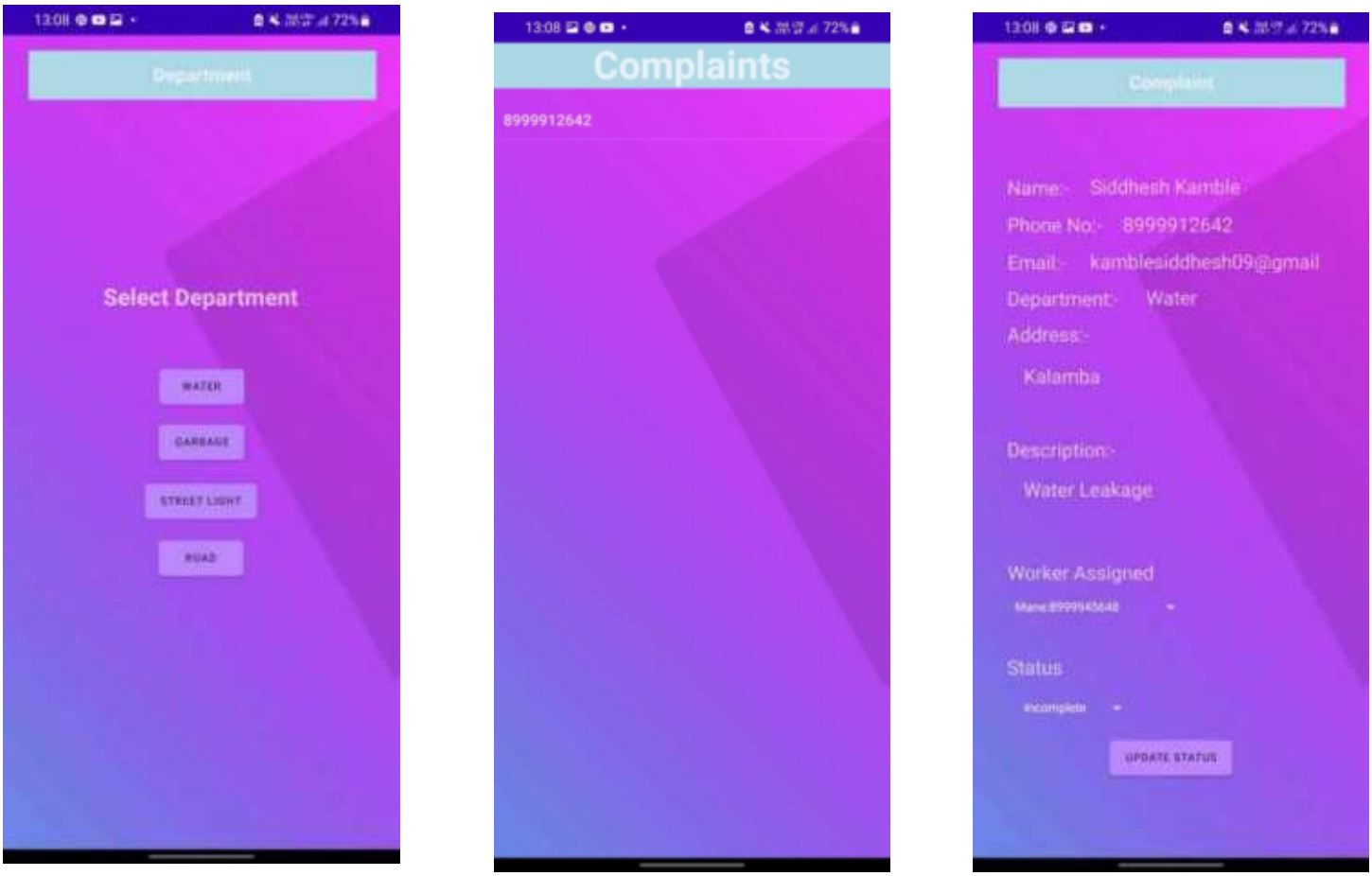

Fig 6.1.9 Complaint View

6.1.10 Employee.

In the above employee module, the admin enrols the employee with his phone number for registering the complaint.

Fig 6.1.10 Employee.

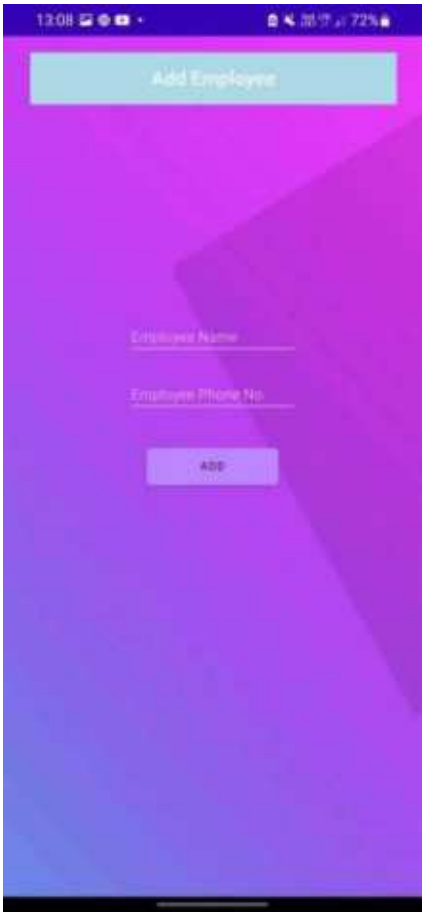

Fig 6.1.10.1 Add Employee.

6.1.11 Feedback:

This is the feedback module which is optional field for the user, where he can give the feedback about the work.

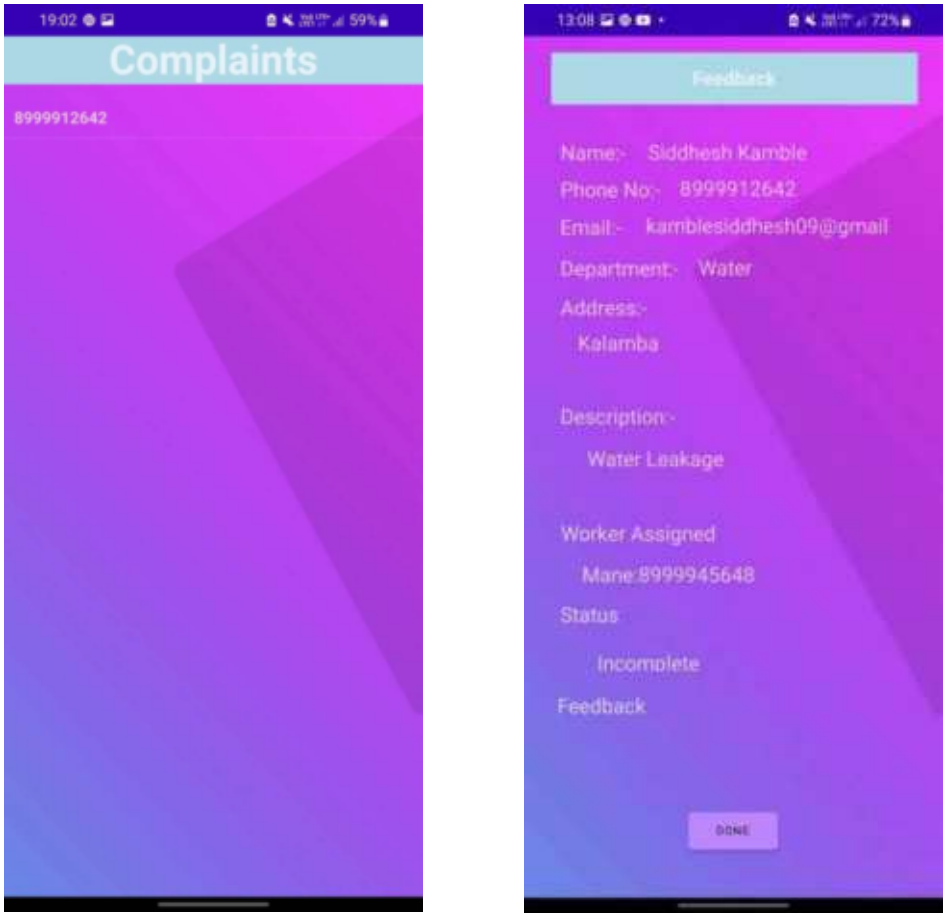

Fig 6.1.11.Feedback

6.2Testing

What is testing?

Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. It is an investigation conducted to provide stakeholders with information about the quality of the software product or service under test.

Testing verifies that the system meets the different requirements including, functional, performance, reliability, security, usability and so on. This verification is done to ensure that we are building the system right In addition, testing validates that the system being developed is what the user needs.

Unit Testing:

Unit testing is a software testing method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures, are tested to determine whether they are fit for use. Unit tests are typically automated tests written and run by software developers to ensure that a section of an application (known as the "unit") meets its design and behaves as intended.

1) Integration Testing

Integration Testing is defined as a type of testing where software modules are integrated logically and tested as a group. A typical software project consists of multiple software modules, coded by different programmers. The purpose of this level of testing is to expose defects in the interaction between these software modules when they are integrated. There are fundamentally 2 approaches for doing Integration testing:

1) Bottom up approach
2) Top down approach.

2) Black box testing

Black box testing is a technique of software testing which examines the functionality of software without peering into its internal structure or coding. The primary source of black box testing is a specification of requirements that is stated by the customer.

Types of black box testing:

1) Functional testing
2) Non-functional testing
3) Regression testing

3) White box Testing

White box testing techniques analyse the internal structures the used data structures, internal design, code structure and the working of the software rather than just the functionality as in black box testing. It is also called glass box testing or clear box testing or structural testing

4) System Testing

System Testing is a type of software testing that is performed on a complete integrated system to evaluate the compliance of the system with the corresponding requirements. In system testing, integration testing passed components are taken as input.

6.2 Test cases:

A. User Login:

Test case ID	Objective	Prerequisite	Steps	Input Data	Expected Result	Actual Result	Status
TC_1	To check the validity of email field.	Email field should be available and not passive.	1.Enter valid email id.	Text, symbols and integers. (abc123@)	1.It should accept valid email id.	1.Email id is accepted.	Pass
TC_2	To check the validity of password Field.	Password field should be available and not passive.	1.Click on the password field. 2.Enter password.	Number, character, special symbols,.(eg. Abcd12_3)	1.Password should be of minimum 8 characters and should accept mix datatype such as digits, characters, special symbols, etc.	1.It accepts password as per the mentioned criteria.	Pass
TC_3	To check the validity of forget password link.	Forget password link should be present.	-	-	1. The forget password link should get activated when the user clicks on the same when he/she forget the password. 2. Then the current page should be directed to the forget password page.	It redirects to the forget password page.	Pass

TC_4	To check the validity of the register link.	Register link should be available and active.	-	-	1. It should get active when the user wants to create a new account by clicking on that link. 2. Then the current page should be redirected to the registration page.	It redirects to the Registration page.	Pass
TC_5	To check the validity of the login button.	Login button should be present and active.	Click on login button.	-	1.It should not get submitted until all the fields are filled and are correct.	It gets submitted when all fields are filled and correct.	Pass.

B. Registration:

Test case ID	Objective	Prerequisite	Steps	Input Data	Expected Result	Actual Result	Status
TC_1	To check the validity of name field.	Name field should be available and not passive.	1. Enter full name in characters.	Text.	1.It should accept full name.	1.Name is accepted.	Pass
TC_2	To check the validity of phone number field.	Phone number field should be available and not passive.	1.Click on the phone number field. 2.Enter valid phone number.	Number as integer (9823646335).	1.It should accept valid and 10 digits phone number only. 2. It should generate an OTP after the phone number is been registered.	1.It accepts valid and 10 digits phone number only. 2. And it generates an OTP.	Pass
TC_3	To check the validity of email id field.	Email id field should be present and active.	Enter valid email id.	Text, symbols and integers. (abc123@)	Email id field should take valid email id.	It takes valid email id.	Pass
TC_4	To check the validity of department field.	Department of the respective complaint field should be present and active.	Select any one department from the given drop-down list.	-	Specific Department from the drop-down list should be selected.	The department gets accepted.	Pass
TC_5	To check the validity of address and complaint description field.	1. Address field and complaint field should be present.	1. Enter valid address. 2.Describe your complaint	Text	1. It should accept the entered address and complaint.	Address and complaint is accepted.	Pass

C. Complaint Registration:

Test case ID	Objective	Prerequisite	Steps	Input Data	Expected Result	Actual Result	Status
TC_1	To check the validity of the name field.	Name field should be available and active.	Enter the full name of the user.	Text	It should accept the valid name which is been registered.	It accepts the valid registered name.	Pass
TC_2	To check the validity of the email id field.	Email id field should be present and active.	Enter the registered email id.	Text, symbols and integers. (abc123@)	It should accept only registered email id.	1.It accepts email id.	Pass
TC_3	To check the validity of the phone number field.	Phone number field should be available and active.	1.Enter the registered phone number.	Number as integer (9823646335).	1.It should accept registered phone number only.	1.It accepts phone number.	Pass
TC_4	To check the validity of the password field.	Password field should be present and active.	Enter the registered password.	Number, character, special symbols,.(eg. Abcd12_3)	It should accept registered password.	Password gets accepted.	Pass
TC_5	To check the validity of the register user button.	Register user button should be available and active.	Click on the button.	-	It should get accepted only if the data filled in all the fields is correct.	It accepts when all the fields are filled correctly.	Pass

TC_6	To check the validity of already have an account link.	The mentioned link should be present.	-	-	It should get activated when user already has a account with this app and should redirect to the sign up page.	It gets activated when user has its existing account and redirects to the sign up page.	Pass

D. Complaint details:

Test case id	objective	prerequisite	steps	Input data	Expected result	Actual result	Status
TC_1	To check whether the admin can fetch the details of the user via water department	Water Department field should be available and not passive.	Click on the water department.	-	1. By selecting the water department, the details of the user should be displayed who.	Details of the user who have complained for water issues are displayed.	Pass
TC_2	To check whether the admin can fetch the details of the user via garbage department	Garbage Department field should be available and not passive.	Click on the garbage department.	-	1. By selecting the garbage department, the details of the user should be displayed who.	Details of the user who have complained for garbage issues are displayed.	Pass
TC_3	To check whether the admin can fetch the details of the user via light department	Light Department field should be available and not passive.	Click on the light department.	-	1. By selecting the light department, the details of the user should be displayed who.	Details of the user who have complained for light issues are displayed.	Pass
TC_4	To check whether the admin can fetch the details of the user via road department	Road Department field should be available and not passive.	Click on the road department.	-	1. By selecting the road department, the details of the user should be displayed who.	Details of the user who have complained for road issues are displayed.	Pass

E. Update status:

Test case id	objective	prerequisite	steps	Input data	Expected result	Actual result	Status
TC_1	To check whether the complaint status is updated by the admin about whether the work is completed, incomplete and the worker assigned to complete the work.	Status block should be active and not passive.	Click on the status block.	-	Status should be changed and submitted.	Status is changed and submitted.	Pass

F. Admin:

Test case id	objective	prerequisite	steps	Input data	Expected result	Actual result	Status
TC_1	To check the validity of the admin page.	Admin credentials should be available and not passive.	1. Enter email id and password. 2. Then click on the login button.	Enter the email I'd and passwor d.	Admin should redirect to the admin page after clicking on the admin credentials.	Admin is redirected to the admin page.	Pass

6.3 Applications

1. This system use government office.

2. The system can easily register the complaint.

3. Complaints can be categorized so that it is possible for user to easily register complaints.

4. It updates the current status of complaints, so that it will easy for user to track the complaints.

CHAPTER 7: FUTURE SCOPE AND CONCLUSION

7.1 Future Scope :

User can able to upload photos along with the complaints to give more information about the complaint and also after completion of the work, the photos can be attached with the status.

7.2 Conclusion

So, during this project I learned all the above things, before this project, I had no idea about Android studio and Firebase for making an application. But now I learned a lot about Android studio and Firebase for developing application. The project “Complaint management System” has been successfully completed and tested with troubleshooting to the best of our knowledge.

Each block present in it has been reasoned and justified. The project is very cost efficient and also reduced the time of the user. We believe that our project can become government. Finally, we conclude that this project being based on the android studio, firebase technology has further scope for future development and research and can be modified according to its application.

CHAPTER 8: REFERENCES AND BIBLIOGRAPHY

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