# Kalyani Government Engineering College

**Affiliated to**

**Maulana Abul Kalam Azad University of Technology**

***Department of Computer Application***

***Kalyani - 741235, Nadia, WB***

## Project report on

# [MAINTENANCE OF COMPLAINT REDRESSAL SYSTEM]

**Submitted by**

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**(**Roll No-10201016008)

## Under the guidance of

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নদীয়া, পশ্চিমবঙ্গ

Kalyani 741 235
Nadia, West Bengal,India
পত্রাঙ্ক /Ref. No.:
তারিখ / Date :

কল্যাণী গভঃ ইঞ্জিনিয়ারিং কলেজ
Kalyani Government Engineering College
( Govt. of West Bengal )

# ***Certificate of Approval***

This is to certify that the project report on “ DESIGN A MOBILE APPLICATION FOR KANCHRAPARA RAILWAY WORLSHOP (MAINTANANCE OF COMPLAINT REDRESSAL SYSTEM)” is a record off project work under the curriculum of Maulana Abul Kalam Azad University of Technology(MAKAUT) for the MCA 3rd year, 6thsemister Examination, 2019, for the subject “**MAJOR PROJECT & SEMINAR (MCA 691**)” carried out by “SUCHANA MITRA- 10201016008 , the students of Kalyani Govt. Engineering College, under the guidance of “Dr. IndrajitBhattcharya” Head Of The Department, Computer Application,KalyaniGovernmennt Engineering College, as a requirement for the partial fulfillment of the Degree of Master of Computer Application.

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DEPARTMENT
SEAL

# **Acknowledgement**

The satisfaction that accompanies the successful completion of any task would be incomplete without the mention of people whose ceaseless cooperation made it possible, whose constant guidance and encouragement crowned all my efforts with success.

I am grateful to my project guide Dr. Indrajit Bhattacharya for his guidance, inspiration and constructive suggestions that helped me in the successful completion of this project.

Place: Kalyani

Date:

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# Contents

# 1 Introduction

In Railway quarter Solving of Electric Complain is a very hassled process. Quarter Holders have to submit application in various offices and most of the time they are not solved by the negligence of the technician. These make the quarter holders disappoint and their productivity towards work also decreases. To solve this issue The Kanchrapara Railway Workshop has decided to make a mobile application to make this system simplified and authentic. Now an Admin is going to look into the whole matter so that the technician can never show negligence. This make the quarter holder satisfied and increases their productivity toward work.

# 2 Overview And Specification

## 2.1 Project Description

The system will follow a process in which the Quarter holder or the complainer will raise electrical complain through mobile application after registering as a user using his/her pf number and also providing other required details. After receiving the complaint, the system will send the complaint id and a Docket Number(otp) in the registered mobile number of the user. And after the complaint being solved user can rate and review the complaint.

The system will also forward the complaint details to the concerned substation in charge's account with complaint_id. The substation in charge then schedule the complaint on a particular date and time along with the technician's details who is going to attend the complaint.

After attending the complaint, the substation in charge should enter the data in the system like status of the complaint with secure code provided by the complainer to verify the complaint attended or not.

Admin can add any employee as moderator (substation in charge). He can monitor the whole system, add new location, new colony, new quarter. Also, can add new category or sub category.

Admin can delete any user or moderator or any other details if needed.

## 2.2 Purpose

To build a simplified system of registering complain and solve the particular complain. The existing method is very complicated and most of the time the expected outcome does not occur. So, the purpose of the project is to build a hassled free simplified and an authentic system

## 2.3 Scope

The project provides a common platform for admin, user and moderator. The user can register their complaint and check the status of the complaint continuously. If he/she feels like it is taking too long to solve the complaint he can report directly to admin. Also, he can rate and review the work of the technician. The moderator can update the status of the complaint like "**scheduled**", "**ongoing**", "**solved**" etc. Admin can monitor the whole system.

## 2.4 Overview

The purpose this documentation is to present a detailed description of Quarter **Maintenance of Complaint Redressal System (MCRS).** It will explain the purpose and features of the application, the interfaces of the application, what the application will do, the constraints under which it must operate and how the application will react to external stimuli. This document is intended for both the end users and the developers of the application.

# 3 General Description

## 3.1 Product Perspective

This application, is an independent product and does not depend on any other product or system. The product will automate various tasks associated with handling the Electric Complain from quarter holder and solve then in a proper manner.

## 3.2 Product Functions

Our system has three types of accessing modes,

### 3.2.1 Administrator:

The admin can add Location, Colony, Quarter Type, Quarter, Moderator, Category, Sub Category.

He Can delete details if necessary.

He can assign Colony to moderator.

He can monitor the whole system.

### 3.2.2 User

Users are the main or primary user of this application. The registration process for user will store their details and it is verified by the admin. Until the verification process is done user cannot login to the system or register complaint.

They can choose category and subcategory of the complaint and register it with proper description and image.

They can check the status of the complaint any time

User can also send any feedback to admin.

They can review or rate the complaint once it is solved.

They can edit the profile or change password through the app.

### 3.2.3 Moderator:

Moderator is also a primary user or actor of this application.

Moderator can view the new complain and schedule them.

The moderator can update the status of the complaint like “**scheduled**”, “**ongoing**”, “**solved**”.

Once a complaint is scheduled, they can reschedule it if needed.

## 3.3 Assumptions and Dependencies

- In case of using this mobile application, the user should have a smartphone running Android Jellybean or above.
- The phone must have internet connections.

# 4 Specific Requirements

## 4.1 External Interface Requirements

### 4.1.1 User Interfaces

 GUI along with meaningful design.

### 4.1.2 Hardware Interfaces

| | |
|---|---|
| Mobile Application | Android Jellybean (4.1) or above |

### 4.1.3 Software Interfaces

| | |
|---|---|
| Front End | XML, JAVA, HTML, CSS, BOOTSTRAP |
| Back End | Core PHP (for API purpose), MySQL |

## 4.2 Functional Requirements

Development of a Mobile Application for **Maintenance of Complaint Redressal System (MCRS)** involves the following functions:

**4.2.1 Registration:**

- The registration process for the user. They have to register with all mandatory details. The registration process is completed along with the admin verification. Admin have to verify the user for registration.

#### 4.2.2 Login:

- All the verified users, moderator of the application can login with their unique_id/pf_number and password.

#### 4.2.3 Register Complain:

- Registered user can register their complain by choosing particular category or sub category followed by description and image of the complaint.

#### 4.2.4 Update Complain:

- Moderator can update the status of the complaint from *unsolved to scheduled*, *scheduled to ongoing* and *ongoing to solved*

## 4.3 Non-Functional Requirements

### 4.3.1 Performance

Easy tracking of complaint status can be done. All the requirements relating to performance characteristics of the system are specified in the section below. There are two types of requirements.

#### 4.3.1.1 Static Requirements

These requirements do not impose any constraints on the execution characteristics of the system. They are:

#### 4.3.1.2 Number of Terminals:

The application makes use of an underlying database that will reside at the server, while the front end will be available as a mobile application to the users.

#### 4.3.1.3 Number of Users:

The number of users may vary, as per the application.

#### 4.3.1.4 Dynamic Requirements

These specify constraints on the execution characteristics of the system. They typically include response time and throughout of the system. Since these factors are not applicable to the proposed application, it will suffice if the response time is high.

## 4.4 Reliability

The application will not be able to connect to the database in the event that the user’s internet connection fails or in the event of the server being down due to a hardware or software failure.

### 4.5 Availability

The application will be available to all the users.

### 4.6 Security

The security requirements deal with the primary security. The user’s application works as the admin approves for the authentication of the account. The authenticity of the solved problem is checked by a Docket no (Otp). The passwords are encrypted Using MD5 encryption. Images are encrypted using base64 encode-decode method.

### 4.7 Maintainability

Backups for database are available.

### 4.8 Portability

The Application is a mobile-based application and is built in Android & PHP and using MySQL database so it is platform dependent.

## 5 Design Constraints

This application provides security. The login option prevents the system from being misused by unauthorized users. Only an authorized operator will be granted rights to use all the features. This application is also reliable and fault tolerant. The application is developed a way that it can handle invalid inputs.

# 6 Flow Diagrams

Flow diagram is a collective term for a diagram representing a flow or set of dynamic relationships in a system. The term flow diagram is also used as a synonym for flowchart, and sometimes as a counterpart of the flowchart. Flow diagrams are used to structure and order a complex system, or to reveal the underlying structure of the elements and their interaction.

## 6.1 Data Flow Diagram (Level 0)

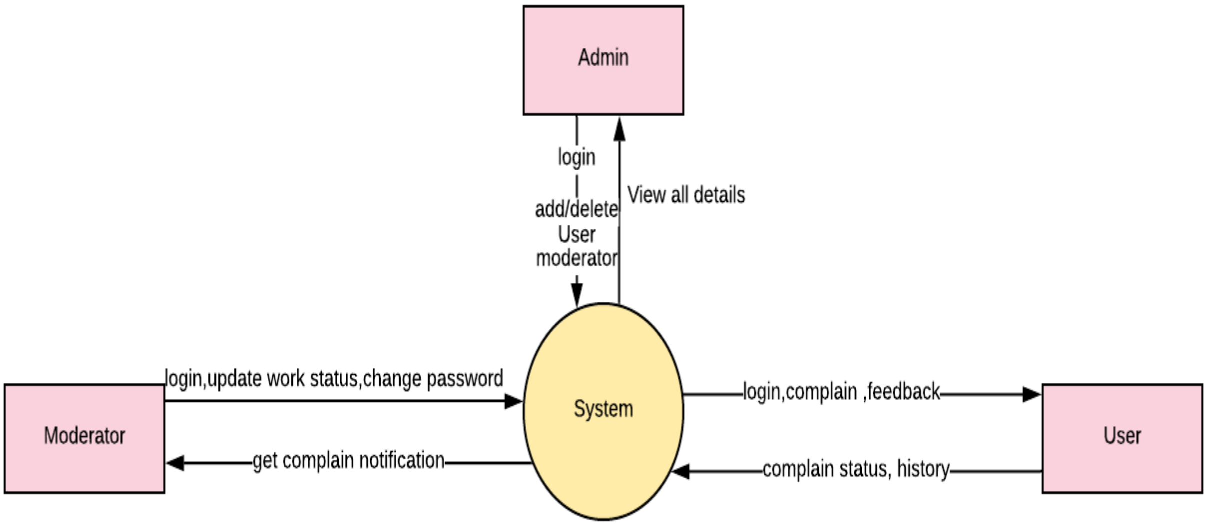


Figure 1

## 6.2 Data Flow Diagram (Level 1)

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its *process* aspects. A DFD is often used as a preliminary step to create an overview of the system without going into great detail, which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design). A DFD shows what kind of information will be input to and output from the system, how the data will advance through the system, and where the data will be stored.

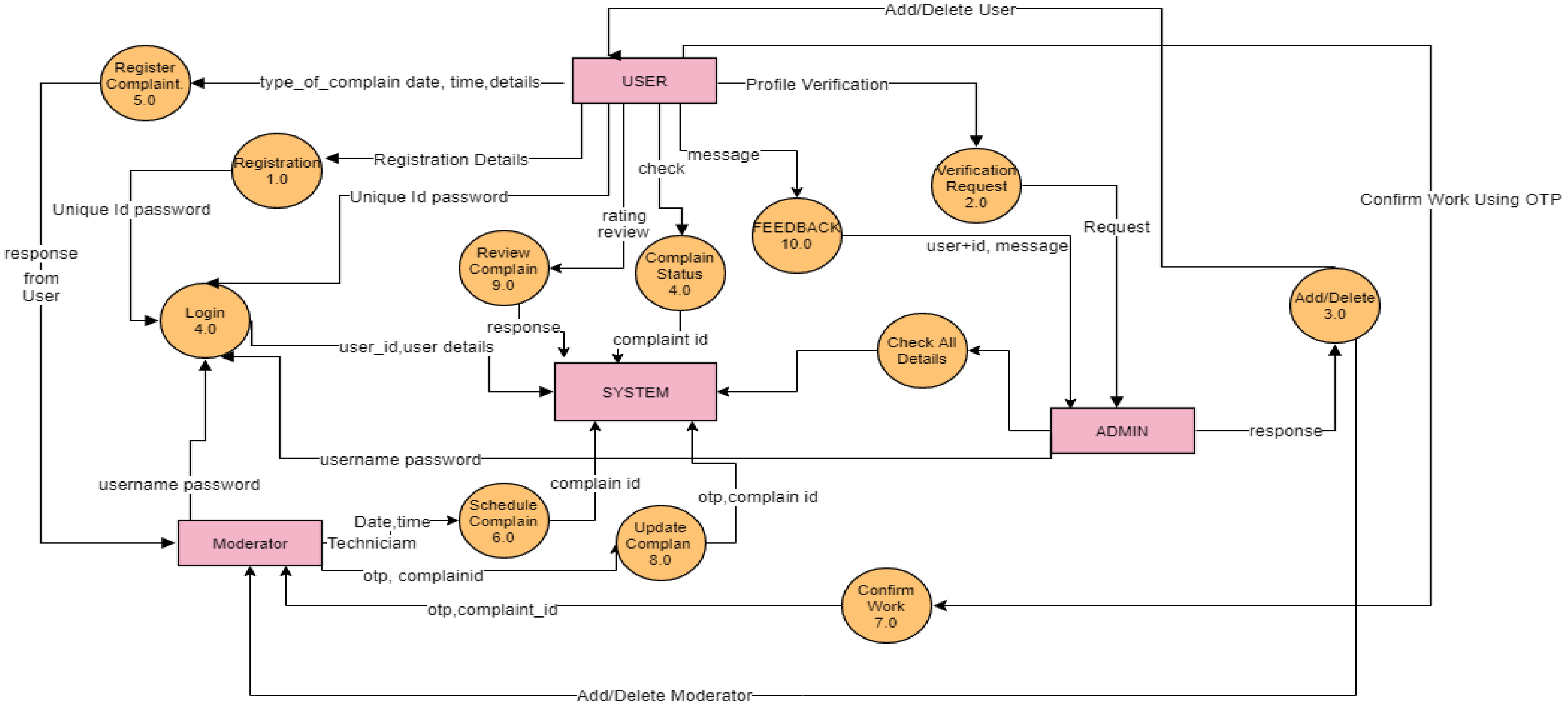


Figure 2

Above figure showing the flow of data in Development of

**Maintenance of Complaint Redressal System**

## 6.3 Class Diagram

Class diagrams are one of the most useful types of diagrams in UML as they clearly map out the structure of a particular system by modelling its classes, attributes, operations, and relationships between objects.

### 6.3.1 Class Diagram for User

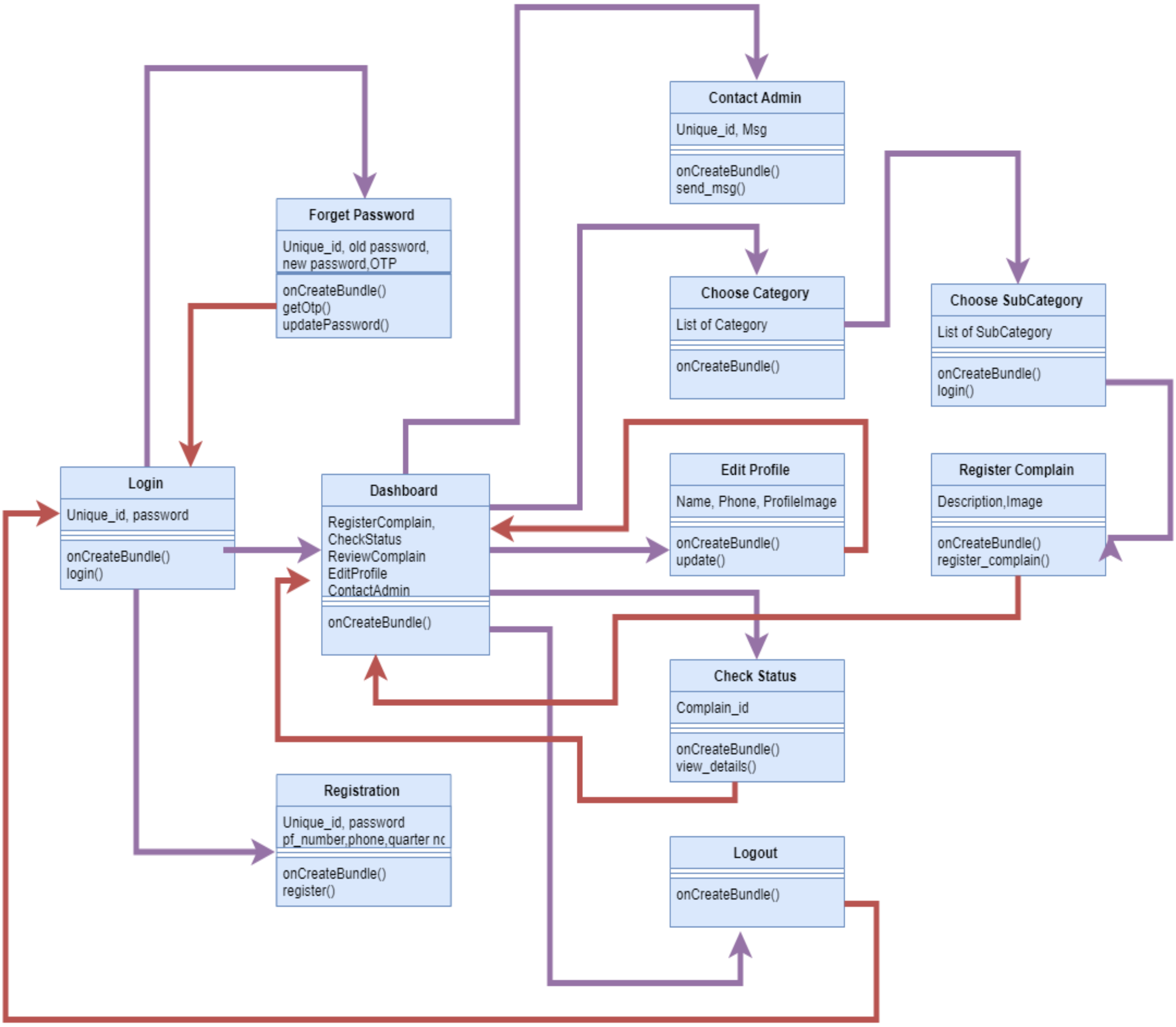


Figure 3

Figure 3. Showing the class diagram of User in **Maintenance of Complaint Redressal System**

### 6.3.2 Class Diagram for Moderator

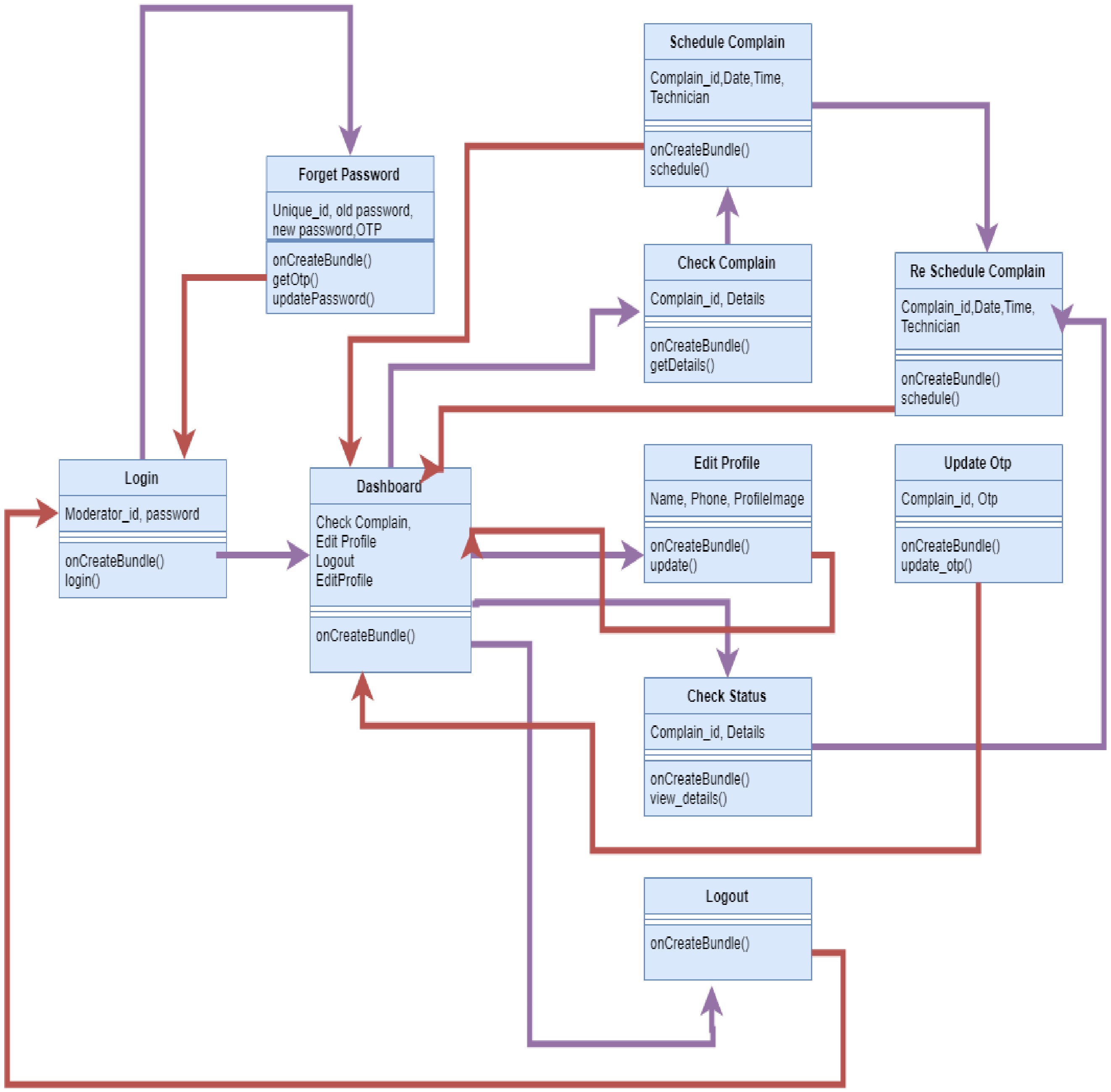


Figure 4

Figure 4. Showing the class diagram of Moderator in **Maintenance of Complaint Redressal System**

### 6.3.3 Class Diagram for Admin

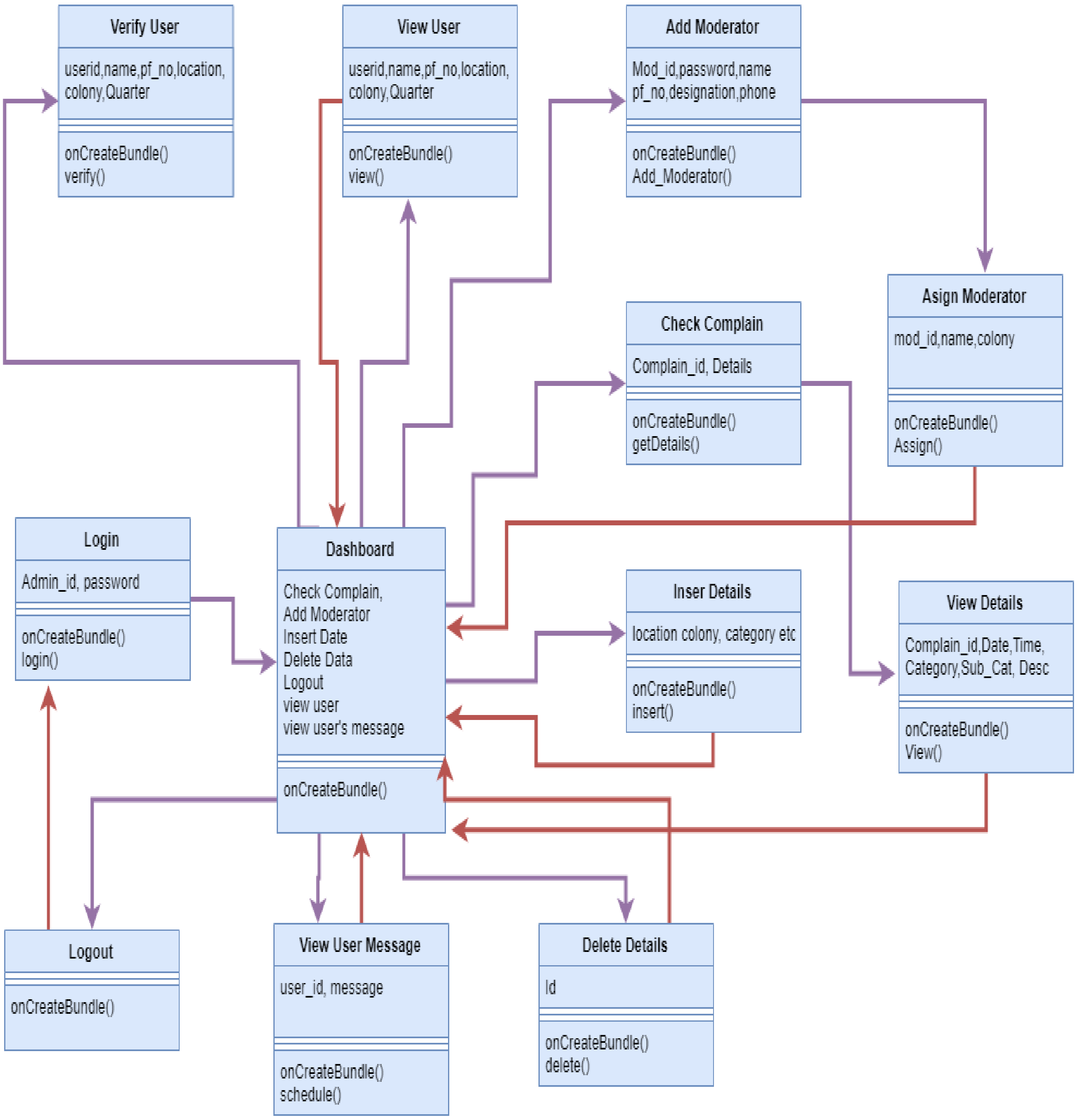


Figure 5

Figure 5. Showing the class diagram of Admin in **Maintenance of Complaint Redressal System**

## 6.4 Entity Relationship Diagram

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system. ER Diagrams are most often used to design or debug relational databases in the fields of software engineering, business information systems, education and research.

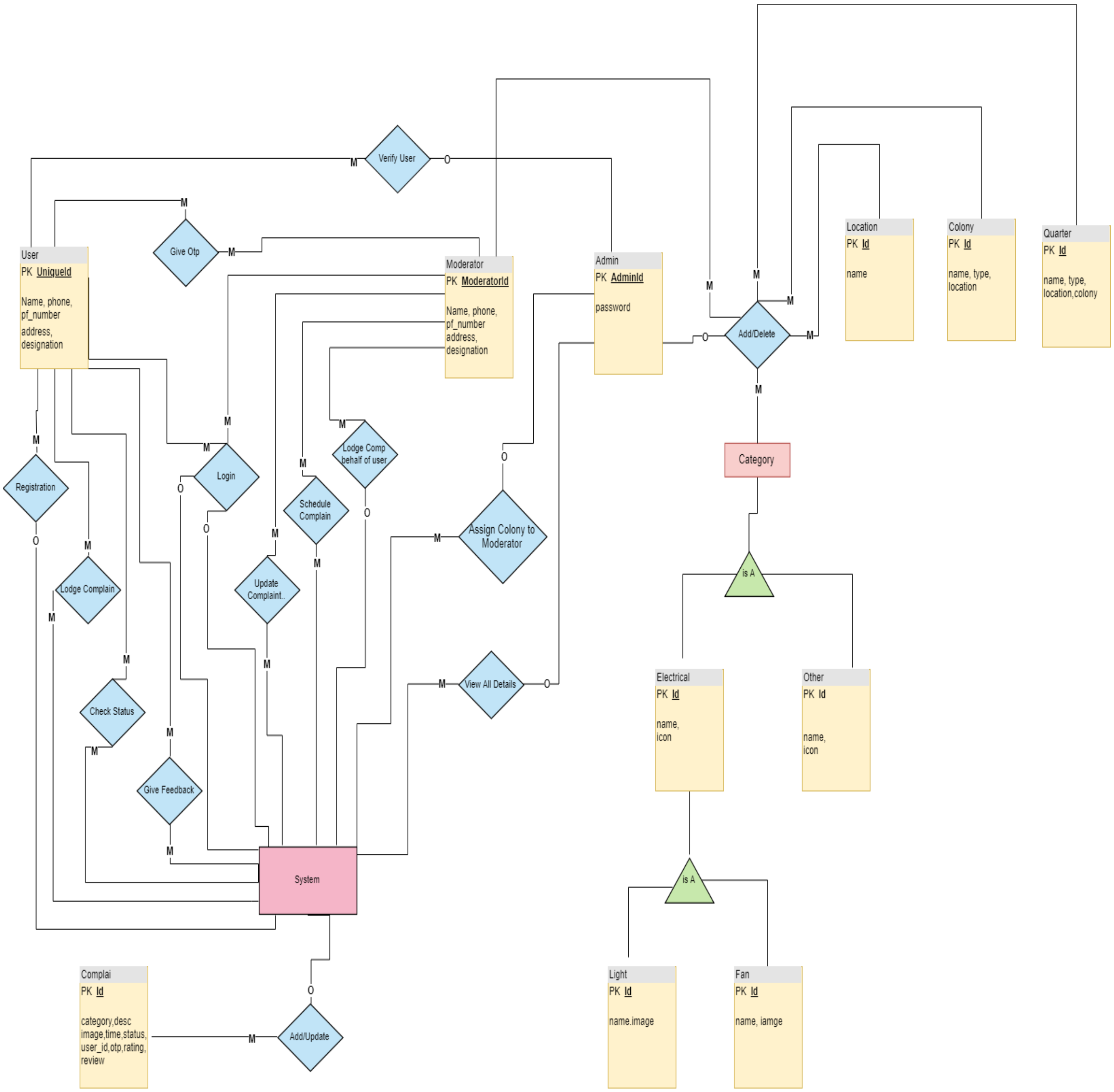


Figure 6

Figure 5. Showing the Entity Relationship Diagram of **Maintenance of Complaint Redressal System**

## 6.5 Use Case Diagram

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

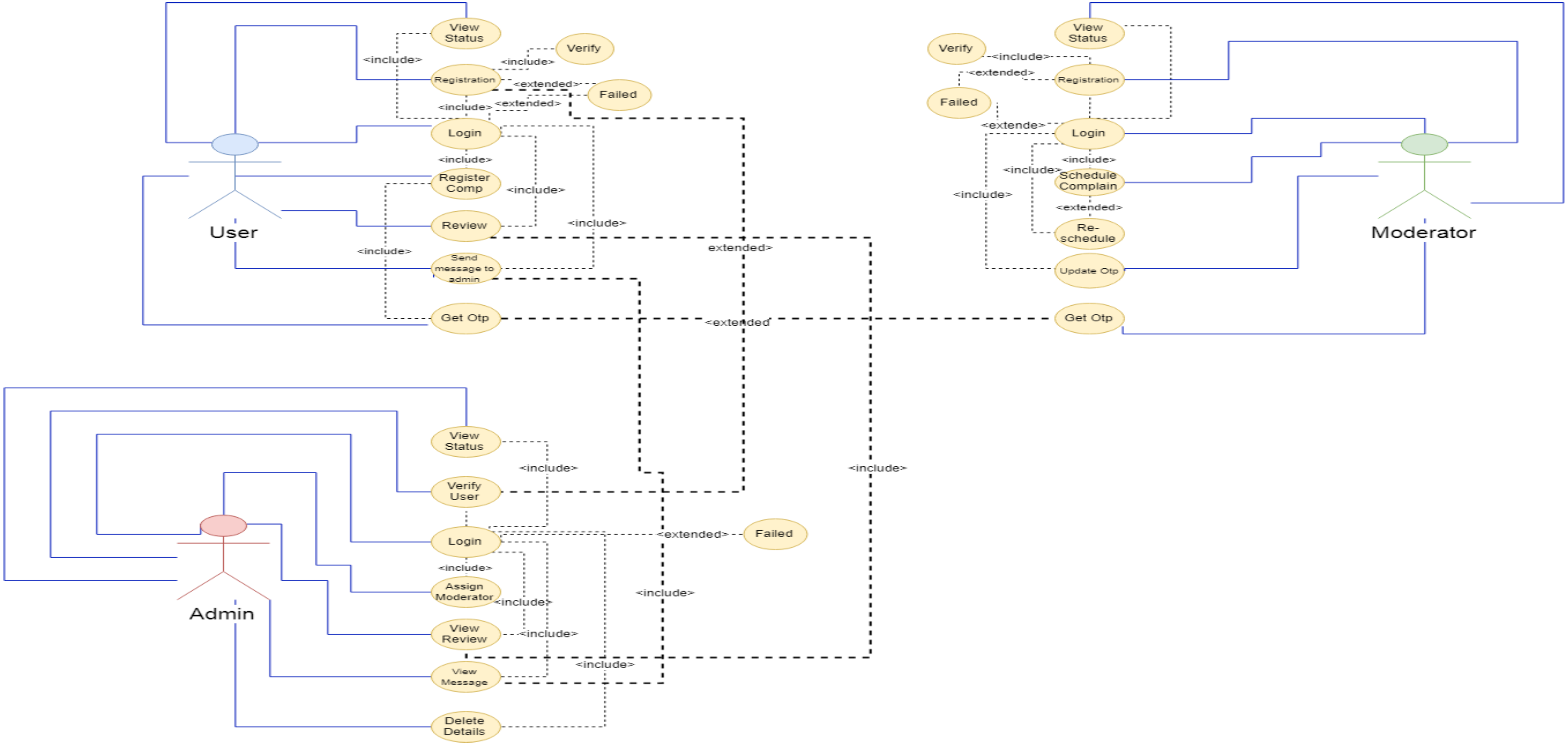


Figure 7. Showing the use case diagram of Maintenance **of Complaint Redressal System**

## 6.6 Sequence Diagram

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence diagrams are sometimes called event diagrams or event scenarios. A sequence diagram shows, as parallel vertical lines (*lifelines*), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

### 6.6.1 Sequence Diagram for User

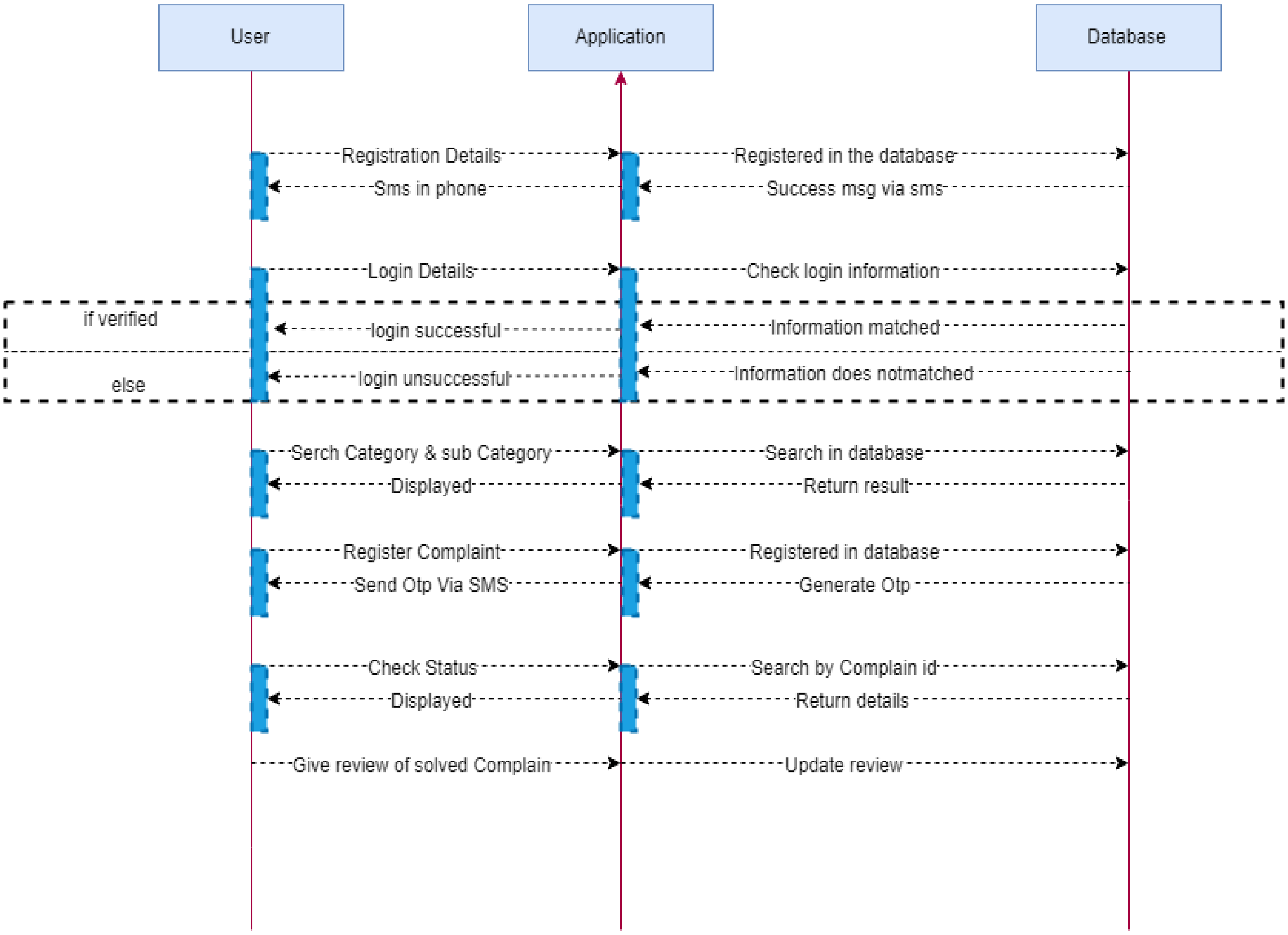


Figure 8

Figure 8. Showing the sequence diagram of User in **Maintenance of Complaint Redressal System**

### 6.6.2 Sequence Diagram for Moderator

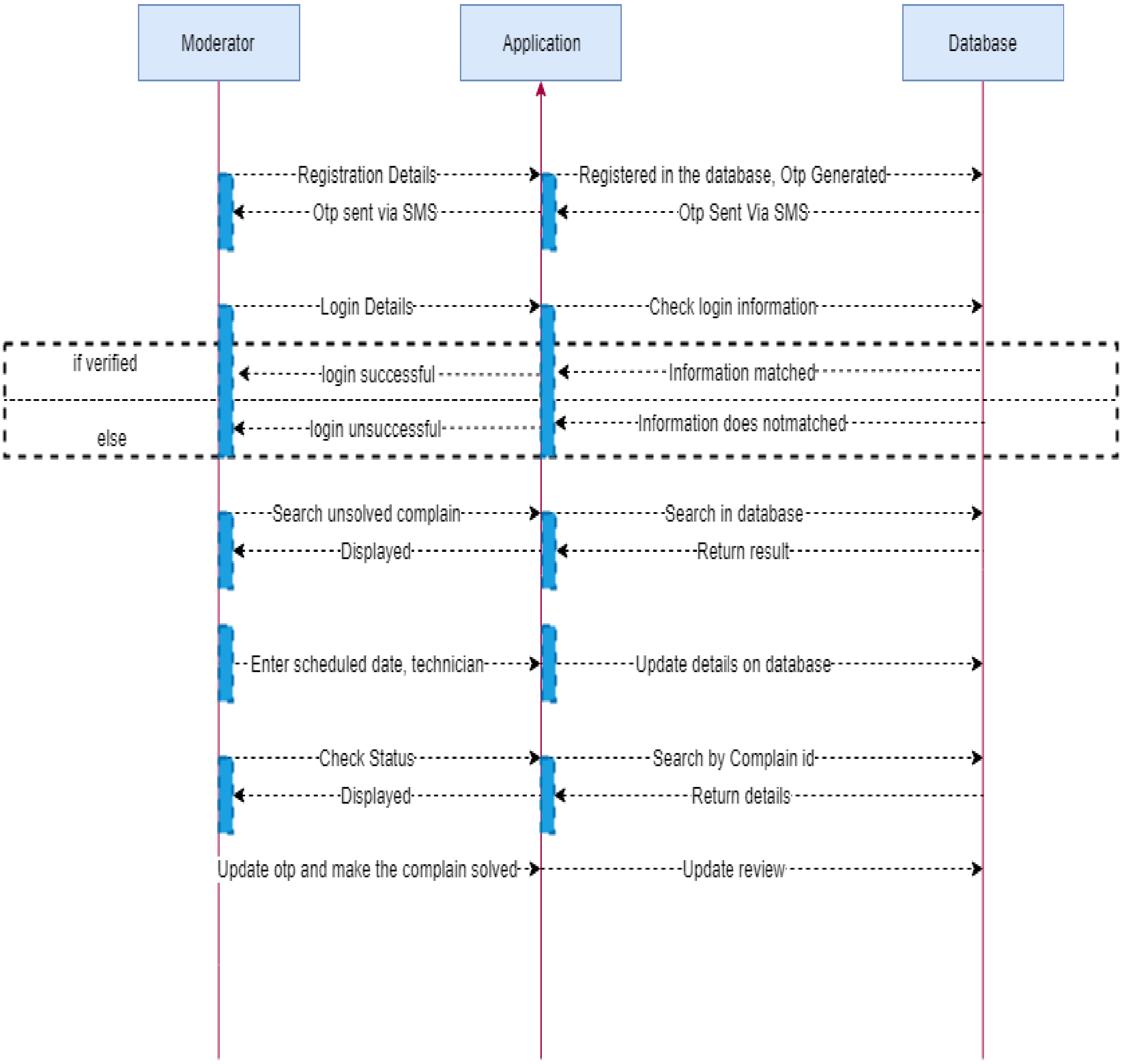


Figure 9

Figure 9. Showing the sequence diagram of Moderator in **Maintenance of Complaint Redressal System**

### 6.6.3 Sequence Diagram for Admin

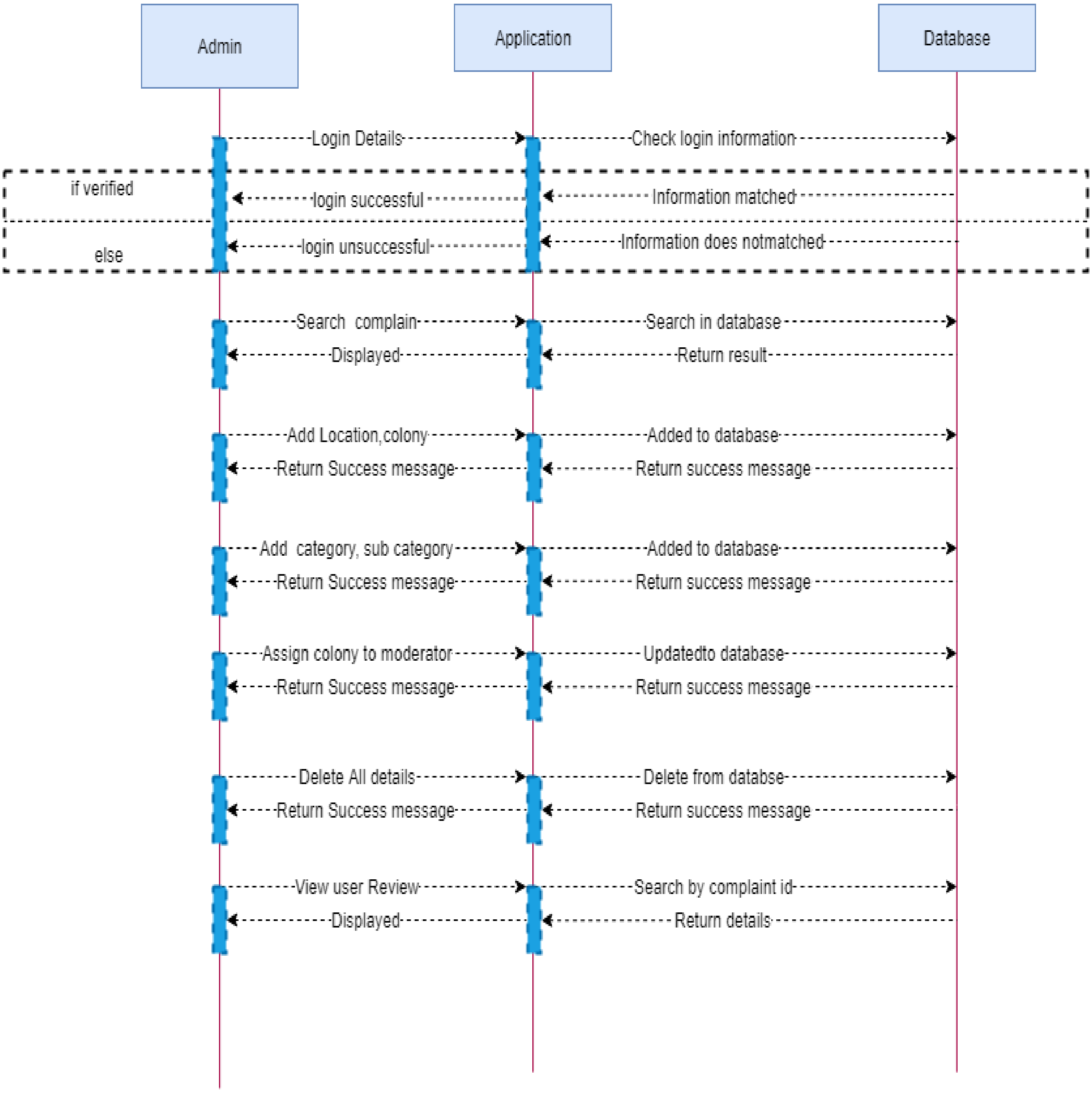
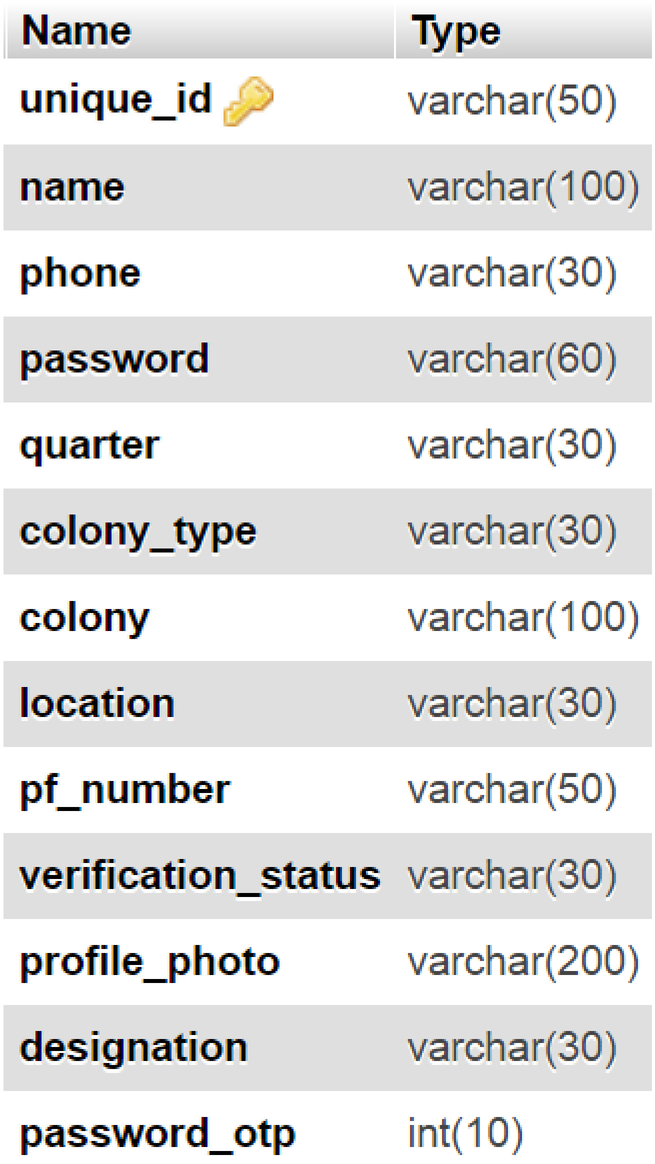


Figure 10

Figure 10. Showing the sequence diagram of Admin in **Maintenance of Complaint Redressal System**

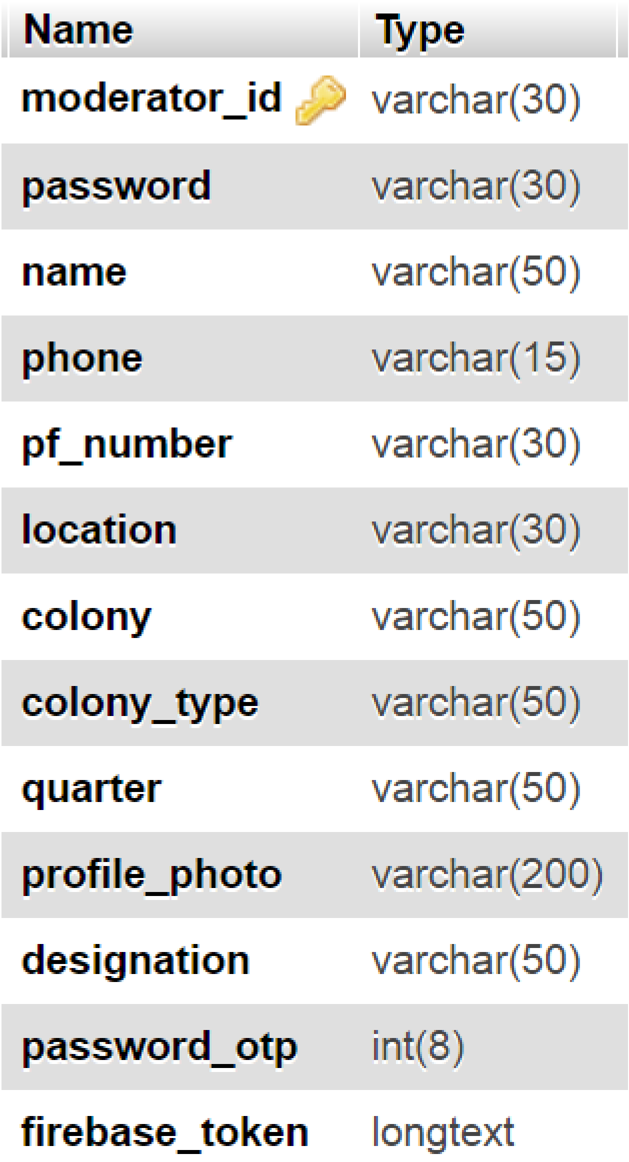
# 7 Table Structure:

## 7.1 User Table



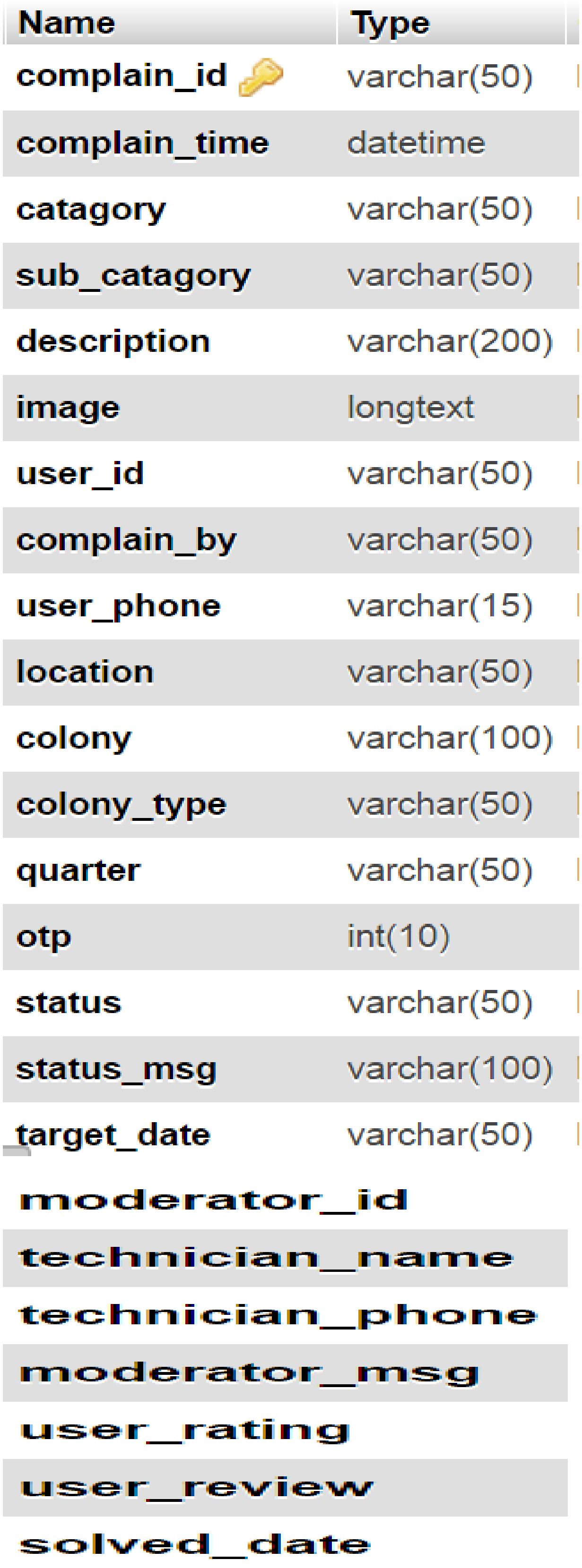
| Name | Type |
|---|---|
| unique_id 🔑 | varchar(50) |
| name | varchar(100) |
| phone | varchar(30) |
| password | varchar(60) |
| quarter | varchar(30) |
| colony_type | varchar(30) |
| colony | varchar(100) |
| location | varchar(30) |
| pf_number | varchar(50) |
| verification_status | varchar(30) |
| profile_photo | varchar(200) |
| designation | varchar(30) |
| password_otp | int(10) |

## 7.2 Moderator Table



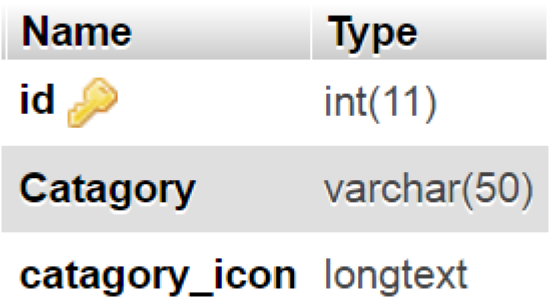
| Name | Type |
|---|---|
| moderator_id 🔑 | varchar(30) |
| password | varchar(30) |
| name | varchar(50) |
| phone | varchar(15) |
| pf_number | varchar(30) |
| location | varchar(30) |
| colony | varchar(50) |
| colony_type | varchar(50) |
| quarter | varchar(50) |
| profile_photo | varchar(200) |
| designation | varchar(50) |
| password_otp | int(8) |
| firebase_token | longtext |

## 7.3 Complain Table



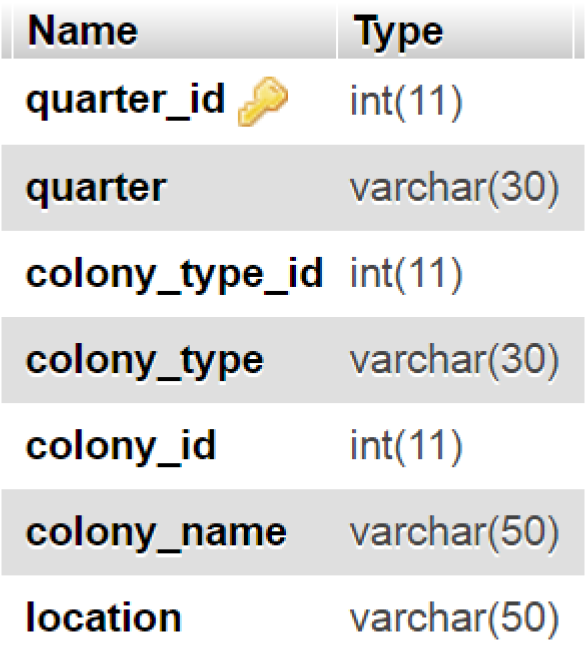
| Name | Type |
|---|---|
| complain_id 🔑 | varchar(50) |
| complain_time | datetime |
| catagory | varchar(50) |
| sub_catagory | varchar(50) |
| description | varchar(200) |
| image | longtext |
| user_id | varchar(50) |
| complain_by | varchar(50) |
| user_phone | varchar(15) |
| location | varchar(50) |
| colony | varchar(100) |
| colony_type | varchar(50) |
| quarter | varchar(50) |
| otp | int(10) |
| status | varchar(50) |
| status_msg | varchar(100) |
| target_date | varchar(50) |
| moderator_id | |
| technician_name | |
| technician_phone | |
| moderator_msg | |
| user_rating | |
| user_review | |
| solved_date | |

## 7.4 Category Table



| Name | Type |
|---|---|
| id 🔑 | int(11) |
| Catagory | varchar(50) |
| catagory_icon | longtext |

## 7.5 Quarter Table



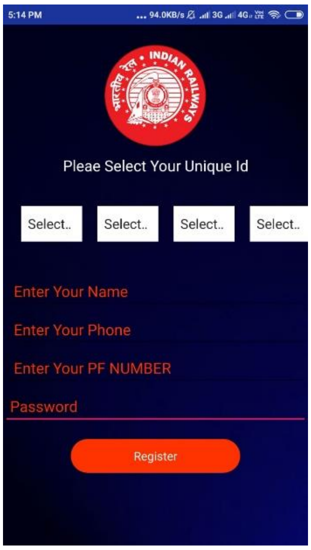
| Name | Type |
|---|---|
| quarter_id 🔑 | int(11) |
| quarter | varchar(30) |
| colony_type_id | int(11) |
| colony_type | varchar(30) |
| colony_id | int(11) |
| colony_name | varchar(50) |
| location | varchar(50) |

# 8 Working of the Mobile Application for Maintenance of Complaint Redressal System

The working of this application is very simplistic in nature. Operating the system as a user is very user friendly, also the system is designed to achieve efficiency using the various benefits of modern technology.

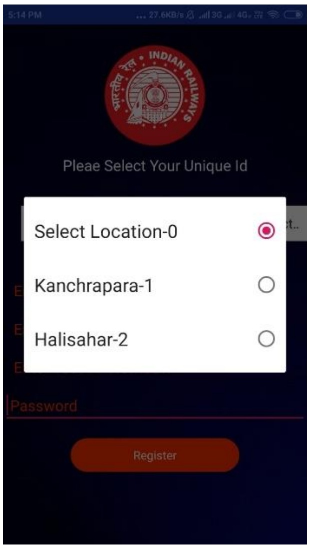
## 8.1 User Application Working

At the start each User has to register in the system by providing essential details. Here all the users are marked as not-verified in the database by default. User have to choose location, colony, quarter type and quarter to generate a unique id.



Screen Shot-1

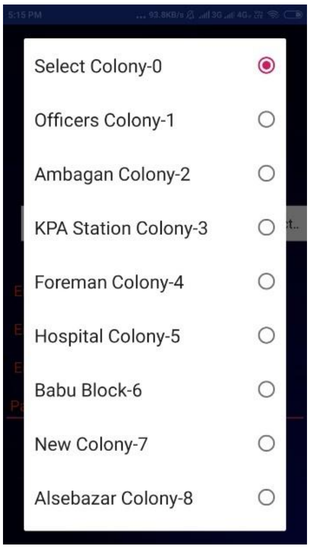
Registration Activity



Select Location-0 ●
Kanchrapara-1 ○
Halisahar-2 ○

Screen Shot-2

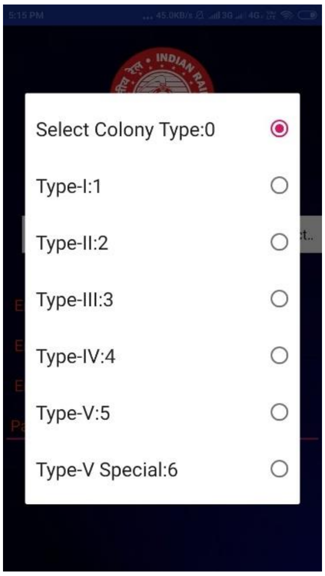
Select Location

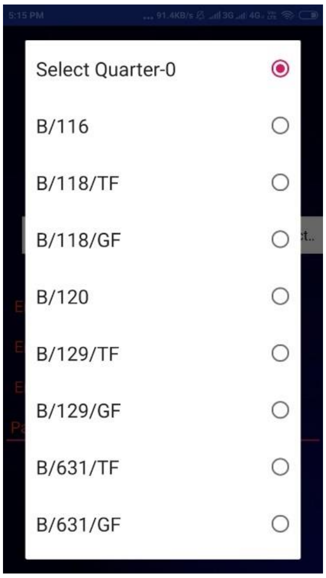


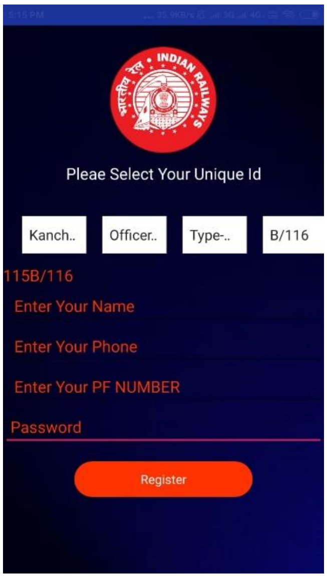
Select Colony-0 ●
Officers Colony-1 ○
Ambagan Colony-2 ○
KPA Station Colony-3 ○
Foreman Colony-4 ○
Hospital Colony-5 ○
Babu Block-6 ○
New Colony-7 ○
Alsebazar Colony-8 ○

Screen Shot-3

Select Colony







Screen Shot-4

Quarter Type

Screen Shot-5

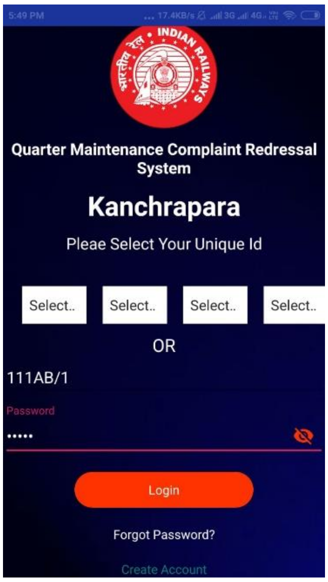
Select Quarter

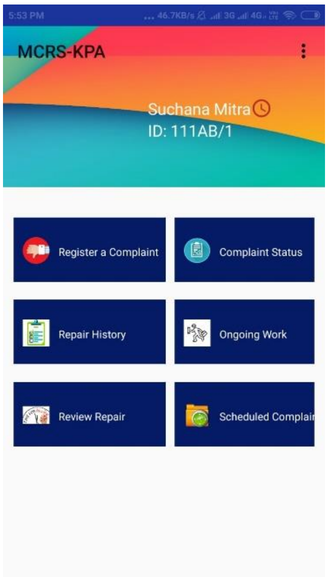
Screen Shot-6

Register

After a user has been registered the admin will verify the account. And then only the user can follow the login process.

After successful login user moved to user dashboard.

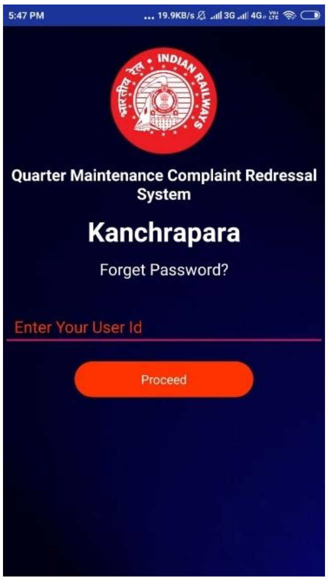


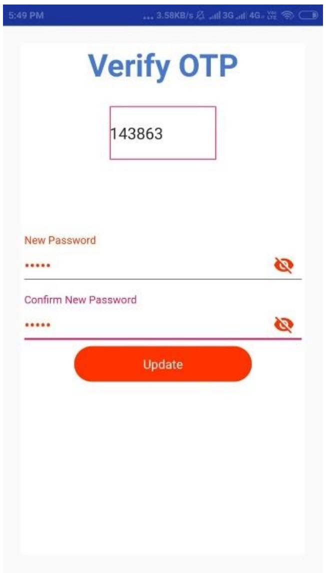


Screen Shot-7
Login Activity

Screen Shot-8
Dashboard Activity

At the time of login if password has forgotten it can be retrieve by registered mobile number. A Otp will be sent to the registered mobile number and he can reset the password with that otp.



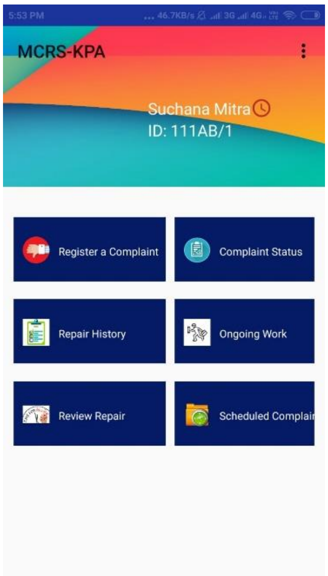


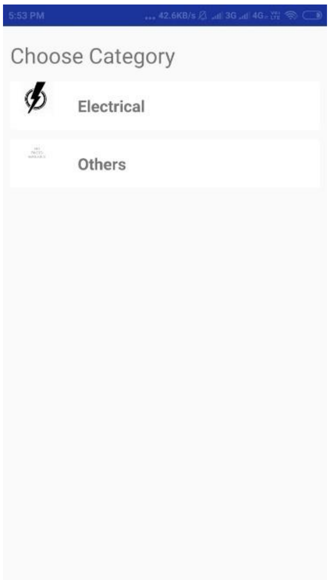
143863

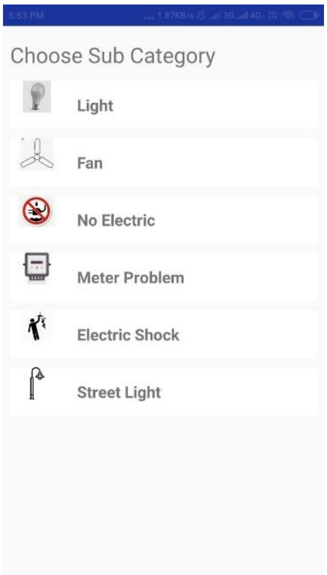
Screen Shot-9
Enter User_id

Screen Shot-10
Reset Password

From dashboard user can choose category, sub category and register a complain. He can take photo at that time or can upload a photo of the complaint from gallary. After successfully registering he/she will get a otp through sms.







Screen Shot-11

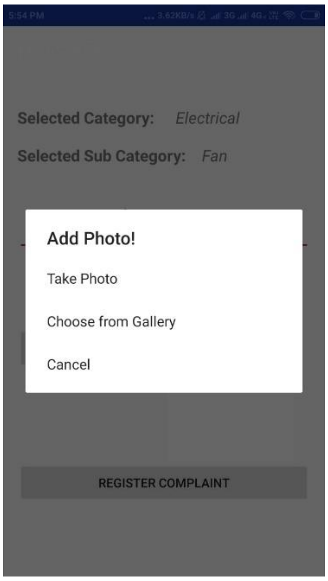
Dashboard Activity

Screen Shot-12

Category Activity

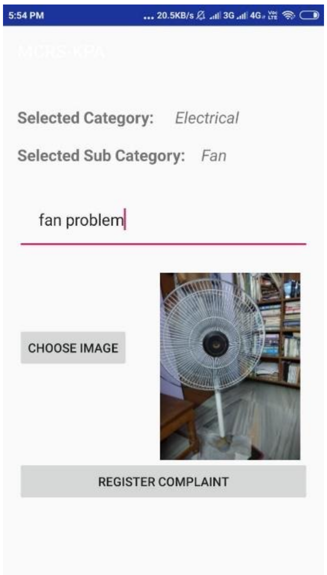
Screen Shot-13

Sub category Activity


Selected Category: Electrical

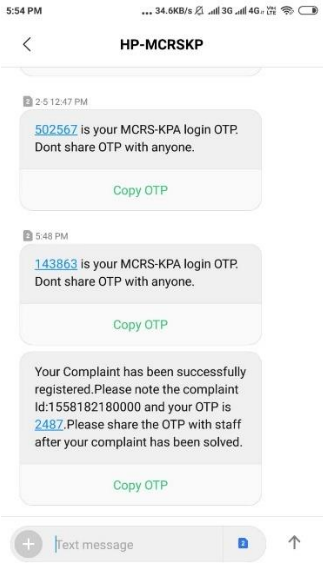
Selected Sub Category: Fan

Add Photo!


Selected Category: Electrical

Selected Sub Category: Fan

fan problem


HP-MCRSKP

2-5 12:47 PM

502567 is your MCRS-KPA login OTP. Dont share OTP with anyone.

5:48 PM

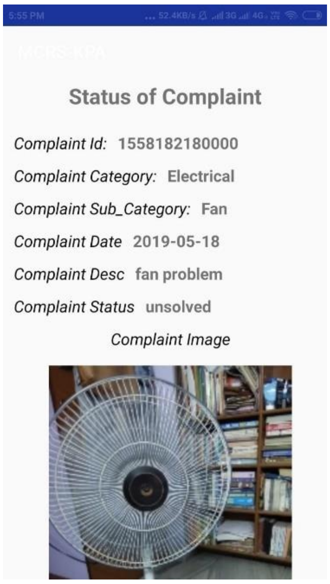
143863 is your MCRS-KPA login OTP. Dont share OTP with anyone.

Your Complaint has been successfully registered.Please note the complaint Id:1558182180000 and your OTP is 2487.Please share the OTP with staff after your complaint has been solved.

Screen Shot-14 Screen Shot-15 Screen Shot-16

Choose Photo Register Complaint Activity Complain_id, otp via sms

After a complaint has been registered user can check various status of complaint like ***"unsolved"," scheduled"," ongoing"," solved".*** For scheduled complain user can view target date, time and technician details.


Status of Complaint

*Complaint Id:* 1558182180000

*Complaint Category:* Electrical

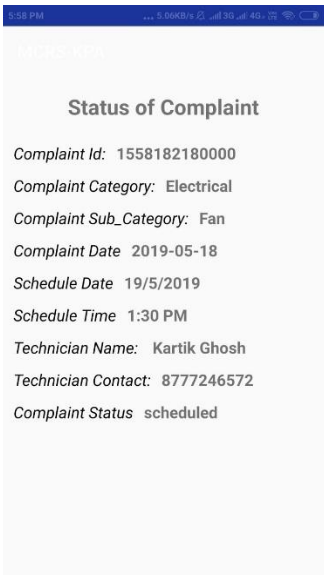
*Complaint Sub_Category:* Fan

*Complaint Date* 2019-05-18

*Complaint Desc* fan problem

*Complaint Status* unsolved

*Complaint Image*


Status of Complaint

*Complaint Id:* 1558182180000

*Complaint Category:* Electrical

*Complaint Sub_Category:* Fan

*Complaint Date* 2019-05-18

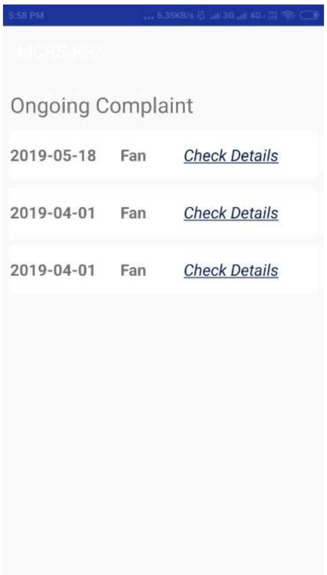
*Schedule Date* 19/5/2019

*Schedule Time* 1:30 PM

*Technician Name:* Kartik Ghosh

*Technician Contact:* 8777246572

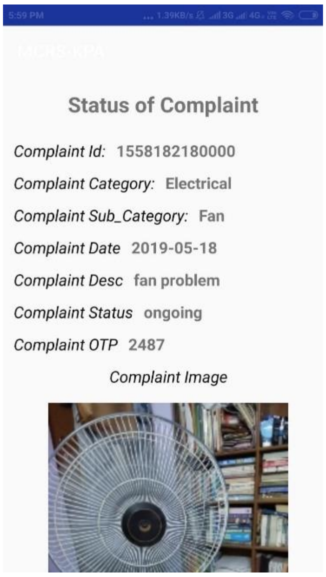
*Complaint Status* scheduled


Ongoing Complaint

| | | |
|---|---|---|
| 2019-05-18 | Fan | Check Details |
| 2019-04-01 | Fan | Check Details |
| 2019-04-01 | Fan | Check Details |

Screen Shot-17 Screen Shot-18 Screen Shot-19

Status Unsolved Schedule Complain Details Ongoing List



Status of Complaint

Complaint Id: 1558182180000

Complaint Category: Electrical

Complaint Sub_Category: Fan

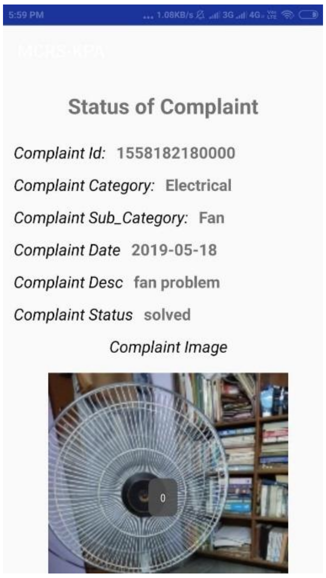
Complaint Date 2019-05-18

Complaint Desc fan problem

Complaint Status ongoing

Complaint OTP 2487

Complaint Image



Status of Complaint

Complaint Id: 1558182180000

Complaint Category: Electrical

Complaint Sub_Category: Fan

Complaint Date 2019-05-18

Complaint Desc fan problem

Complaint Status solved

Complaint Image

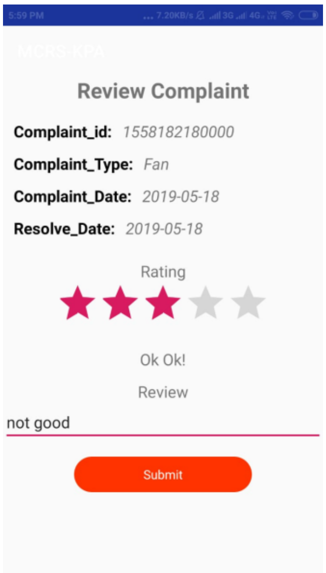
Screen Shot-20

Status Ongoing

Screen Shot-21

Status Solved

After A Complain was solved user can rate and review the complain



Review Complaint

**Complaint_id:** *1558182180000*

**Complaint_Type:** *Fan*

**Complaint_Date:** *2019-05-18*

**Resolve_Date:** *2019-05-18*

Rating

★★★☆☆

Ok Ok!

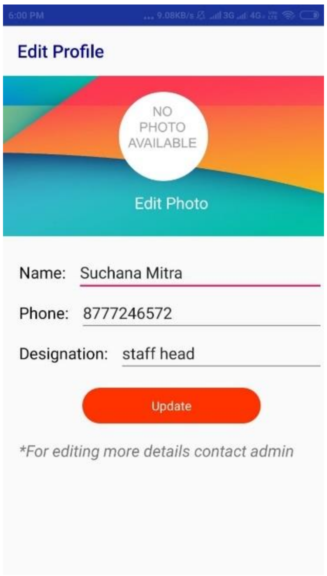
Review

not good

Screen Shot-22

Rating Activity

User can edit his profile, add profile photo and change password if wished. And can view the basic functionality of the application.

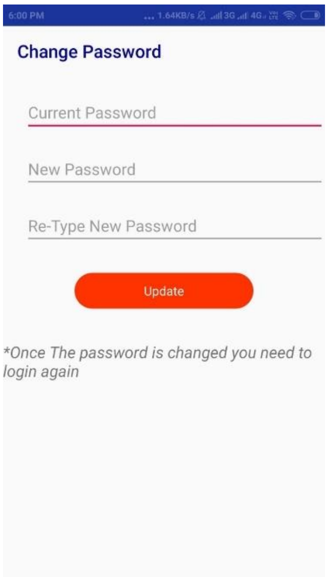


Name: Suchana Mitra

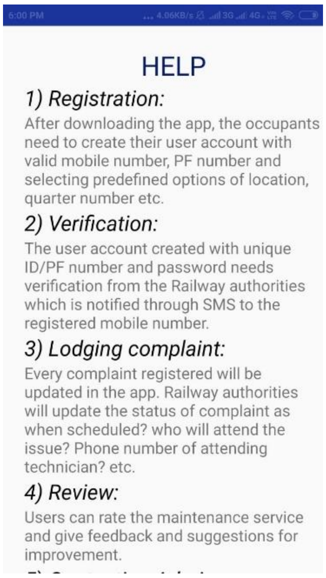
Phone: 8777246572

Designation: staff head

*For editing more details contact admin



*Once The password is changed you need to login again


HELP

*1) Registration:*

After downloading the app, the occupants need to create their user account with valid mobile number, PF number and selecting predefined options of location, quarter number etc.

*2) Verification:*

The user account created with unique ID/PF number and password needs verification from the Railway authorities which is notified through SMS to the registered mobile number.

*3) Lodging complaint:*

Every complaint registered will be updated in the app. Railway authorities will update the status of complaint as when scheduled? who will attend the issue? Phone number of attending technician? etc.

*4) Review:*

Users can rate the maintenance service and give feedback and suggestions for improvement.

Screen Shot-23 Edit Profile

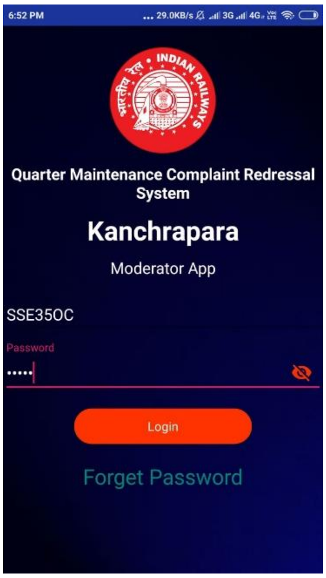
Screen Shot-24 Change Password

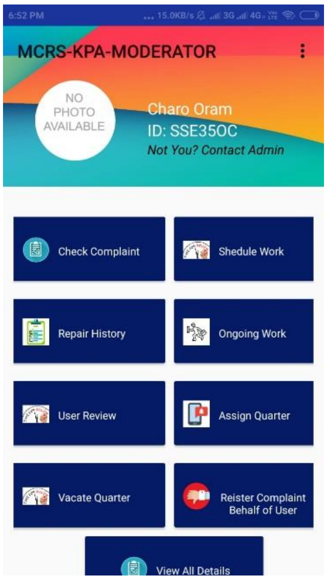
Screen Shot-25 Help Activity

## 8.2 Moderator Application Working

Moderator can follow the login process.

After successful login moderator moved to moderator dashboard.

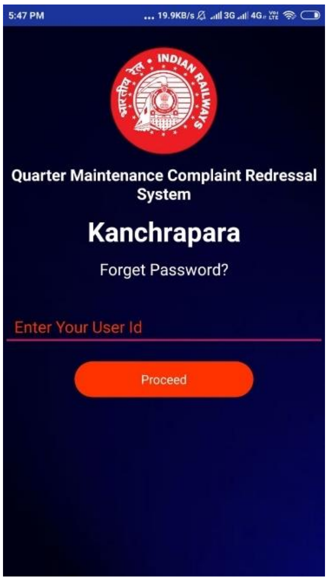




Screen Shot-26
Login Activity

Screen Shot-27
Dashboard Activity

At the time of login if password has been forgotten it can be retrieve by registered mobile number. A Otp will sent to registered mobile number and he can reset the password.

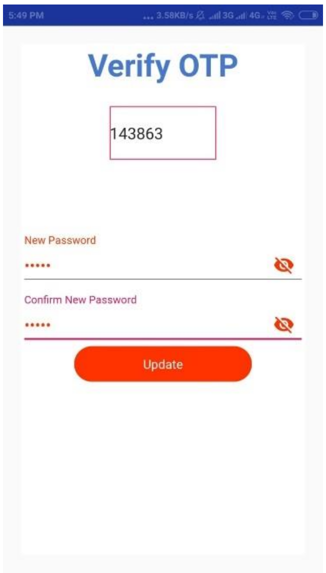


Quarter Maintenance Complaint Redressal System

Kanchrapara

Forget Password?

Enter Your User Id



Verify OTP

143863

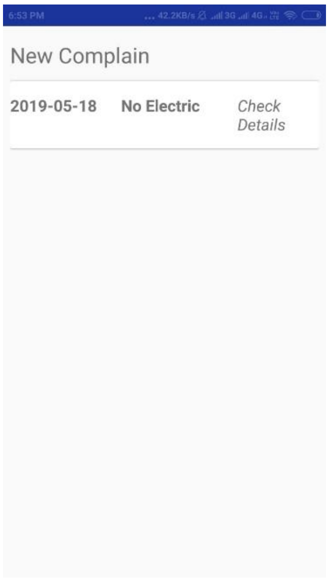
New Password
•••••

Confirm New Password
•••••

Screen Shot-28
Enter User_id

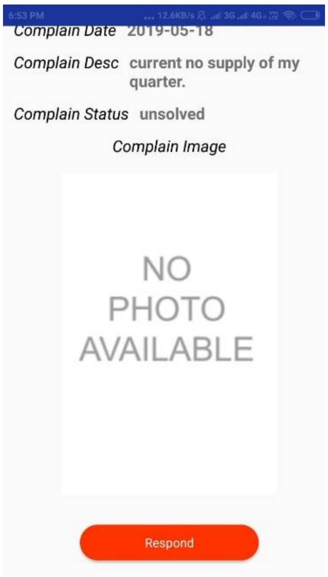
Screen Shot-29
Reset Password

After Entering to the system moderator can check new complain and can schedule the complain by entering target date, target time, technician name and technician phone.



New Complain

2019-05-18 No Electric Check Details

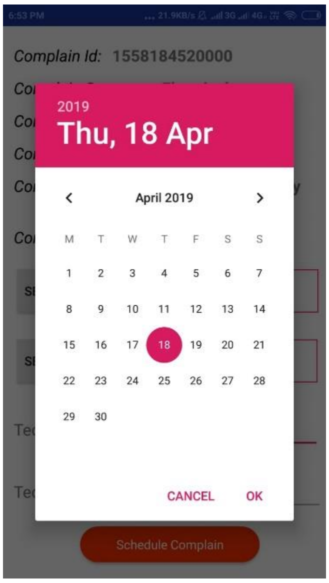


Complain Date 2019-05-18

Complain Desc current no supply of my quarter.

Complain Status unsolved

Complain Image



Complain Id: 1558184520000

2019
Thu, 18 Apr

April 2019

| M | T | W | T | F | S | S |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | | | | | |

Screen Shot-30

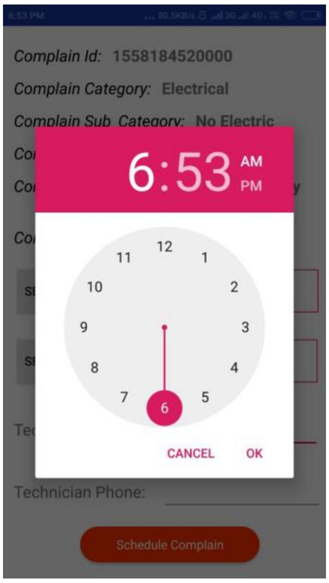
New Complain List

Screen Shot-31

New Complain Details

Screen Shot-32

Choose target date

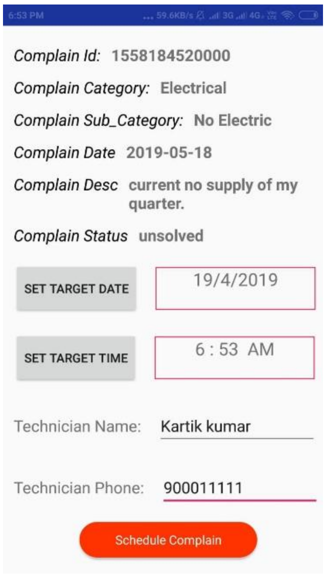


Complain Id: 1558184520000

Complain Category: Electrical

Complain Sub Category: No Electric

Technician Phone:



Complain Id: 1558184520000

Complain Category: Electrical

Complain Sub_Category: No Electric

Complain Date 2019-05-18

Complain Desc current no supply of my quarter.

Complain Status unsolved

SET TARGET DATE 19/4/2019

SET TARGET TIME 6 : 53 AM

Technician Name: Kartik kumar

Technician Phone: 900011111

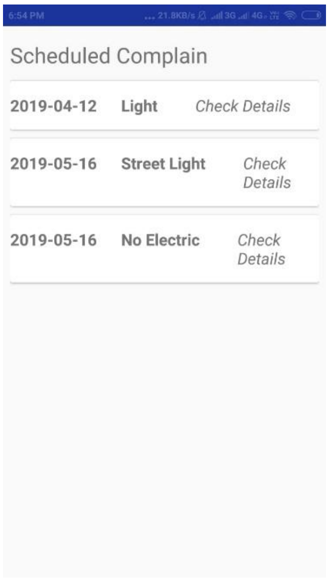
Screen Shot-33

Choose target time

Screen Shot-34

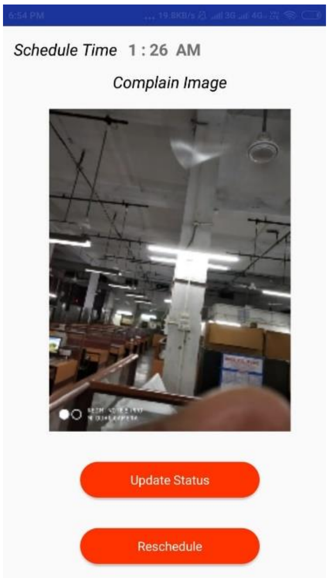
Schedule Complain

Once a complain is scheduled moderator can update there status to “***ongoing”*** or can “***re schedule”*** it.



Scheduled Complain

| | | |
|---|---|---|
| 2019-04-12 | Light | Check Details |
| 2019-05-16 | Street Light | Check Details |
| 2019-05-16 | No Electric | Check Details |



Schedule Time 1 : 26 AM

Complain Image

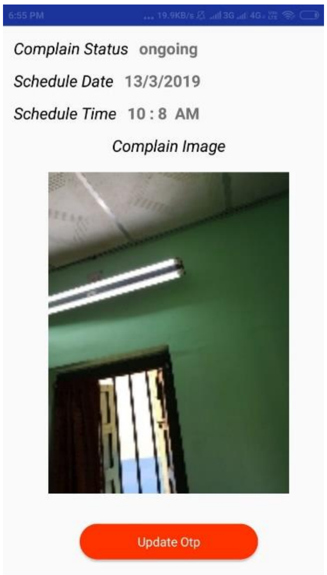
Screen Shot-35

Schedule List

Screen Shot-36

Reschedule/Update

Moderator can update Otp for ongoing complain to make it solved.

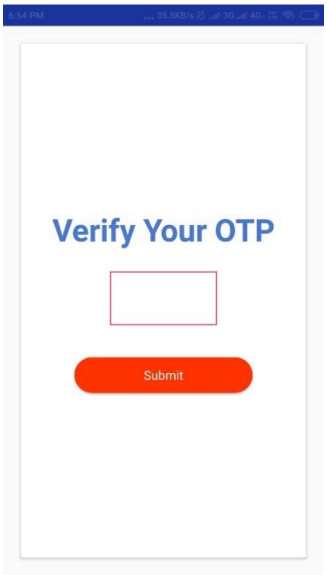


Complain Status ongoing

Schedule Date 13/3/2019

Schedule Time 10 : 8 AM

Complain Image



Verify Your OTP

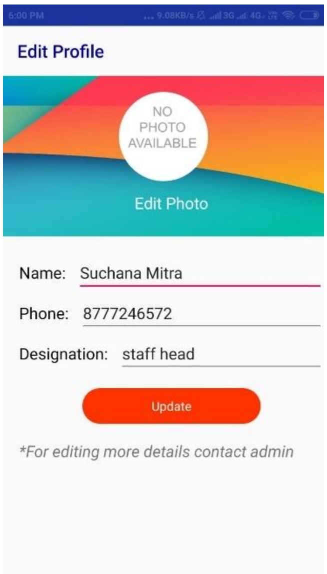
Screen Shot-37

Onging Complain

Screen Shot-38

Update Otp

Moderator can edit his profile, add profile photo and change password if he wished.



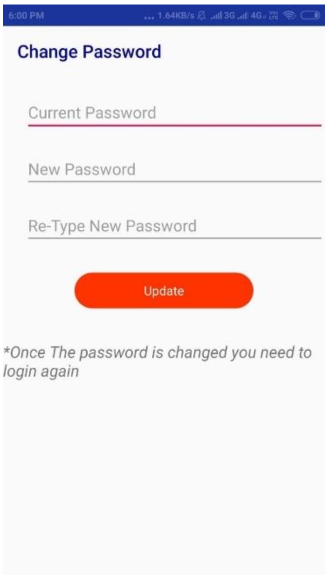
Edit Profile

Name: Suchana Mitra

Phone: 8777246572

Designation: staff head

*For editing more details contact admin



Change Password

Current Password

New Password

Re-Type New Password

*Once The password is changed you need to login again

Screen Shot-39

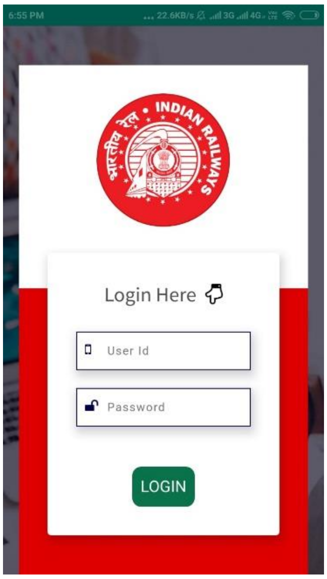
Edit Profile

Screen Shot-40

Change Password

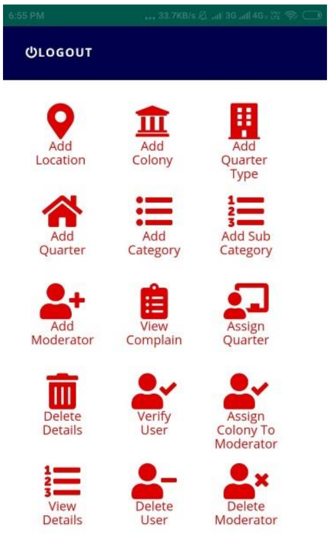
## 8.3 Admin Application Working

Admin can login with the login credential and after successful login admin moved to admin dashboard.



Screen Shot-41

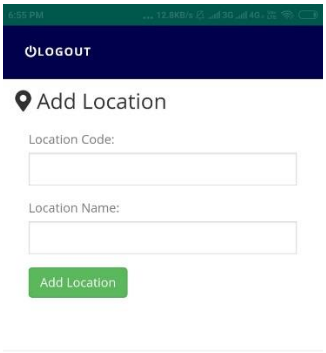
Admin Login

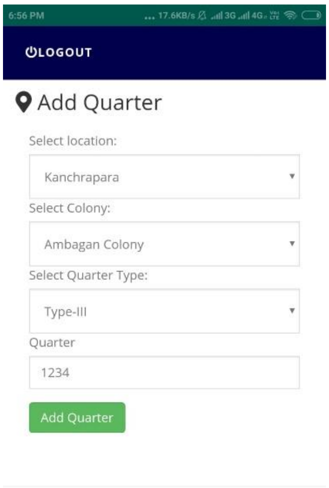


Screen Shot-42

Admin Dashboard

Admin can add and Delete all the details.



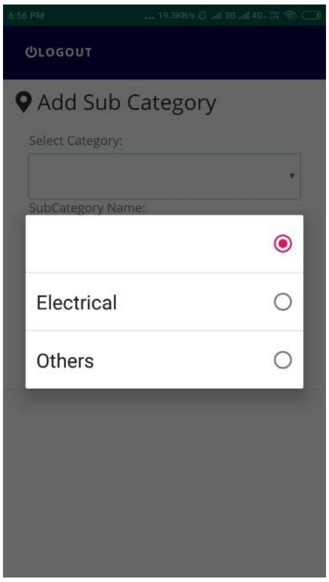


Select location: Kanchrapara

Select Colony: Ambagan Colony

Select Quarter Type: Type-III

Quarter 1234



●

○ Electrical

○ Others

Screen Shot-43

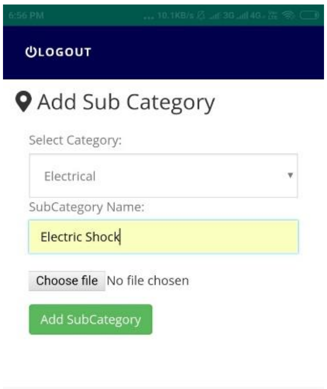
Add Location

Screen Shot-44

Add quarter

Screen Shot-45

Add subcategory



⏻LOGOUT

Add Sub Category

Select Category:

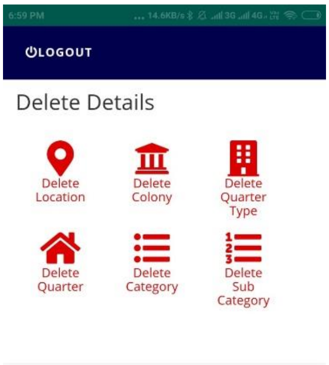
Electrical

SubCategory Name:

Electric Shock

Choose file No file chosen

Add SubCategory



⏻LOGOUT

Delete Details

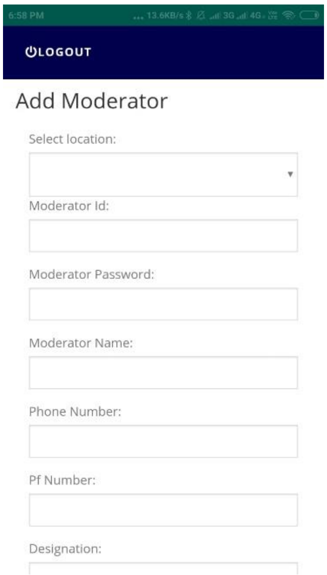
Screen Shot-46

Add Sub Category

Screen Shot-47

Delete Details

Admin can Add or Delete Moderator.



⏻LOGOUT

Add Moderator

Select location:

Moderator Id:

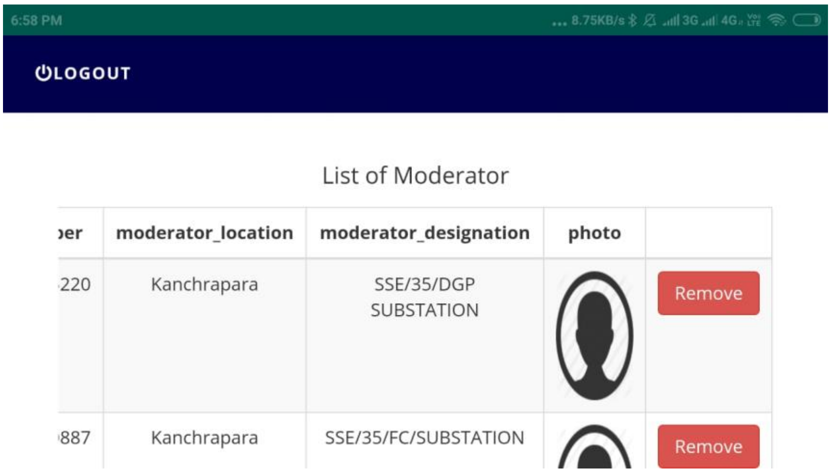
Moderator Password:

Moderator Name:

Phone Number:

Pf Number:

Designation:



6:58 PM ... 8.75KB/s 3G 4G

⏻LOGOUT

List of Moderator

| ɔer | moderator_location | moderator_designation | photo | |
|---|---|---|---|---|
| 220 | Kanchrapara | SSE/35/DGP SUBSTATION | | Remove |
| 887 | Kanchrapara | SSE/35/FC/SUBSTATION | | Remove |

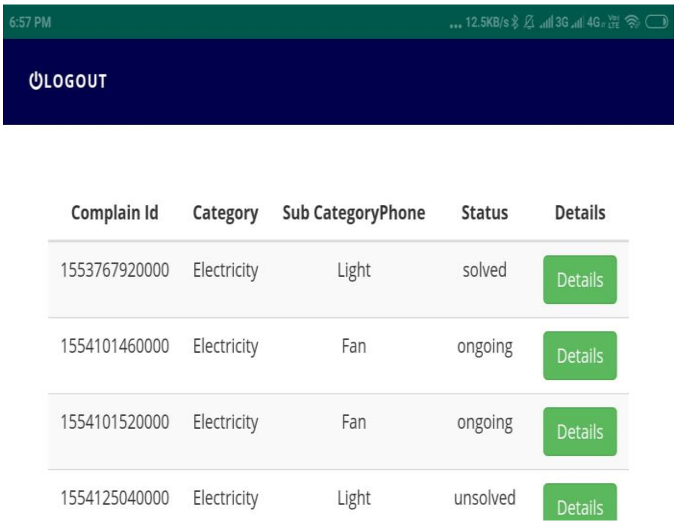
. Screen Shot-48

Add Moderator

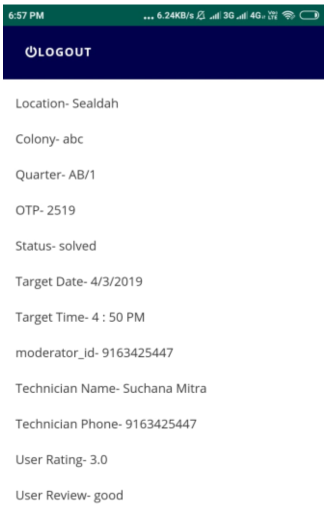
Screen Shot-49

Remove Modeator.

Admin can track all the complain



| Complain Id | Category | Sub CategoryPhone | Status | Details |
|---|---|---|---|---|
| 1553767920000 | Electricity | Light | solved | Details |
| 1554101460000 | Electricity | Fan | ongoing | Details |
| 1554101520000 | Electricity | Fan | ongoing | Details |
| 1554125040000 | Electricity | Light | unsolved | Details |



Location- Sealdah

Colony- abc

Quarter- AB/1

OTP- 2519

Status- solved

Target Date- 4/3/2019

Target Time- 4 : 50 PM

moderator_id- 9163425447

Technician Name- Suchana Mitra

Technician Phone- 9163425447

User Rating- 3.0

User Review- good

. Screen Shot-50

List Of Complain

Screen Shot-51

Complain Details

# 9 Testing

Once source code has been generated, application must be tested to uncover (and correct) as many errors as possible before delivery to customer. The goal is to design a series of test cases that have a high likelihood of finding errors. To uncover the errors application techniques are used. These techniques provide systematic guidance for designing test that

(1) Exercise the internal logic of application components, and
(2) Exercise the input and output domains of the program to uncover errors in program function, behaviour and performance.

Steps: application is tested from two different perspectives:

(1) Internal program logic is exercised using ―White box test case design Techniques.
(2) Application requirements are exercised using ―BLACK block box test case Design techniques.

In both cases, the intent is to find the maximum number of errors with the Minimum amount of effort and time.

## 9.1 Black Box Testing (USER)

| Requirement | Test Case Name | Test Case Description | Test Step Name | Test Step Description | Expected Result | Actual Result | severity | Priority |
|---|---|---|---|---|---|---|---|---|
| User is able to register and launch complain success fully | TC001 | To verify that User is able to register successfully | 1 | User open the app. | User should get the option to Login/Register | User get the option to Login/Register | High | 1 |
| | | | 2 | User enter all the mandatory details. | User should be able to enter all the mandatory details in Register form. | User is able to enter all the mandatory details in Register form. | High | 2 |
| | | | 3 | User click on the Register Button. | User should be able to register successfully and navigate to Login tab. | User should be able to register successfully and navigate to Login tab. | High | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | TC002 | To verify that User is able to Login successfully | 1 | User is registered into the app. | User should get the option to Login. | User get the option to Login. | High | 1 |
| | | | 2 | User enter the valid Unique id/PF no. | User should be able to enter valid Unique id/PF no. | User is able to enter valid Unique id/PF no. | High | 2 |
| | | | 3 | User enter the valid Password. | User should be able to enter valid Password: | User is able to enter valid Password: | High | 2 |
| | | | 4 | User Click on the Login Button | User should be able to login successfully and navigate to Dashboard. | User is able to login successfully and navigate to Dashboard. | High | 1 |
| | TC003 | To verify that User is not able to Login successfully | 1 | User is registered into the app. | User should get the option to Login. | User get the option to Login. | High | 1 |
| | | | 2 | User enter the invalid Unique id/PF no. | User should be able to enter invalid Unique id/PF no. | User is able to enter invalid Unique id/PF no. | High | 2 |
| | | | 3 | User enter the invalid Password. | User should be able to enter invalid Password. | User is able to enter invalid Password. | High | 2 |
| | | | 4 | User Click on the Login Button. | User should not be able to login successfully and Error message should be displayed as "Invalid Credentials". | User is not be able to login successfully and Error message is displayed as "Invalid Credentials". | High | 1 |
| | TC004 | To verify that User is not able to Login successfully due to not verified account. | 1 | User is registered into the app. | User should get the option to Login. | User get the option to Login. | High | 1 |
| | | | 2 | User enter the valid Unique id/PF no. | User should be able to enter valid Unique id/PF no. | User is able to enter valid Unique id/PF no. | High | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 3 | User enter the valid Password. | User should be able to enter valid Password: | User is able to enter valid Password: | High | 2 |
| | | | 4 | User Click on the Login Button. | User should not be able to login successfully and Error message should be displayed as "Account is not verified". | User is not be able to login successfully and Error message is displayed as "Account is not verified". | High | 1 |
| | TC005 | To verify that User is able to launch complain successfully | 1 | User is logged in to the app. | User should get the option to launch complain. | User get the option to launch complain. | High | 1 |
| | | | 2 | User choose valid Category. | User should be able to choose valid category. | User is able to choose valid category. | High | 2 |
| | | | 3 | User enter valid Description. | User should be able to enter valid Description. | User is able to enter valid Description. | High | 2 |
| | | | 4 | User upload valid Image. | User should be able to upload valid Image. | User is able to upload valid Image. | High | 2 |
| | | | 5 | User Click on the Submit Button. | User should not be able to launch complain successfully and get SMS in registered mobile number with an otp. | User is able to launch complain successfully and got SMS in registered mobile number with an otp. | High | 1 |
| | TC006 | To verify that user is able to check status | 1 | User launched complain successfully. | User should be able to check status like 'Unsolved', 'Scheduled', 'Ongoing', 'Solved'. | User is able to check status like 'Unsolved', 'Scheduled', 'Ongoing', 'Solved'. | High | 1 |
| | TC007 | To verify that user is able to give rating and review. | 1 | Complain is solved and status is "Solved". | User should be able to give rating and review. | User is able to give rating and review. | High | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | TC008 | To verify that user is able to send message to admin. | 1 | User launched complain successfully. | User should be able to send message to admin for any query. | User is able to send message to admin for any query. | High | 1 |
| | TC009 | To verify that user is able to edit profile. | 1 | User is logged in to the app. | User should get the option to edit profile. | User get the option to edit profile. | High | 1 |
| | | | 2 | User modify the Name. | User should be able to edit Name. | User is able to edit Name. | High | 1 |
| | | | 3 | User modify the Ph no. | User should be able to edit Ph No. | User is able to edit Ph No. | High | 1 |
| | | | 4 | User modify the Designation. | User should be able to edit Designation. | User is able to edit Designation. | High | 1 |
| | | | 5 | User Click on the Save Button. | User should be able to save the modified details. | User is able to save the modified details. | High | 1 |
| | TC010 | To verify that user is un able to edit profile. | 1 | User is logged in to the app. | User should get the option to edit profile. | User get the option to edit profile. | High | 1 |
| | | | 2 | User Cannot modify the pf number | User should not be able to edit pf number | User is not able to edit pf number | High | 1 |
| | | | 3 | User Cannot modify the user_id | User should not be able to edit user_id | User is not able to edit user_id | High | 1 |

## 9.2 Black Box Testing (MODERATOR)

| Requirement | Test Case Name | Test Case Description | Test Step Name | Test Step Description | Expected Result | Actual Result | severity | Priority |
|---|---|---|---|---|---|---|---|---|
| Moderator is able to solve a complain successfully | TC001 | To verify that Moderator is able to Login successfully | 1 | Moderator is registered into the app. | Moderator should get the option to Login. | Moderator get the option to Login. | High | 1 |
| | | | 2 | Moderator enter the valid Unique id/PF no. | Moderator should be able to enter valid Unique id/PF no. | Moderator is able to enter valid Unique id/PF no. | High | 2 |
| | | | 3 | Moderator enter the valid Password. | Moderator should be able to enter valid Password: | Moderator is able to enter valid Password: | High | 2 |
| | | | 4 | Moderator Click on the Login Button | Moderator should be able to login successfully and navigate to Dashboard. | Moderator is able to login successfully and navigate to Dashboard. | High | 1 |
| | TC002 | To verify that Moderator is not able to Login successfully | 1 | Moderator is registered into the app. | Moderator should get the option to Login. | Moderator get the option to Login. | High | 1 |
| | | | 2 | Moderator enter the invalid Unique id/PF no. | Moderator should be able to enter invalid Unique id/PF no. | Moderator is able to enter invalid Unique id/PF no. | High | 2 |
| | | | 3 | Moderator enter the invalid Password. | Moderator should be able to enter invalid Password. | Moderator is able to enter invalid Password. | High | 2 |
| | | | 4 | Moderator Click on the Login Button. | Moderator should not be able to login | Moderator is not be able to login successfully | High | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | successfully and Error message should be displayed as "Invalid Credentials". | and Error message is displayed as "Invalid Credentials". | | |
| | TC003 | To verify that Moderator is able to check status | 1 | User launched complain successfully. | Moderator should be able to check status like 'Unsolved', 'Scheduled', 'Ongoing', 'Solved'. | Moderator is able to check status like 'Unsolved', 'Scheduled', 'Ongoing', 'Solved'. | High | 1 |
| | TC004 | To verify that Moderator is able to give update status from unsolved to scheduled. | 1 | Complain Registered | Moderator should be able to check status of unsolved complain | Moderator is able to check status of unsolved complain | High | 1 |
| | | | 2 | Moderator Enter target Date & time | Moderator should be able to update target date and time successfully | Moderator is able to update target date and time successfully | High | 1 |
| | | | 3 | Moderator Enter technician Name and number | Moderator should be able to update technician Name and number successfully | Moderator is able to update technician Name and number successfully | High | 1 |
| | | | 4 | Moderator Click on the update Button. | Moderator should be able to update the status. | Moderator is able to update the status. | High | 1 |
| | TC005 | To verify that Moderator is able to give update status from ongoing to solved | 1 | Complain Registered | Moderator should be able to check status of unsolved complain | Moderator is able to check status of unsolved complain | High | 1 |
| | | | 2 | Moderator Enter OTP | Moderator should be able to | Moderator is able to update OTP successfully | High | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | update OTP successfully | | | |
| | | | 3 | Moderator Click on the update Button. | Moderator should be able to update the status. | Moderator is able to update the status. | High | 1 |
| | TC006 | To verify that Moderator is able to edit profile. | 1 | Moderator is logged in to the app. | Moderator should get the option to edit profile. | Moderator get the option to edit profile. | High | 1 |
| | | | 2 | Moderator modify the Name. | Moderator should be able to edit Name. | Moderator is able to edit Name. | High | 1 |
| | | | 3 | Moderator modify the Ph no. | Moderator should be able to edit Ph No. | Moderator is able to edit Ph No. | High | 1 |
| | | | 4 | Moderator modify the Designation. | Moderator should be able to edit Designation. | Moderator is able to edit Designation. | High | 1 |
| | | | 5 | Moderator Click on the Save Button. | Moderator should be able to save the modified details. | Moderator is able to save the modified details. | High | 1 |
| | TC007 | To verify that Moderator is un able to edit profile. | 1 | Moderator is logged in to the app. | Moderator should get the option to edit profile. | Moderator get the option to edit profile. | High | 1 |
| | | | 2 | Moderator Cannot modify the pf number | Moderator should not be able to edit pf number | Moderator is not able to edit pf number | High | 1 |
| | | | 3 | Moderator Cannot modify the Moderator _id | Moderator should not be able to edit Moderator _id | Moderator is not able to edit Moderator _id | High | 1 |

## 9.3 Black Box Testing (ADMIN)

| Requirement | Test Case Name | Test Case Description | Test Step Name | Test Step Description | Expected Result | Actual Result | severity | Priority |
|---|---|---|---|---|---|---|---|---|
| Admin is able to solve a complain successfully | TC001 | To verify that Admin is able to Login successfully | 1 | Admin is registered into the app. | Admin should get the option to Login. | Admin get the option to Login. | High | 1 |
| | | | 2 | Admin enter the valid Unique id/PF no. | Admin should be able to enter valid Unique id/PF no. | Admin is able to enter valid Unique id/PF no. | High | 2 |
| | | | 3 | Admin enter the valid Password. | Admin should be able to enter valid Password: | Admin is able to enter valid Password: | High | 2 |
| | | | 4 | Admin Click on the Login Button | Admin should be able to login successfully and navigate to Dashboard. | Admin is able to login successfully and navigate to Dashboard. | High | 1 |
| | TC002 | To verify that Admin is not able to Login successfully | 1 | Admin is registered into the app. | Admin should get the option to Login. | Admin get the option to Login. | High | 1 |
| | | | 2 | Admin enter the invalid Unique id/PF no. | Admin should be able to enter invalid Unique id/PF no. | Admin is able to enter invalid Unique id/PF no. | High | 2 |
| | | | 3 | Admin enter the invalid Password. | Admin should be able to enter invalid Password. | Admin is able to enter invalid Password. | High | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 4 | Admin Click on the Login Button. | Admin should not be able to login successfully and Error message should be displayed as "Invalid Credentials" . | Admin is not be able to login successfully and Error message is displayed as "Invalid Credentials" . | High | 1 |
| | TC003 | To verify that Admin is able to check status | 1 | User launched complain successfully . | Admin should be able to check status like 'Unsolved', 'Scheduled', 'Ongoing', 'Solved'. | Admin is able to check status like 'Unsolved', 'Scheduled', 'Ongoing', 'Solved'. | High | 1 |
| | TC004 | To verify that Admin is able to Add Location | 1 | Admin enter all details | Admin should be able to add location | Admin is able to add location | High | 1 |
| | TC005 | To verify that Admin is able to Add Colony | 1 | Admin enter all details | Admin should be able to add Colony | Admin is able to add Colony | High | 1 |
| | TC006 | To verify that Admin is able to Add Quarter Type | 1 | Admin enter all details | Admin should be able to add Quarter Type | Admin is able to add Quarter Type | High | 1 |
| | TC007 | To verify that Admin is able to Add Quarter | 1 | Admin enter all details | Admin should be able to add Quarter | Admin is able to add Quarter | High | 1 |
| | TC008 | To verify that Admin is able to Add Category | 1 | Admin enter all details | Admin should be able to add Category | Admin is able to add Category | High | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | TC009 | To verify that Admin is able to Add Sub Category | 1 | Admin enter all details | Admin should be able to add Sub Category | Admin is able to add Sub Category | High | 1 |
| | TC010 | To verify that Admin is able to Add Sub Category | 1 | Admin enter all details | Admin should be able to add Sub Category | Admin is able to add Sub Category | High | 1 |
| | TC011 | To verify that Admin is able to Add Moderator | 1 | Admin enter all details | Admin should be able to add Moderator | Admin is able to add Moderator | High | 1 |
| | TC012 | To verify that Admin is able to Delete Moderator | 1 | Admin enter all details | Admin should be able to Delete Moderator | Admin is able to delete Moderator | High | 1 |
| | TC012 | To verify that Admin is able to Delete Moderator | 1 | Admin enter all details | Admin should be able to Delete Moderator | Admin is able to delete Moderator | High | 1 |

# 10 Gantt Chart

A Gantt chart is a graphical depiction of a project schedule. It's is a type of bar chart that shows the start and finish dates of several elements of a project that include resources, milestones, tasks and dependencies. Henry Gantt, an American mechanical engineer, designed the Gantt chart. A Gantt chart helps in scheduling, managing, and monitoring specific tasks and resources in a project. The chart shows the project timeline, which includes scheduled and completed work over a period. The Gantt chart aids project managers in communicating project status or plans and also helps ensure the project remains on track.

| Task | Start Date | End Date | Duration |
|---|---|---|---|
| Problem Statement | 01-Jan | 10-Jan-19 | 10 |
| Requirement Specification | 11-Jan-19 | 31-Jan-19 | 16 |
| Analysis | 01-Feb-19 | 10-Feb-19 | 10 |
| Design | 11-Feb-19 | 28-Feb-19 | 18 |
| Coding | 01-Mar-19 | 14-Apr-19 | 45 |
| Testing | 15-Apr-19 | 30-Apr-19 | 15 |
| Implementation | 01-May-19 | 10-May-19 | 10 |
| Documentation | 11-May-19 | 16-May-19 | 6 |

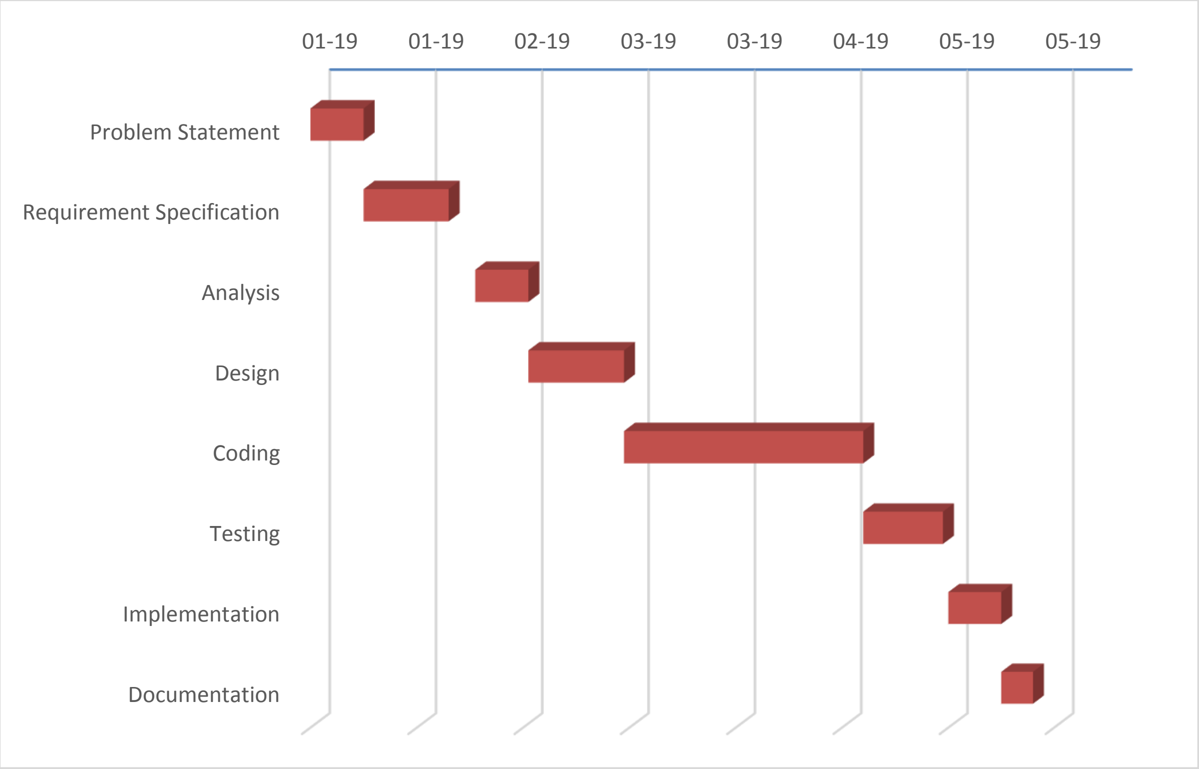


Figure 11

Figure 11. Showing the Gantt Chart for **Maintenance of Complaint Redressal System**

# 11 Pert Chart

A PERT chart is a project management tool that provides a graphical representation of a project's timeline. PERT, or Program Evaluation Review Technique, breaks down the individual tasks of a project for analysis.

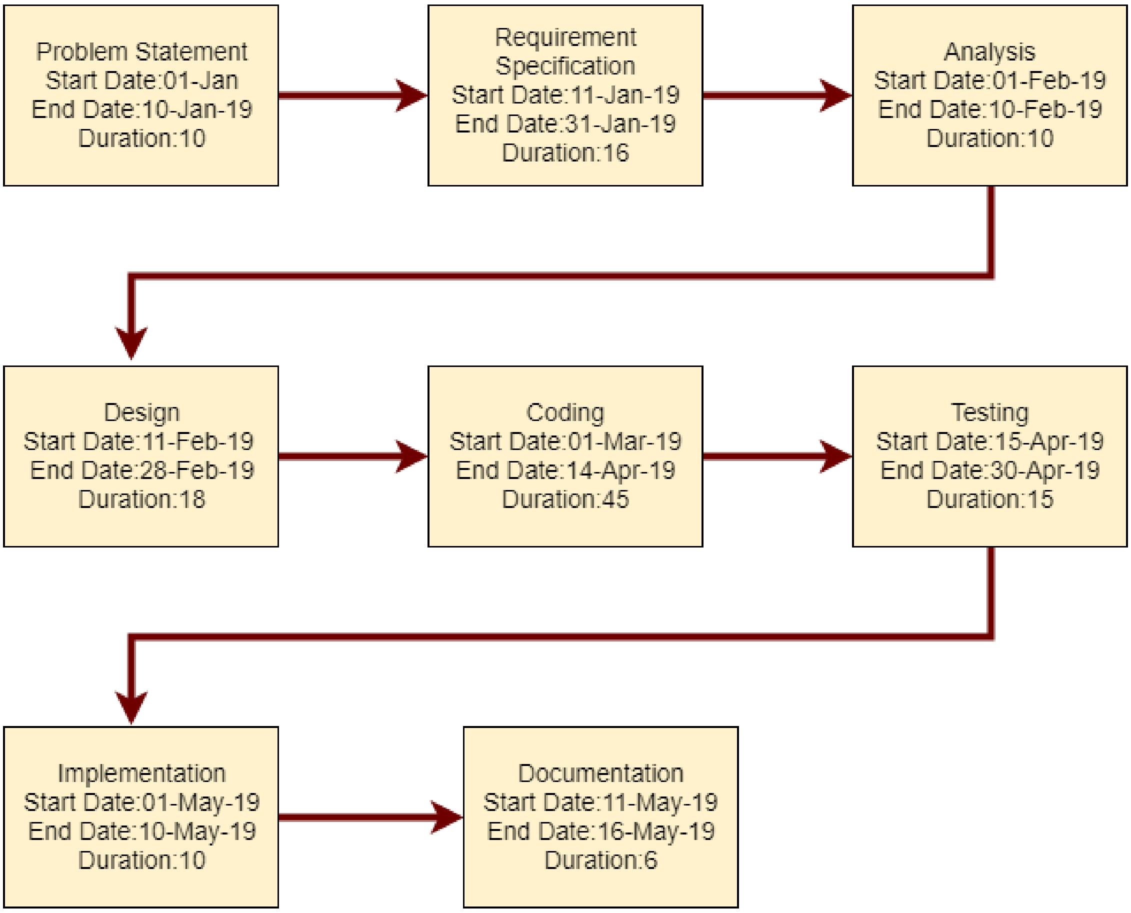


Figure 12

Figure 12. Showing the Pert Chart for **Maintenance of Complaint Redressal System**

# 12 Cost Estimation

Cocomo (Constructive Cost Model) is a regression model based on LOC, i.e. **number of Lines of Code**. It is a procedural cost estimate model for software projects and often used as a process of reliably predicting the various parameters associated with making a project such as size, effort, cost, time and quality.

The key parameters which define the quality of any software products, which are also an outcome of the Cocomo are primarily Effort & Schedule:

**Effort:** Amount of labour that will be required to complete a task. It is measured in person months units.

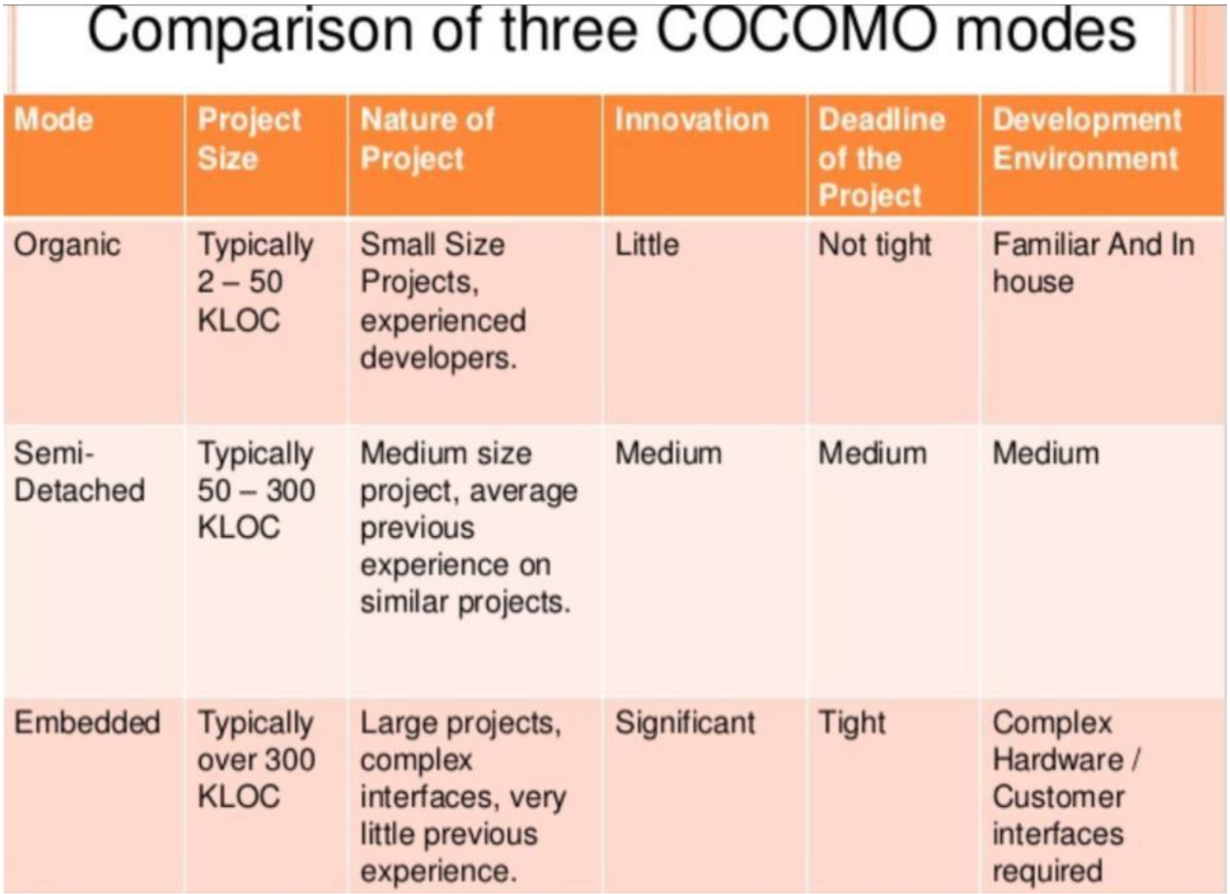
**Schedule:** Simply means the amount of time required for the completion of the job, which is, of course, proportional to the effort put. It is measured in the units of time such as weeks, months.

Different models of Cocomo have been proposed to predict the cost estimation at different levels, based on the amount of accuracy and correctness required. All of these models can be applied to a variety of projects, whose characteristics determine the value of constant to be used in subsequent calculations. These characteristics pertaining to different system types are mentioned below.

**Organic** – A software project is said to be an organic type if the team size required is adequately small, the problem is well understood and has been solved in the past and also the team members have a nominal experience regarding the problem.

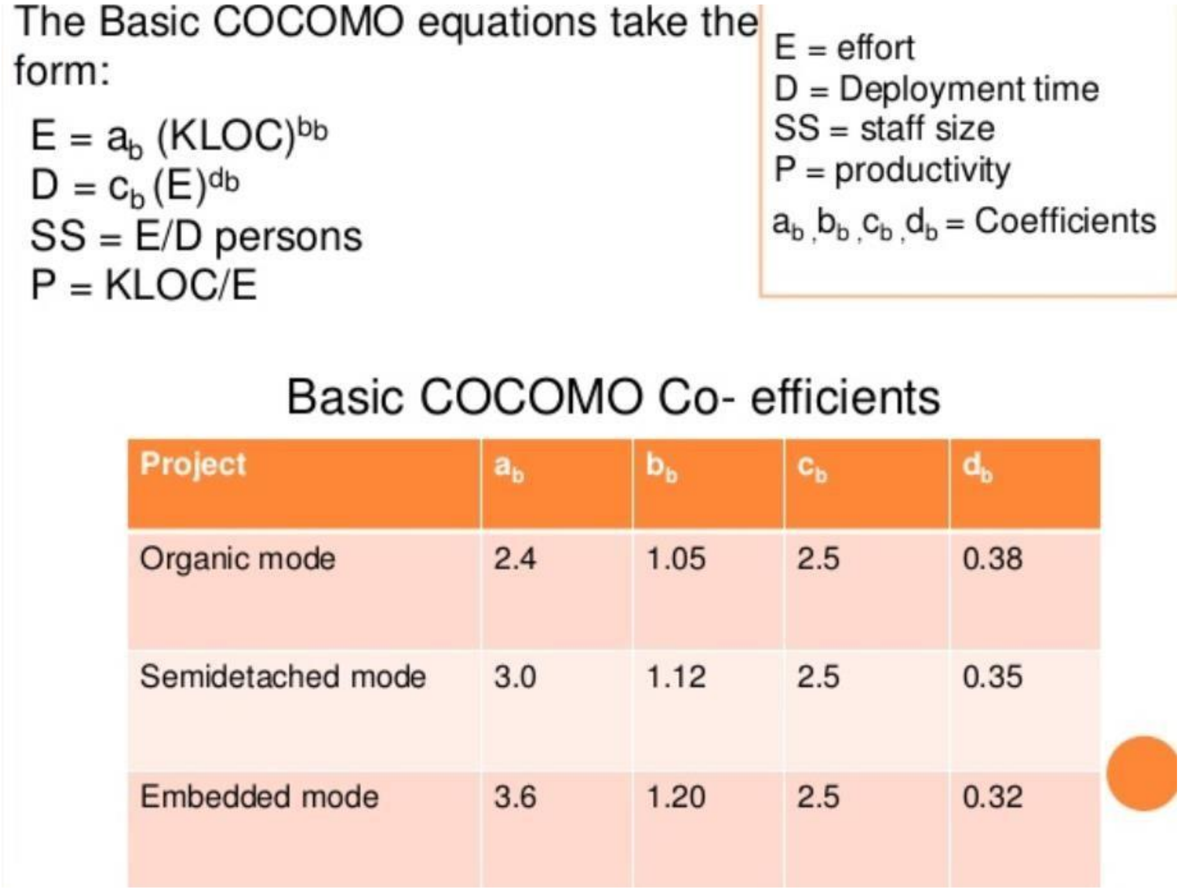
**Semi-detached** – A software project is said to be a Semi-detached type if the vital characteristics such as team-size, experience, knowledge of the various programming environment lie in between that of organic and embedded. The projects classified as Semi Detached are comparatively less familiar and difficult to develop compared to the organic ones and require more experience and better guidance and creativity. E.g.: Compilers or different Embedded Systems can be considered of Semi-Detached type.

**Embedded –** A software project with requiring the highest level of complexity, creativity, and experience requirement fall under this category. Such software requires a larger team size than the other two models and also the developers need to be sufficiently experienced and creative to develop such complex models.



## Comparison of three COCOMO modes

| Mode | Project Size | Nature of Project | Innovation | Deadline of the Project | Development Environment |
|---|---|---|---|---|---|
| Organic | Typically 2 – 50 KLOC | Small Size Projects, experienced developers. | Little | Not tight | Familiar And In house |
| Semi-Detached | Typically 50 – 300 KLOC | Medium size project, average previous experience on similar projects. | Medium | Medium | Medium |
| Embedded | Typically over 300 KLOC | Large projects, complex interfaces, very little previous experience. | Significant | Tight | Complex Hardware / Customer interfaces required |



The Basic COCOMO equations take the form:

$E = a_b\,(KLOC)^{bb}$

$D = c_b\,(E)^{db}$

$SS = E/D$ persons

$P = KLOC/E$

E = effort
D = Deployment time
SS = staff size
P = productivity
$a_b\ ,b_b\ ,c_b\ ,d_b$ = Coefficients

## Basic COCOMO Co- efficients

| Project | $a_b$ | $b_b$ | $c_b$ | $d_b$ |
|---|---|---|---|---|
| Organic mode | 2.4 | 1.05 | 2.5 | 0.38 |
| Semidetached mode | 3.0 | 1.12 | 2.5 | 0.35 |
| Embedded mode | 3.6 | 1.20 | 2.5 | 0.32 |

Based on KLOC and nature of project, Development of a Mobile Application for Relief and Resource Management in a Post Disaster Scenario is Organic project.

Android App: 3 KLOC

Effort: 2.4(3) ^1.05 = 7.60656 PM

Development Time: 2.5(7.60656) ^0.38 = 5.4 Months(approx.)

Staff Size: 1

Productivity: 3/7.60656 = 0.394

Estimated Salary Per Person: 3000

Cost of the product: 5.4*3,000*1 = 16200

# 13 Conclusion and future work

So, This the overview of the whole project. The main moto of the application is to generate a hassled free simplified system for quarter holders and solved their problem easily.

The Future Scope of this project are---

- Generate graphical report for admin colony wise, moderator wise, rating wise
- Change App Language
- Extend the Complaint Category for office electric complaint
- Add new Category like civil, water.
- IOS app. So that the system become platform independent.

# 14 Bibliography

- Merkel, D. (2010). *Expert PHP 5 tools*. Birmingham, UK: Packt.

- Mednieks, Z. (2012). *Programming Android*. Sebastopol, California: O'Reilly.

- Android Developers. (2019). *Android Developers*. [online] Available at: https://developer.android.com [Accessed 19 May 2019].

- W3schools.com. (2019). *W3Schools Online Web Tutorials*. [online] Available at: https://www.w3schools.com/ [Accessed 2 May 2019].

- Stack Overflow. (2019). *Stack Overflow - Where Developers Learn, Share, & Build Careers*. [online] Available at: https://stackoverflow.com/ [Accessed 10 May 2019].

- *Android App Development Tutorials - AndroidHive*. [online] AndroidHive. Available at: https://www.androidhive.info/ [Accessed 12 May 2019].

- Php.net. (2019). *PHP: PHP Manual - Manual*. [online] Available at: https://www.php.net/manual/en/index.php [Accessed 19 Apr. 2019].

- Studytonight.com. (2019). *Studytonight - Best place to Learn Coding Online*. [online] Available at: https://www.studytonight.com/ [Accessed 14 May 2019].

- Draw.io. (2019). *Flowchart Maker & Online Diagram Software*. [online] Available at: https://www.draw.io/ [Accessed 15 May 2019].

- Lucidchart.com. (2019). [online] Available at: https://www.lucidchart.com [Accessed 19 May 2019].