PUBLIC COMPLAINT SORTING USING BLOCKCHAIN

A Main Project Report

submitted by

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to

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in partial fulfillment of the requirements for the award of the Degree

of

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Department of Computer Applications

MES College of Engineering
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DECLARATION

I undersigned hereby declare that the project report **PUBLIC COMPLAINT SORTING USING BLOCKCHAIN**, submitted for partial fulfillment of the requirements for the award of degree of Master of Computer Applications of the APJ Abdul Kalam Technological University, Kerala, is a bona fide work done by under the supervision of Dr.Geevar C Zacharias Assistant Professor,Department of Computer Applications. This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

Place: KUTTIPURAM

Date: 06/07/2022

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CERTIFICATE

This is to certify that the report entitled **Public Complaint Sorting Using Blockchain** is a bona fide record of the Main Project work carried out by ASWATHY V (MES20MCA-2012) submitted to the APJ Abdul Kalam Technological University, in partial fulfillment of the requirements for the award of the Master of Computer Applications, under my guidance and supervision. This report in any form has not been submitted to any other University or Institution for any purpose.

Internal Supervisor(s) External Supervisor(s)

Head Of The Department

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Abstract

Reporting any Civic or day to day life problems has no longer been an easy process for the citizens. They have to follow a long procedure and formalities to register their problems or to report such problems like street damages, garbage management problems (garbage bin over owing), Electricity problem, Water problem etc. in short citizens can post their problems which come under the surveillance of municipal. There is still no guarantee that the reported grievances would be resolved or addressed by the concerned municipal department authority.That is why most of the time complaints go unheard, unanswered and unresolved usually because peoples are very busy with their day to day work and they don't have time to report the complaints and to follow the time consuming process, citizens are not taking initiative to register problems. To make an easy reporting system for complaining procedure ,we are going to implement an machine learning online web application that will provide a platform for citizens to rise their voice against civic issues and report their problems with infrastructure in their city to relevant municipal department, So whenever people come across any civic issue in city infrastructure or any daily life disturbance they can share ,discuss and get resolved the problems by concerned departments authority by means of this online web portal. Citizens can share their ideas, suggestions with each other and they can also view the problems posted by other citizens.

Keywords : Blockchain,SVM,NLP

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Chapter 1

Introduction

1.1 Background

To improve Infrastructure and condition of our city and to make people take initiative to rise their voice against civic issues which they face into their daily life we are developing this system.Which will help to build a unity or strong bond within citizens. System is providing platform for citizens where they can report problems, share ideas and suggestions. It will be helpful to collect valuable source as feedback from citizens about progress improvement of city through the different posts or images posted by citizens. This is flexible and interactive interface for people to use application for register complaints and to share ideas, this system to provide flexible communication platform for citizens.

1.1.1 Motivation

Receiving a complaint is a great way to test how effective your complaint management process is, so “Citizen Connect” is a platform which is used to resolve various local issues by registering their complaint through this portal. It will help applicants to track their proposals and to do necessary compliance if any. After registering the complaint, users are able to see the status of their complaint whether it is done or pending. This platform is providing ‘smart’ solutions to make services better to citizens and try to handle civic problems. Also this platform can be used by the Corporation system to classify the complaints into particular departments based on the image provided by citizens. This can be the best platform for citizens as well

as corporation service providers. The connection between these two is more transparent and truthful.

1.2 Objective

This project is used to resolve problem in less time and to keep track on all process which will going on after registering particular complaints. Municipal authorities and users both will get notifications from each other. To develop this system, we use machine learning and image processing. System is providing platform for citizens where they can report problems, share ideas and suggestions. It will be helpful to collect valuable source as feedback from citizens about progress improvement of city through the different posts or images posted by citizens.

It will be helpful to resolve posted problems in limited time. The main purpose of the system to resolve problem in less time and to keep track on all process which will going on after registering particular complaints. Municipal authorities and users both will get notifications from each other.

1.3 Report Organization

The project report is divided into four sections. Section 2 describes literature survey. Section 3 describes the methodology used for implementing the project. Section 4 gives the results and discussions. Finally Section 5 gives the conclusion.

Chapter 2

Literature Survey

Towards Two-Tier Citizen Sensing, Citizen Sensing is a powerful paradigm involving citizens collectively participating in data collection. The pervasiveness of mobile devices has taken citizen sensing to unprecedented levels of adoption, as anyone with a phone can easily participate.

A delegated authorization solution for smart-city mobile, An increasingly popular scenario for Smart Cities is the one in which mobile apps attempt to access resources (e.g., open data about public transportation or egovernment services) made available by city authorities through the use of Application Programming Interfaces (APIs).There is a growing awareness of the benefits of using APIs to foster civic engagement through a more efficient and personalized delivery of government services, and as an enabler of a new wave of innovation contributing to a more automated and sustainable city functioning.

Tools enabling online contributions by older adults In this paper they implemented tool for contribution from older adults citizens.The results are of particular importance for the development of technology that aims at reducing social isolation for people with less chances to interact, such as older adults. Service-learning project for computing students: Creating a mobile app for a non-profit agency, Over the last 15 years the world as seen a surge in users owning smartphones and electronic devices. People today have smartphones that have the computational capabilities of computers from more than 45 years ago. With the growing populous under this information age, individuals have access to so much data. It is a fantastic time to spread ideas as anyone can reach anybody else over the internet almost instantaneously. It

is not too di cult to get into contact with anyone even if they are on the other side of the globe. This is the power of the 21st century and which has generated a team-oriented society.

World Social Welfare Circumstances: Social Welfare and Elderly Care System in the World, and Civic Technology Chisako Yamashita This paper illustrates social welfare and elderly care system and issues in three countries, Japan, Norway,and the United States, and discuss how to solve social problems by using civic technologies.

Citizen emotion analysis in Smart City Applications in Smart City context are improving the quality of life of citizens through several technological interactions. These interactions can be also used to relate the citizen's emotions to city areas. Thus, the main objective of this work is to present a smart phone application.

Social Media Based App Organizing Daily Events Since the primary attraction for IT developers is to build applications by reusing the existing resources, especially using mobile platforms as it is changing the way software applications are developed and accessed, the platform presented in this paper aims to keep users up to date for all of their daily events. The idea was to develop a new contemporary application for the mobile platform that will be able to integrate several social media APIs. While selecting sources and notification time, the proposed implemented platform will be able to generate a to do list of the daily events, offering high flexibility and portability.

Gram Sandesh Transmission.A Web Based Information System for Farmers in This the experimentation done in order to flourish a low price and impressionable information system to provide useful information to farmers in a timely manner so as to assist their decision making process. The primary reason behind development of this system was to automate the flow of information to farmers since agriculture is the backbone of our country. Gram Sandesh Transmission is a web disciplined system which targets all sort of audience by means of its ios application (for iphone users),android application(for android users), messaging server(for basic mobile handset) and gsm based.

Chapter 3

Methodology

3.1 Introduction

To improve Infrastructure and condition of our city and to make people take initiative to rise their voice against civic issues which they face into their daily life we are developing this system. Which will help to build a unity or strong bond within citizens. System is providing platform for citizens where they can report problems, share ideas and suggestions. It will be helpful to collect valuable source as feedback from citizens about progress improvement of city through the different posts or images posted by citizens. This is flexible and interactive interface for people to use application for register complaints and to share ideas, this system to provide flexible communication platform for citizens. It will be helpful to resolve posted problems in limited time. The main purpose of the system to resolve problem in less time and to keep track on all process which will going on after registering particular complaints.Municipal authorities and users both will get notifications from each other. System is using the hierarchy of different level of authority like user level then departments and their authorities and finally higher authority, this will be more effective to keep the track on each and every work related to civic issues posted by citizens. To develop this system we use machine leaning and image processing.

3.2 Modules

Module 1 : **Admin**

- Admin can view users.
- They can add and manage department.
- They can add and manage officers.
- They can view feedback given by the users.
- They can view department wise complaints given by they can't reply to the complaints.
- Taking actions against officers those who don't reply to the complaints.
- View officer rating.

Module 2 : **Officer**

- The officer will be added directly by the admin.
- The officer who can view the complaints given by the users and can reply for the complaints.
- Officer can change their password also.
- Update info to block chain.
- View officer rating.

Module 3 : **User**

- Users can register by themselves.
- They can send complaints and view the respective department.
- Send feedback.
- View complaints status.
- View officer rating.

3.3 Developing Environment

SOFTWARE REQUIREMENTS

- Operating System : WINDOWS 10
- Front End : HTML,CSS,JAVASCRIPT
- IDE Used : Jetbrains Pycharm,Android Studio
- Technology Used : Python Java
- Framework Used : Flask

3.4 Work Flow

1 . **Image Processing**

The user complaint is given as an image. Image processing is used to identify which type of complaint it is. The images we get will be converted to resized gray scale. That image will be given as input to the algorithm CNN for training.

2 . **CNN Algorithm**

There is a dataset inside cnn. There are images in that dataset. The image is kept as a different class.In order to train the image obtained through image processing, it will be processed through cnn layer and corresponding features will be extracted. The obtained images will be made into a model. Based on that model, the image will be predicted. The predicted image will be moved to the corresponding department.

3 . **Blockchain**

Block chain is a concept to store information securely. No one else can edit or hack the actions and complaints we give. Block chain is used for that. After entering data into it, editing is not possible. The information we give is saved as blocks. Each of those blocks. It will be connected as an old block.Then it doesn't matter if you get the values of only one block.Information cannot be hacked. Ganesh command line interface is used to create block chain. It is used to create block chain which is private. A smart contract

is required to pass data into that block chain. To create this smart contract truffle is used. This truffle block chain creates a contract inside. .The data will be passed into the blockchain through that smart contract.

- Blockchain is a record-keeping technology designed to make it impossible to hack the system or forge the data stored on it,thereby making it secure and immutable.The main advantages of using blockchain are decentralization,security,transparency,and immutability

4 . **Truffle**

Truffle is the most developing tooling for Ethereum programmers . Easily deploy smart contracts and communicate with their underlying state without heavy client side pro gramming . An especially useful library for the testing and iteration of Ethereum smart contracts . It is used to create configuration files and complete block chain . First install node to create files for block chain automatically . Through this create contract that contain sol files . Sol files contain the information that we want to pass into the block chain . This concept is called Smart Contracting.

5 . **Ganache** Ganache is a high-end development tool used to run your own local blockchain for both Ethereum and Corda dApp development.It act as a server to see the info that pass to the blockchain.

6 . **Opinion Mining**

This is a popular way for organizations to determine and categorize opinions about a product , service ,or idea . It involves the use of data mining . In a way that identifies opinions about each department or staff become data mining included opinion mining.

- A section has been created where users give feedback to the staff.After reading the feedback given by the users, he has to decide whether it is good/bad. It is easy to make a decision about them. To make this decision, opinion mining is used. The feedback given by the users should be converted into rating. It is converted into rating based on emotion. There is a dataset for emotion. Each word has a dataset with its emotion. The

dataset is accessed using the NLTK package. . .It will identify how positive or negative it is.Once this is identified, feedback can be generated corresponding to the feedback.

7 . **Sentiment Analysis**

Sentiment analysis is used to determine whether a given text contains negative , positive or neutral emotions . It's a form of text analytics that uses natural language processing (NLP) and machine learning . Sentiment analysis also known as "Opinion mining" or "Emotion artificial intelligence" .

- Corresponding feedback is given to each staff. After detecting that the content of the feedback is positive or negative, the emotion will be generated for them. There is a dataset in NLTK. The dataset is available to identify as positive or negative. Train that dataset and predict whether this feedback is positive or negative. We will preprocess the text that comes to us. We will divide the test into word by word. The connective words (is,was)will be removed and the root words. It will be identified. The content of those words will be identified as positive or negative and the corresponding rate will be created.

3.5 User Story

The project was developed using Agile Methodology.The project has two users.First one is admin and second is officer and third is user.The user story of system is given in 3:1.

User Story	As a type of User	I want to	So that I can
1	Admin	View Users	Admin can view users
2	Admin	add and department	manage department
3	Admin	add and manage officers	manage officers
4	Admin	View feedback	view feedback given by the users
5	Admin	View department wise complaints	view department wise complaints
6	Admin	Action against officers	Taking action against complaints
7	Admin	Rating	View officer rating
8	Officer	Add admin	The officer will be added admin
9	Officer	Officer reply the complaints	The officer reply the complaints
10	Officer	Change password	Officer can change password
11	Officer	Blockchain	Update info to blockchain
12	Officer	Rating	View officer rating
13	User	Registration	Users can register by themselves
14	User	Send complaints,view the department	send complaint,view the department
15	User	Status	View complaint status
16	User	Rating	View officer rating

Table 3.1: User Story

3.6 Project Plan

A project plan that has a series of tasks laid out for the entire project, listing task durations,responsibility assignments, and dependencies. Plans are developed in this manner based on the assumption that the Project Manager, hopefully along with the team, can predict up front everything that will need to happen in the project, how long it will take, and who will be able to do it. Project paln is given in Table 3.2

User Story ID	Task Name	Start Date	End Date	Hours	Status
8	Sprint 1	20/04/22	01/05/22	18	Completed
9	Sprint 1	04/05/22	15/05/22	18	Completed
10	Sprint 2	17/05/22	28/05/22	11	Completed
11	Sprint 2	29/05/22	1/06/22	11	Completed
12	Sprint 3	02/06/22	05/06/22	5	Completed
13	Sprint 4	06/06/22	20/06/22	11	Completed
14	Sprint 5	20/06/22	24/06/22	8	Completed
15	Sprint 5	25/06/22	29/06/22	8	Completed

Table 3.2: Project Plan

3.7 Product Backlog

A product backlog is a list of the new features, changes to existing features, bug fixes, infrastructure changes or other activities that a team may deliver in order to achieve a specific outcome.The product backlog is the single authoritative source for things that a team works on. That means that nothing gets done that isn't on the product backlog. Conversely, the presence of a product backlog item on a product backlog does not guarantee that it will be delivered. It represents an option the team has for delivering a specific outcome rather than a commitment.It should be cheap and fast to add a product backlog item to the product backlog, and it should be equally as easy to remove a product backlog item that does not result in direct progress to achieving the desired outcome or enable progress toward the outcome. The Scrum Product Backlog is simply a list of all things that needs to be done within the project. It replaces the

traditional requirements specification artifacts. These items can have a technical nature or can be user-centric e.g. in the form of user stories. The product backlog of the system is given in Table 3.3

User Story Id	**Priority ⟨High-Medium/Low ⟩**	**Size(Hours)**	**Sprint ⟨⟩**	**Status⟨Planned/In progress/Completed⟩**	**Release Date**	**Release Goal**
1	Medium	8	1	completed	1/05/2022	staff feedback table desgning
2	High	10	1	completed	15/05/2022	staff feedback form designing
3	High	6	2	completed	28/05/2022	Blockchain management,create blockchain,truffle management
4	Medium	5	2	completed	01/6/2022	Contract creation,blockchain implementation
5	High	5	3	completed	05/06/2022	Add and manage blocks to blockchain,node module add to block

Table 3.3: Product Backlog

3.8 Sprint Backlog Plan

Backlog Item	Status And Completion Date	Original Estimation in Hours	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
UserStory1,2,3			hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
Form Designing	1/05/2022	8	1	1	1	2	0	1	1	0	0	1	0	0	0	0
Coding	15/05/2022	10	1	3	0	1	1	0	0	3	0	1	0	0	0	0
UserStory 4,5																
Block chain management	28/05/2022	6	1	1	1	1	2	0	0	0	0	0	0	0	0	0
Blockchain implementation	1/06/2022	5	0	4	1	0	0	0	0	0	0	0	0	0	0	0
UserStory 6,7																
Add and manage blocks	5/06/2022	3	0	0	0	0	1	1	1	0	0	0	0	0	0	0
Total		32	3	9	3	4	4	2	2	3	0	2	2	0	0	0

Table 3.4: Sprint BackLog

3.9 Actual Sprint

Actual sprint backlog is what adequate sprint planning is actually done by project team there may or may not be difference in planned sprint backlog. The project was developed using Agile development model. the entire project was divided into four sprints.In the first sprint Table design,form design and basic coding was developed.In the second sprint Data collection and data processing are completed.In third sprint prediction and location based alert was completed.In fourth sprint testing data and output generation was developed.The detailed sprint is given below.

Backlog Item	**Status And Completion Date**	**Original Estimation in Hours**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**	**Day 9**	**Day 10**	**Day 11**	**Day 12**	**Day 13**	**Day 14**
UserStory1,2,3			hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs	hrs
Form Designing	1/05/2022	9	1	1	1	2	0	1	1	0	0	1	0	0	0	0
Coding	15/05/2022	10	1	3	0	1	1	0	0	3	0	1	0	0	0	0
UserStory 4,5																
Block chain management	28/05/2022	6	1	1	1	1	2	0	0	0	0	0	0	0	0	0
Blockchain implementation	1/06/2022	6	0	4	1	0	0	0	0	0	0	0	0	0	0	0
UserStory 6,7																
Add and manage blocks	5/06/2022	4	0	0	0	0	1	1	1	0	0	0	0	0	0	0
Total		35	3	9	3	4	4	2	2	3	0	2	2	0	0	0

Table 3.5: Actual Sprint

Chapter 4

Results and Discussions

This system focuses on flexible communication between citizen to citizen and citizen to respective authority. An implementation of web application in which there will be the flexible communication so that each and every citizen can raise their voice against various civic issues with the least manual interference. This application gives one to many and many to many communication bond between people. Through this website citizens can register their civic complaints in very flexible way within less time. All the issue which is been register to the web portal will be resolved within date and timing. If citizen wants to complaint regarding civic issue then he/she has to login to their account and then he/she can register the complaints but if particular citizen is new then they has to register first with some personal details. After registration he/she can login to the web portal by Aadhar card no which is unique identification and password. When any citizen posts complaints regarding any civic issue than that complaint goes to the particular department using machine learning and image processing then higher authority of that particular department can view all the complaint.

When citizen register the particular issue at the same time system will generate one date behalf of user that date will nothing but the difference of 10 days from date of register issue. It will set as deadline for department authority to solve the issue in given time. As the complaints register all the citizens can give votes to it and complaints which are having highest priority will be resolved first and the complaint which is having lowest priority will be resolve but it will take some time to resolve. If in the case complaint is not resolved within the date and timing given by citizen as well as given by the higher authority of the particular department

then such a complaints will be displayed publically and these complaints will go automatically to the main authority and further action will be taken by main authority. So ultimately by this unity between the citizens will be increase the major to minor civic issue will be resolved within the time and each and every citizen can raise their voice against the civic issue with the least manual interference and within less time.

Chapter 5

Conclusions

In this project, an effective implementation for Image Processing, blockchain and opinion mining concept is used for solving Citizens problem. This project presents a conceptual architecture for a versatile, flexible and cost efficient for monitoring the citizens issues. We propose one application using machine learning and image processing in which citizens can register or post their civic issues online and they can also have assure that their problem will be resolved within the timing given by them or by authority.

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Appendix

5.1 Source Code

```
import pymysql

from flask import *
from datetime import datetime
from src.newcnn import predictcnn
from src.sample import sent
from werkzeug.utils import secure_filename

app = Flask(__name__)



con=pymysql.connect(host='localhost',port=3306,user='root',password='',db='public complaint')
cmd=con.cursor()
app.secret_key="qwer"

import json
from web3 import Web3, HTTPProvider

blockchain_address = 'HTTP://127.0.0.1:7545'
# Client instance to interact with the blockchain
web3 = Web3(HTTPProvider(blockchain_address))
# Set the default account (so we don't need to set the "from" for every transaction call)
web3.eth.defaultAccount = web3.eth.accounts[0]

compiled_contract_path = r'D:\PCS\public complaint\public complaint\src\node_modules\.bin\build\contracts\publicblock.json'
# Deployed contract address (see `migrate` command output: `contract address`)
deployed_contract_address = '0x959962bFC92dAc1614bC5E13fE620270733036BA'




@app.route('/login',methods=['post'])
def login():
    username=request.form['uname']
    password=request.form['psd']
    cmd.execute("select * from login where Username='"+ username +"' and Password='" + password + "' AND `type`='user'")
    S = cmd.fetchone()
    print(S)
    if S is None:
        return jsonify({'task':"invalid"})
    else:
        return jsonify({'task':"success",'id':str(S[0])})
```

```
@app.route('/register',methods=['post'])
def register():
    try:
        con = pymysql.connect(host='localhost', port=3306, user='root', password='', db='public complaint')
        cmd = con.cursor()
        print(request.form)
        fname=request.form['fname']
        lname=request.form['lname']
        dob=request.form['dob']
        gender=request.form['gender']
        place=request.form['place']
        post=request.form['post']
        pin=request.form['pin']
        phone=request.form['phone']
        email=request.form['email']
        aadharno=request.form['aadharno']
        username=request.form['username']
        password=request.form['password']
        cmd.execute("insert into login values(null, '" + username + "','" + password + "','user')")
        id = con.insert_id()
        cmd.execute("insert into user values(null,'" + str(
            id) + "','" + fname + "','" + lname + "','" + dob + "','" + gender + "','" + place + "','" + post + "','" + pin +
                "','" + phone + "','" + email + "','" + aadharno + "')")
        con.commit()
        return jsonify({'task': "success"})
    except Exception as e:
        return jsonify({'task': "already exist"})
@app.route('/complaint',methods=['post'])
def complaint():
    lid=request.form['lid']
    print(lid)
    lati=request.form['lattitude']
    longi=request.form['longitude']
    complaint=request.files['files']
    fname=secure_filename(complaint.filename)
    print(fname)
    # fname=complaint.secure_filename(complaint.filename)

    complaint.save(r'D:\PCS\public complaint\public complaint\src\static\complaints\\'+fname)
    # res=predict('D:\\public_complaint\\public complaint\\public complaint\\src\\static\\complaints\\'+fname)
    # res=detect_dept('D:\\public_complaint\\public complaint\\public complaint\\src\\static\\complaints\\'+fname)
    res = predictcnn(r'D:\PCS\public complaint\public complaint\src\static\complaints\\' + fname)
    print("res",res)
    dept="0"
    if res==0:
        dept="1"
    elif res==1:
        dept="3"
    elif res==2:
        dept="5"
    elif res==3:
        dept="0"
    elif res==4:
        dept="4"
    elif res==5:
        dept="2"

    if dept!="0":
        print("ok")
```

```
        cmd.execute("insert into complaint
              values(null,'"+lid+"','"+dept+"',curdate(),'"+fname+"','pending','"+lati+"','"+longi+"')")
        id = con.insert_id()
        con.commit()

        with open(compiled_contract_path) as file:
            contract_json = json.load(file) # load contract info as JSON
            contract_abi = contract_json['abi'] # fetch contract's abi - necessary to call its functions
            date = datetime.now().strftime("%Y-%m-%d")
            contract = web3.eth.contract(address=deployed_contract_address, abi=contract_abi)
            blocknumber = web3.eth.get_block_number()
            message2 = contract.functions.report_info(blocknumber + 1, int(id), fname,'pending', date).transact()
            print(message2)

        return jsonify({'task': "success"})
    else:
        print("not")
        return jsonify({'task': "not"})


@app.route('/feedback',methods=['post'])
def feedback():
    lid=request.form['lid']
    feedback=request.form['feedback']
    cmd.execute("insert into feedback values(null,'" + lid + "',curdate(),'" + feedback + "')")
    con.commit()
    return jsonify({'task': "success"})

@app.route('/stafffeedback',methods=['post'])
def stafffeedback():
    lid=request.form['lid']
    sid=request.form['sid']
    stafffeedback=request.form['feedback']
    res=sent(stafffeedback)
    cmd.execute("insert into staff_feedback values(null,'" + lid + "','"+sid + "
          ','"+stafffeedback+"',curdate(),'"+str(res)+"')")
    con.commit()
    return jsonify({'task': "success"})


@app.route ('/viewreply',methods=['post'])
def viewreply():
    login_id = request.form['lid']
    print(login_id)
    cmd.execute("SELECT `complaint`.*,`department`.* FROM `complaint` JOIN `department` ON
          `department`.`dpid`=`complaint`.`dp id` WHERE `complaint`.`lid`='"+str(login_id)+"' ")
    row_headers = [x[0] for x in cmd.description]
    results = cmd.fetchall()
    print(login_id)
    json_data = []
    for result in results:
        json_data.append(dict(zip(row_headers, result)))
    con.commit()
    print(json_data)
    return jsonify(json_data)
```

5.2 Database Design

Attribute Name	Datatype	Width	Description
ID	Integer	11	Primary Key
complaint	Varchar	50	Unique
date	date		
replay	varchar	50	
lid	integer	10	

Table A.1: Complaint

Attribute Name	Datatype	length	Description
id	Integer	11	Primary key
feedback	varchar	50	unique
date	date		
uid	Integer	11	

Table A.2: Feedback

Attribute Name	Datatype	length	Description
id	Integer	11	Primary key
username	varchar	50	unique
password	varchar	50	
type	varchar	20	

Table A.3: Login

Attribute Name	Datatype	length	Description
id	Integer	11	Primary key
notification	varchar	50	unique
date	date		

Table A.4: Notification

Attribute Name	Datatype	length	Description
id	Integer	11	Primary key
lid	Integer	50	unique
fname	varchar		
lname	varchar	11	
dob	date	50	
gender	varchar		
position	varchar		
place	varchar	11	
phone	bigint	50	
email	varchar		
Adhar number	Integer	11	

Table A.5: Officers

Attribute Name	Datatype	length	Description
id	Integer	11	Primary key
username	varchar	50	unique
place	varchar	50	
post	varchar	30	
pin	Integer	10	
phone no	Integer	10	
email	varchar	30	
lid	Integer	11	

Table A.6: User

Attribute Name	Datatype	length	Description
id	Integer	11	Primary key
officerid	Integer	11	unique
works	varchar	40	
date	date		
status	varchar	40	

Table A.7: Work

Attribute Name	Datatype	length	Description
id	Integer	11	Primary key
uid	Integer	11	
staffid	Integer	11	
feedback	varchar	50	unique
date	date		
rating	float		

Table A.8: Staff Feedback

Attribute Name	Datatype	Length	Description
dpid	Integer	11	Primary Ket
name	Varchar	50	

Table A.9: Department

5.3 DaTaflow Diagram

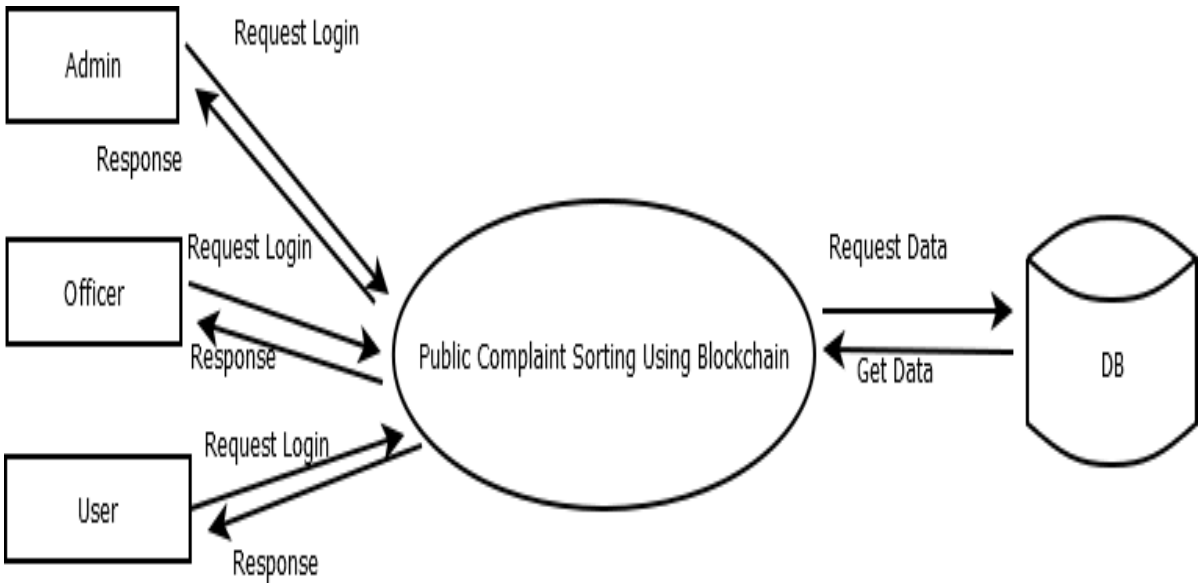

Figure A.1: LEVEL O

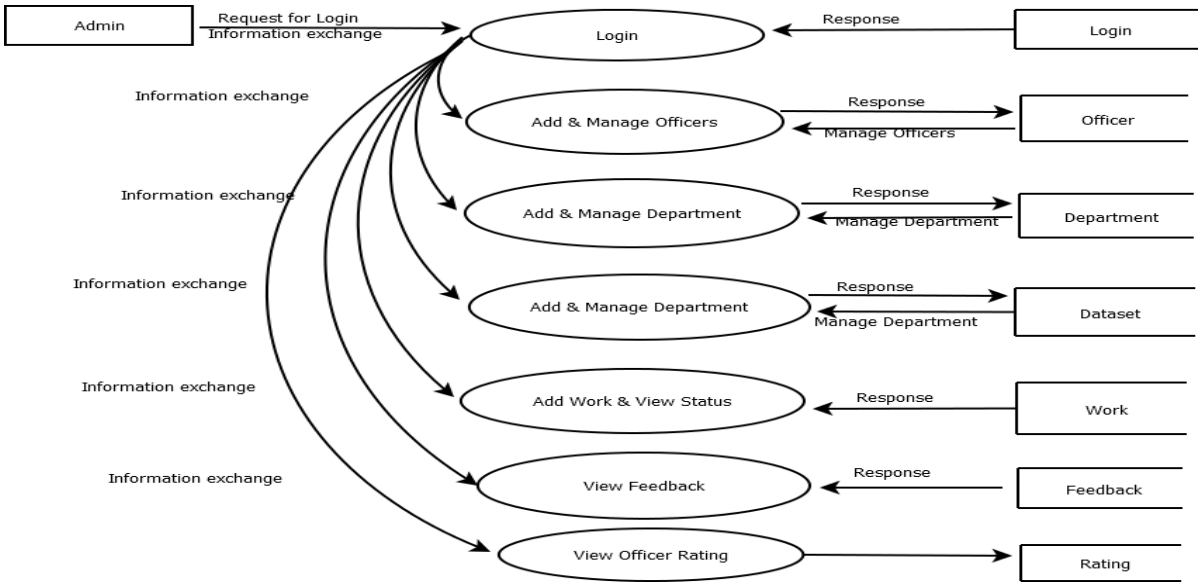

Figure A.2: LEVEL 1.0

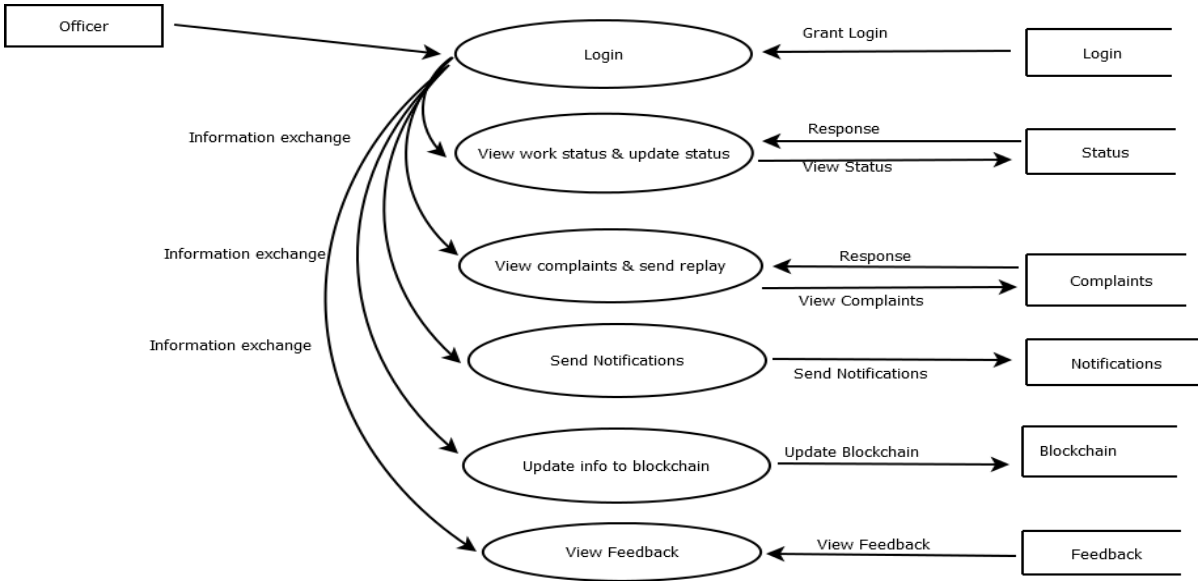

Figure A.3: LEVEL 1.1

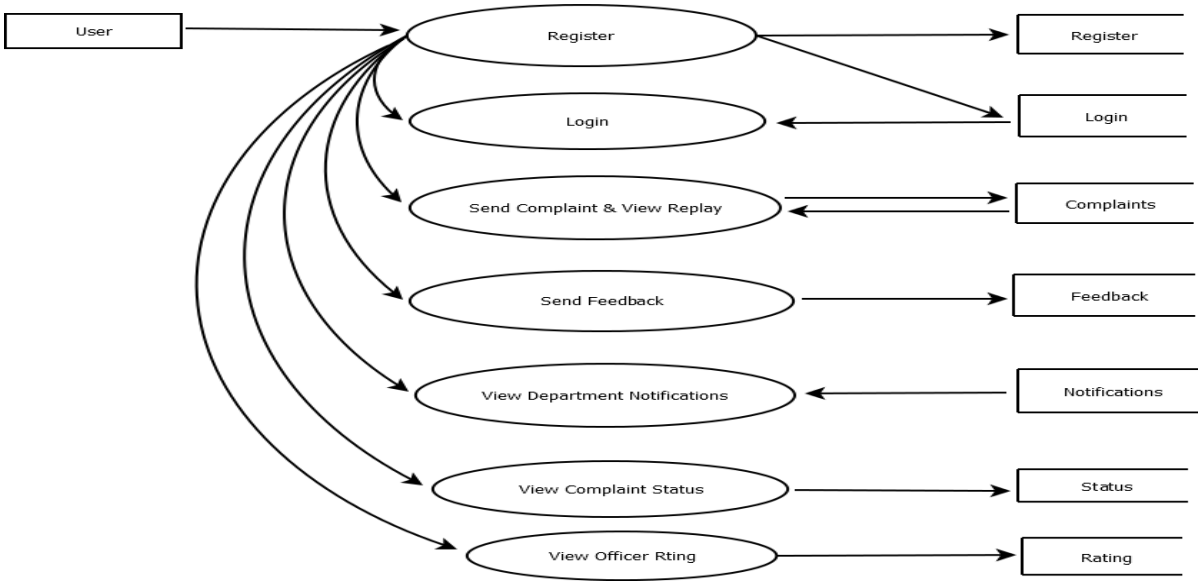

Figure A.4: LEVEL 1.2

5.4 User Interface

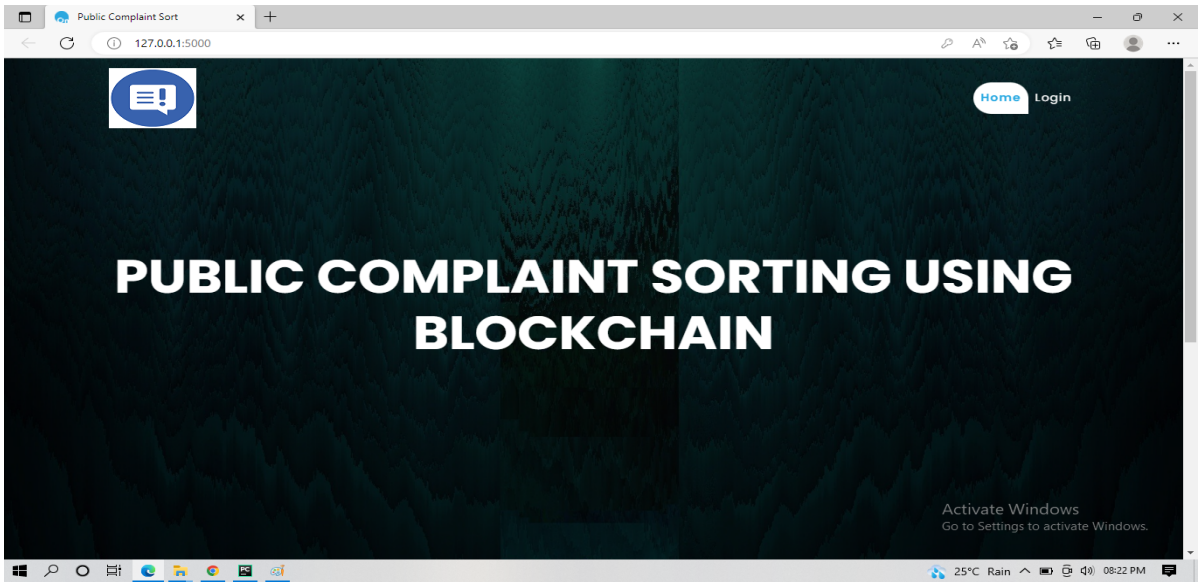

Figure A.5: Main Page

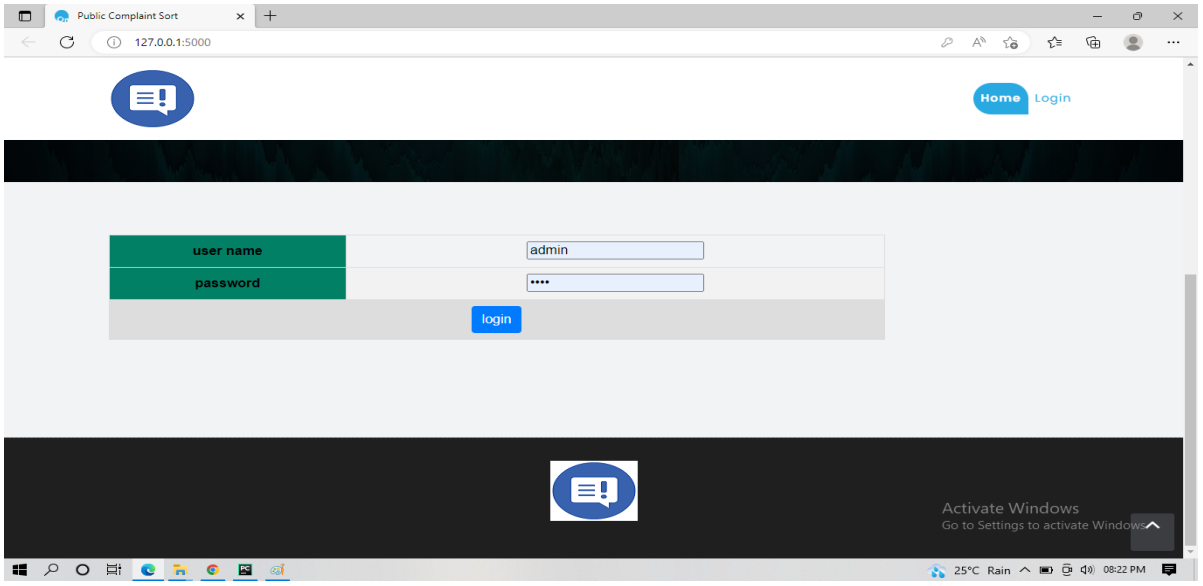

Figure A.6: Login Page

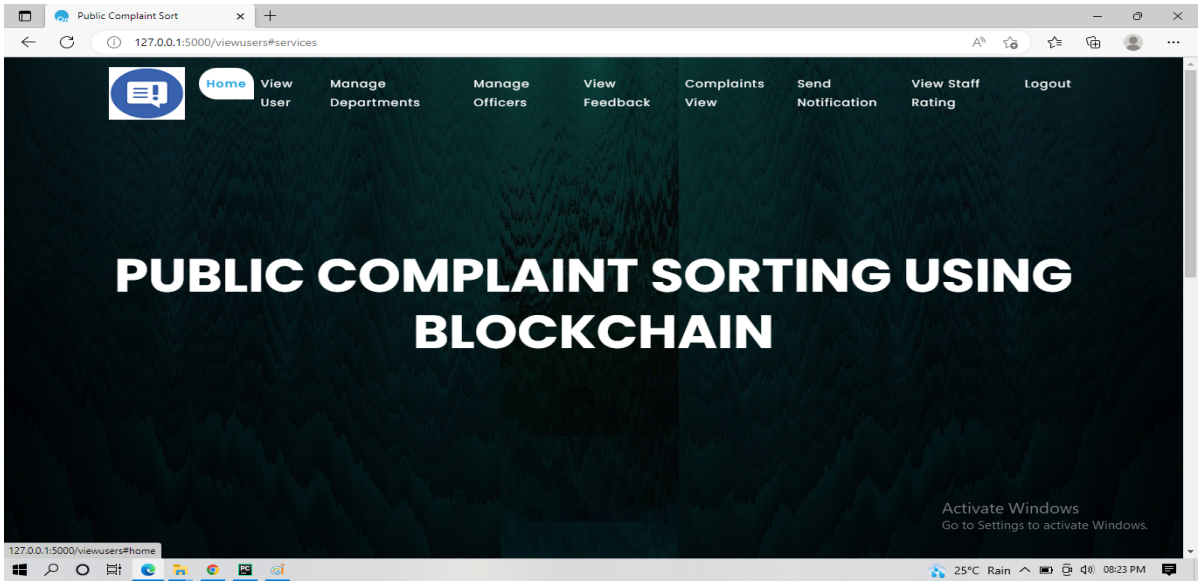

Figure A.7: Home Page

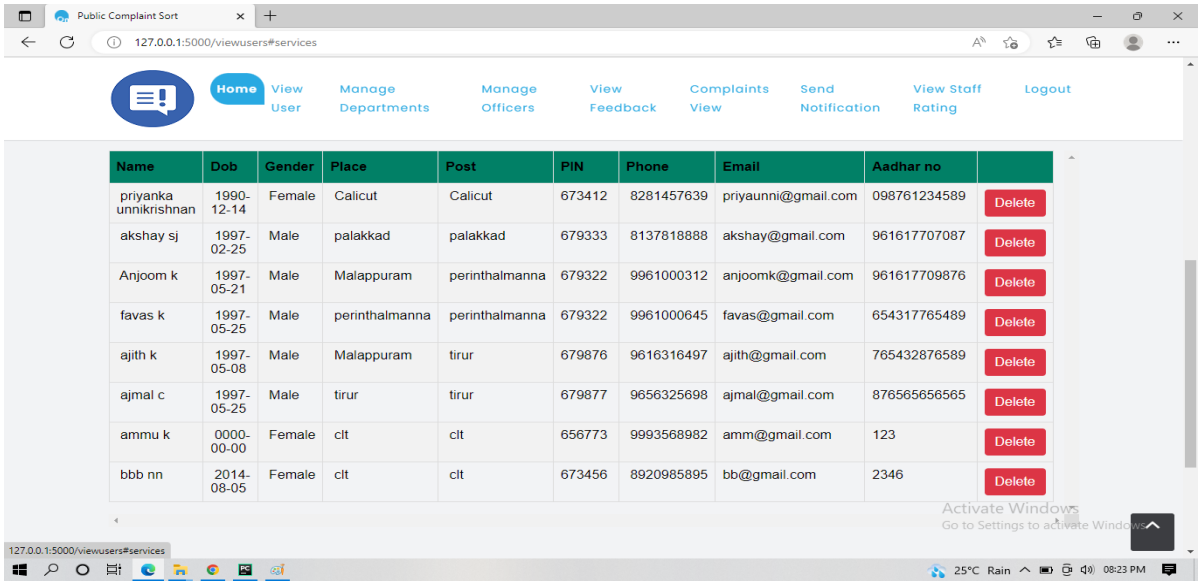

Figure A.8: View User Page

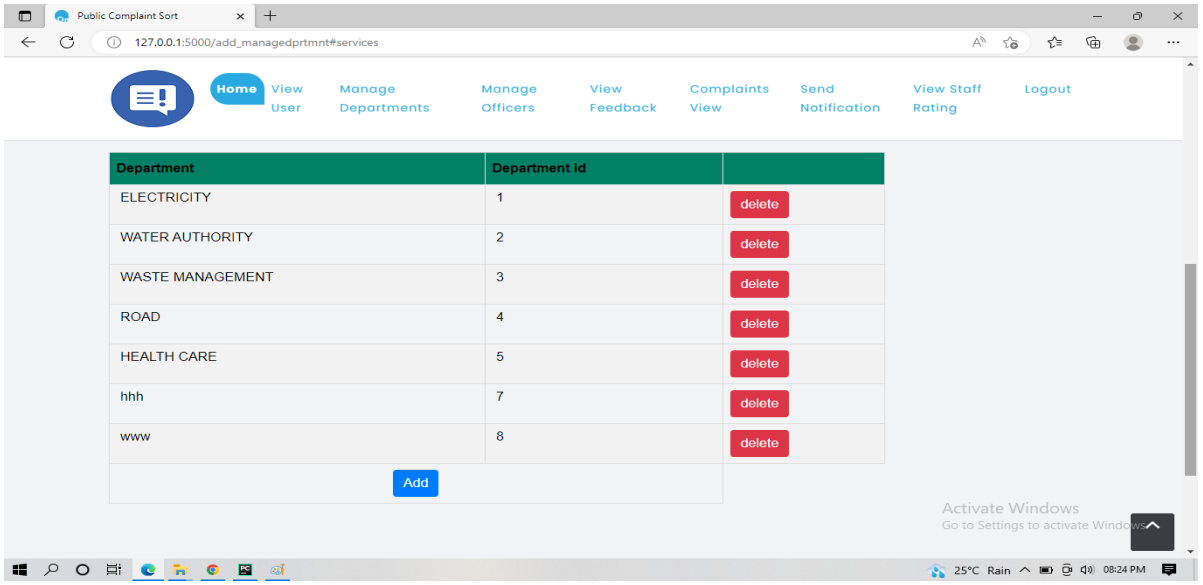

Figure A.9: Manage Departments

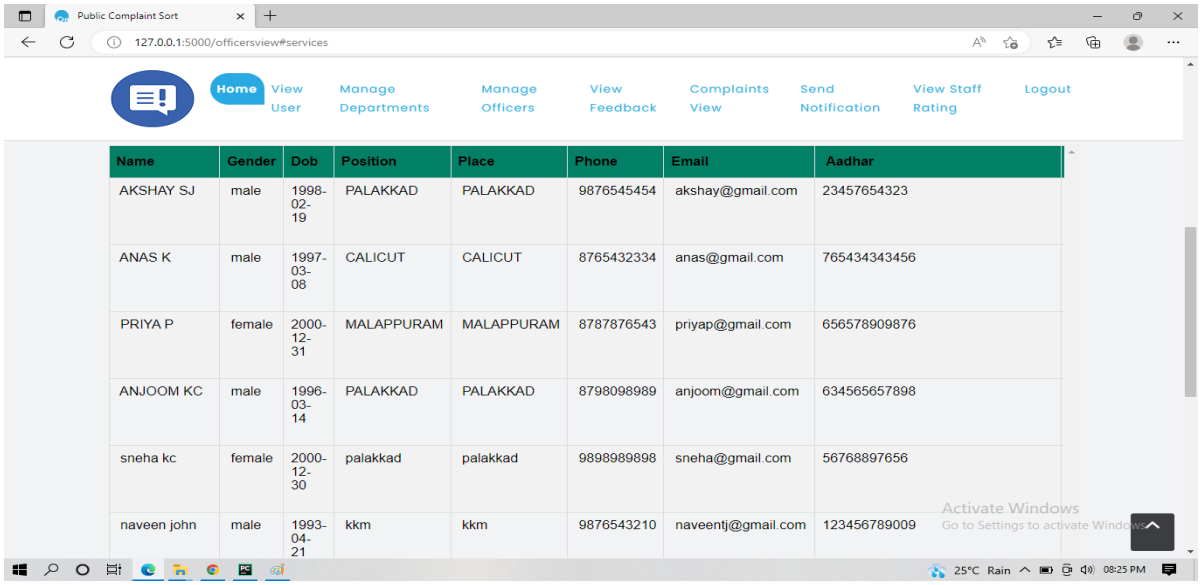

Figure A.10: Manage Officers

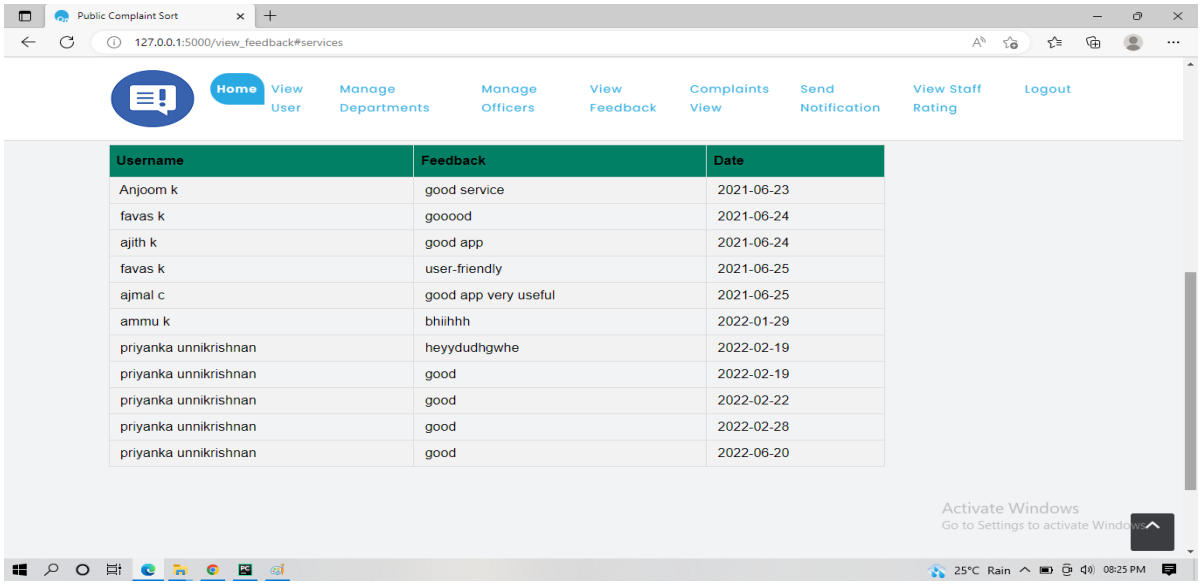

Figure A.11: View Feedback

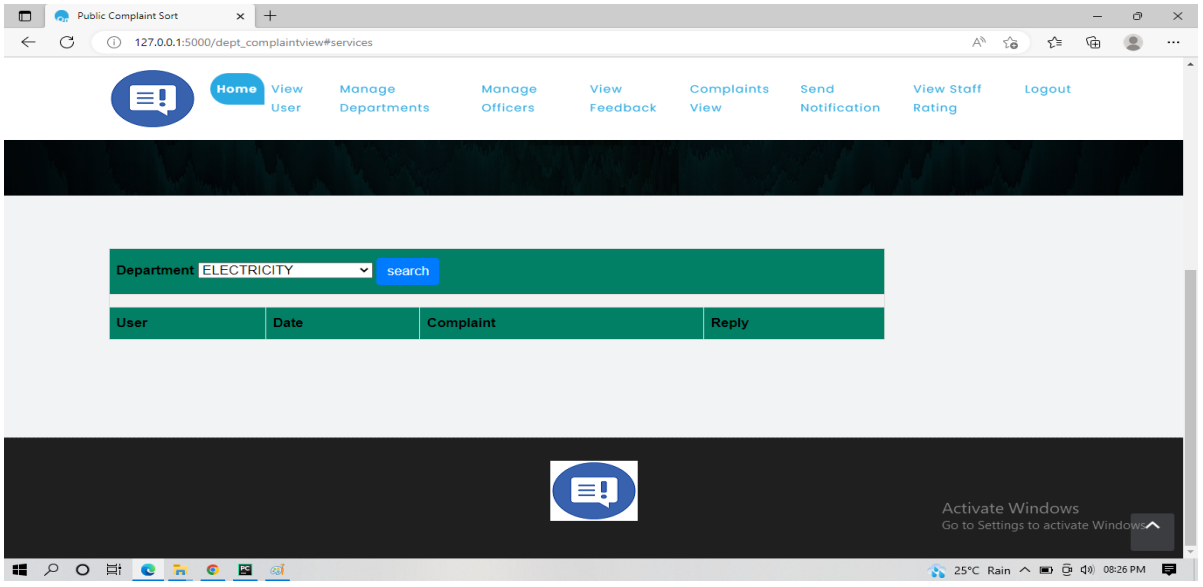

Figure A.12: View Complaint

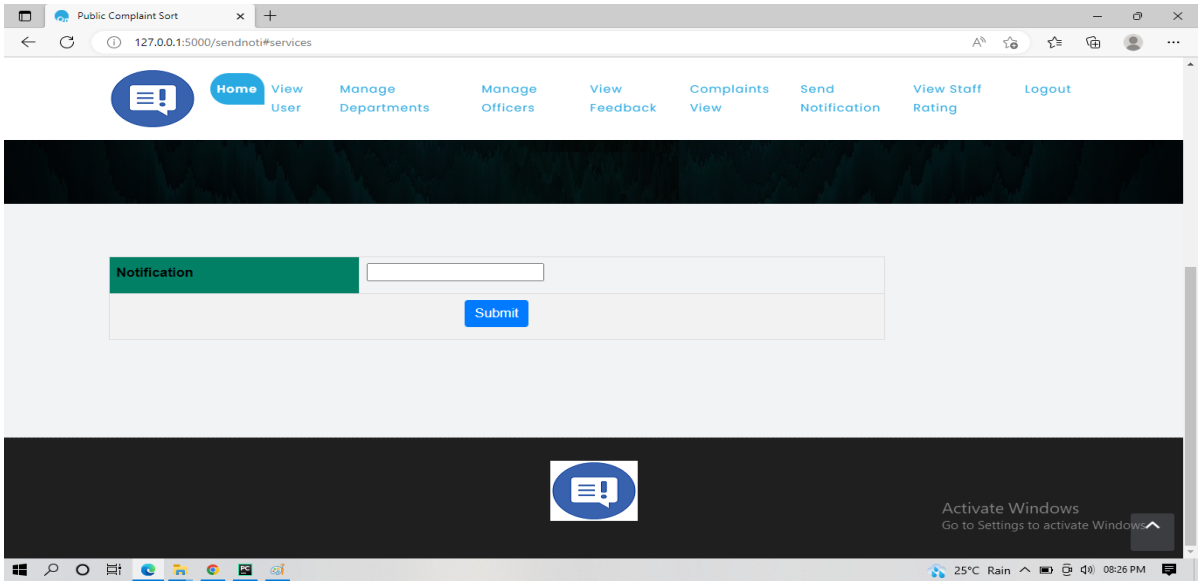

Figure A.13: Send Notification

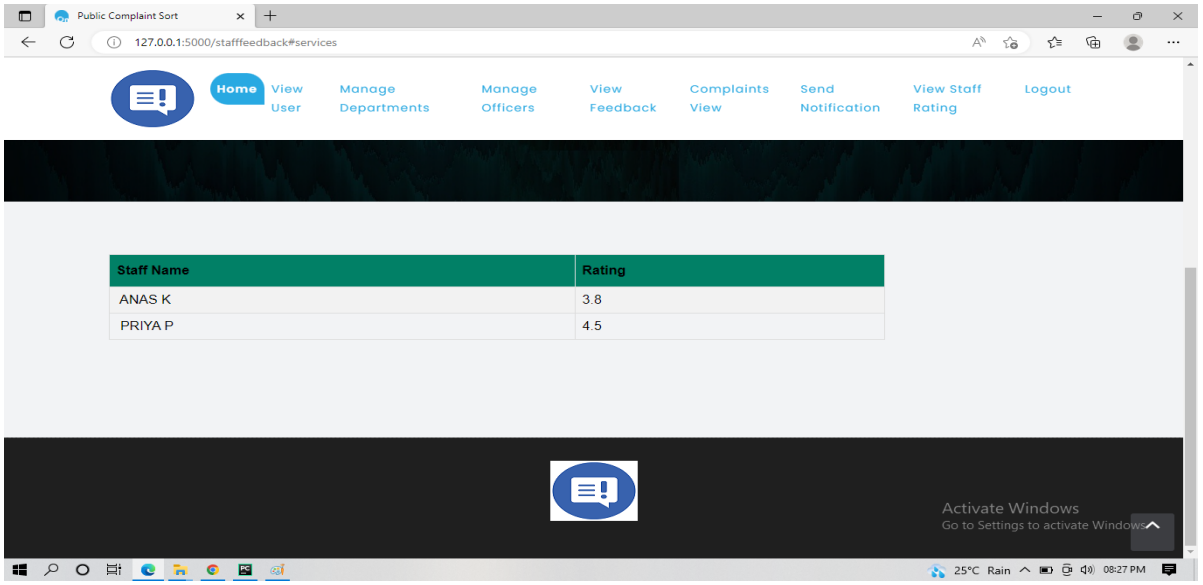

Figure A.14: Staff Rating

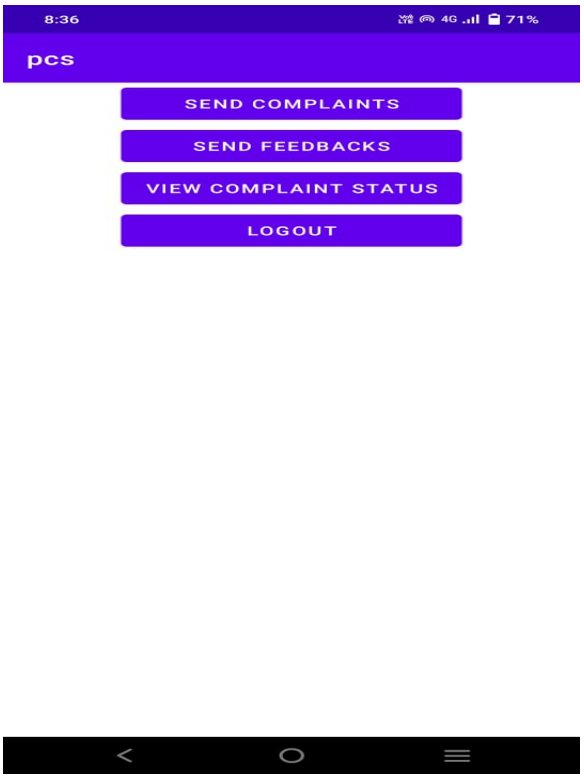

Figure A.15: Home

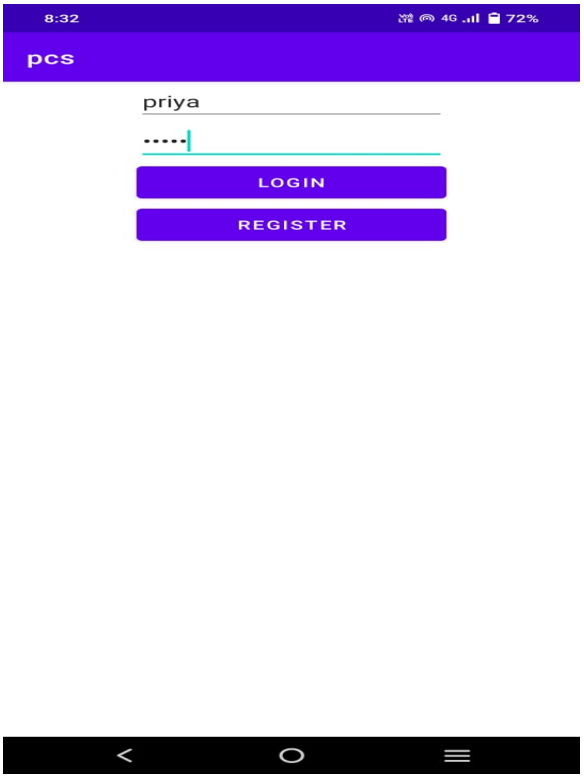

Figure A.16: Login

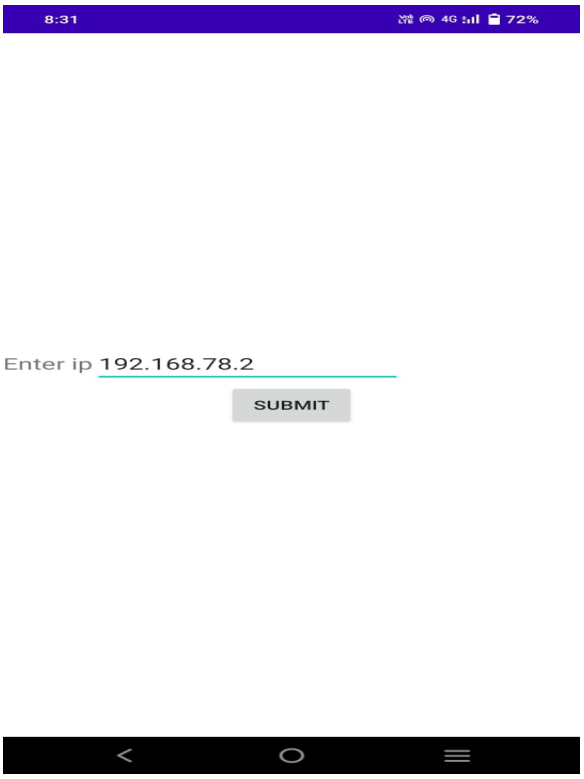

Figure A.17: Main

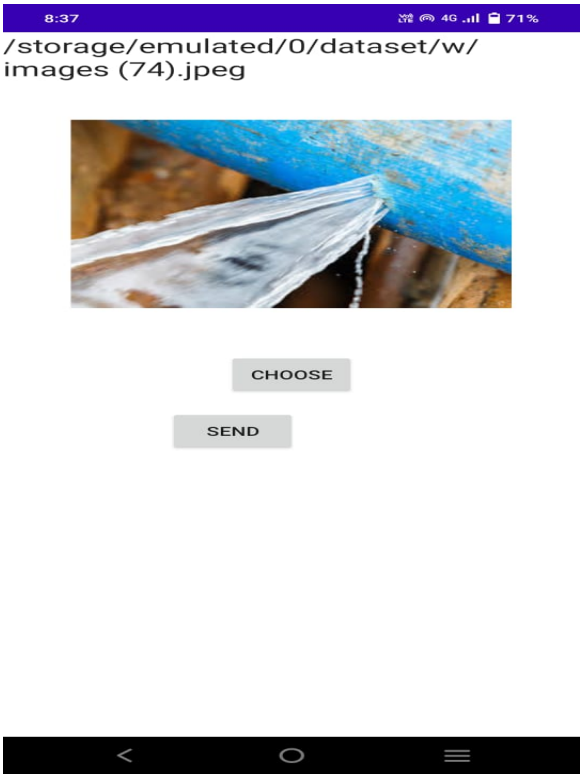

Figure A.18: Send Complaint

Figure A.19: View Complaint