



AQUA FLOW



SIBIN K S (LIAWSCS021)

ABSTRACT

The Panchayath Water Supply Management System (AQUA FLOW) is designed to enhance the efficiency and reliability of water distribution within the Panchayath jurisdiction. This system provides a comprehensive framework for managing the time schedule of water supply, facilitating new water connection applications, and addressing complaints related to water supply.

The application is a detailed time schedule for informs residents of the water supply schedule for different areas, accessible through both web and mobile platforms. This ensures timely updates and helps residents manage their water usage effectively. Additionally, the system simplifies the process for applying for new water connections by allowing residents to submit and track their applications online, thereby reducing paperwork and speeding up approvals. The PWSMS also provides a platform for lodging complaints related to water supply issues, such as leaks or low pressure, with each complaint assigned a unique tracking number to monitor resolution progress. These features collectively promote transparency, accountability, and improved service delivery within the Panchayath water supply system.

Software Requirements Specification (SRS)

Requirement analysis is a software engineering task that bridges the gap between system level software designs. We have done the requirement analysis in order to understand the problem faced in our objectives. The emphasis in requirement analysis is on identifying from the system, not how the system will achieve this goal.

FUNCTIONAL REQUIREMENTS

2. Authority

- Login
- View profile
- profile update
- Manage time schedule
- View staff and verify
- view user details
- View request for water supply and verify
- Assign work to staff
- View work report
- View feedback and rating
- chat with User
- View complaints

4. USER

- Register
- Login
- View profile and update
- Send application
- view application status
- payment
- Bill
- View time schedule
- Send complaints
- Send feedback and rating
- Chat with staff and authority



SYSTEM SPECIFICATION

HARDWARE SPECIFICATION

The selection of hardware is very important in the existence and proper working of any of the software. When selecting hardware, the size and capacity requirements are also important. The hardware must suit all application developments.

- Processor : i3 or above.
- Input device : Keyboard ,Mouse
- Output device : Monitor
- RAM : 4GB or Above
- HDD : 500 GB or Above
- Mobile : Android supported mobile phone



SOFTWARE SPECIFICATION

One of the most difficult tasks is selecting software, once the system requirement is find out then we have to determine whether a particular software package fits for those system requirements. This section summarizes the application requirement.

- Operating System : Windows 10 or above.
and Android 10 or above
- Technologies used : Android
- Front end : Flutter,Html,Js,Css
- Programming language : Dart
- Back End : Python-Django



SELECTION OF SOFTWARE

HTML, JAVA SCRIPT, BOOTSTRAP, CSS, AJAX, DART

- HTML (Hypertext Markup Language) provides the structure of web pages.
- JavaScript adds dynamic behavior and interactions.
- CSS (Cascading Style Sheets) enhances the presentation and styling of HTML elements.
- AJAX is a web development technique that allows to send and receive data from a server without reloading entire page
- Dart is the programming language used for Flutter development.
- Python: Versatile, easy-to-read language for web, data, AI, and rapid development.
- Flutter: Framework for cross-platform mobile apps using Dart, with fast development and native features.
- Django: High-level Python framework for secure, dynamic web apps..
- SQLite (db.sqlite3): Lightweight, serverless SQL database embedded in apps, ideal for local storage, prototyping, and small to medium projects.



BOOK REFERENCE

- Ian Somerville, Software Engineering, Pearson Education Asia.
- Software Engineering- Rohith Khurana
- ASP.NET Unleashed- Stephen Walther

REFERENCE

- www.wikipedia.com
- www.learnvisualstudio.net
- www.google.com
- www.codeproject.com
- www.tutorialspoint.com
- www.w3schools.com



EXISTING SYSTEM

The existing system for managing water supply scheduling, new connection applications, and complaint handling relies on manual processes, leading to inefficiencies and delays. Water supply schedules are typically communicated through offline methods such as notice boards or public announcements, making them inaccessible to many residents in real time. Similarly, applying for new water connections requires residents to visit the Panchayath office, submit physical forms, and wait for approvals, resulting in prolonged processing times. Complaint management is also handled traditionally, with issues recorded manually in registers or over phone calls, making tracking and resolution slow and ineffective. Additionally, the lack of transparency prevents residents from easily monitoring their application or complaint status, causing dissatisfaction and reduced accountability.

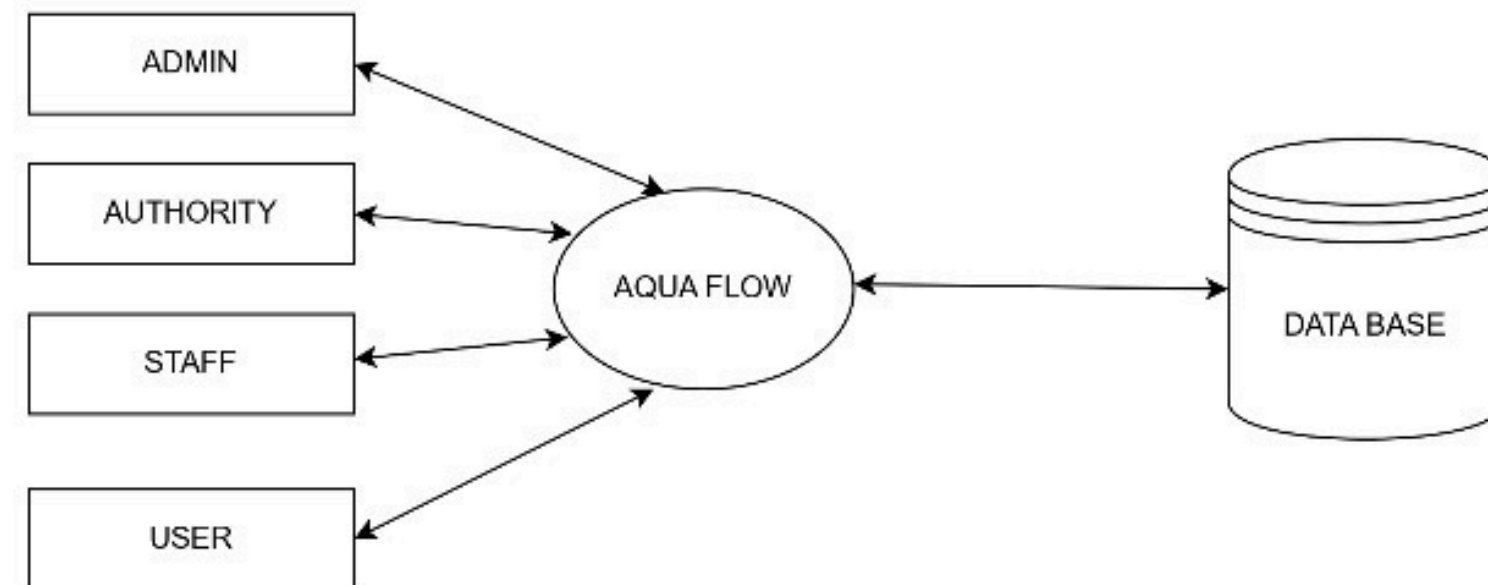
PROPOSED SYSTEM

The proposed system addresses these challenges by introducing a web and mobile-based platform that automates water supply scheduling, ensuring real-time updates for residents. It also streamlines the application process for new water connections by allowing online submissions and status tracking, reducing paperwork and delays. Furthermore, the system enhances complaint management by enabling residents to file complaints digitally, assigning unique tracking numbers for better monitoring and faster resolution. By digitizing these processes, the proposed system promotes transparency, accountability, and improved service delivery within the Panchayath water supply management framework.

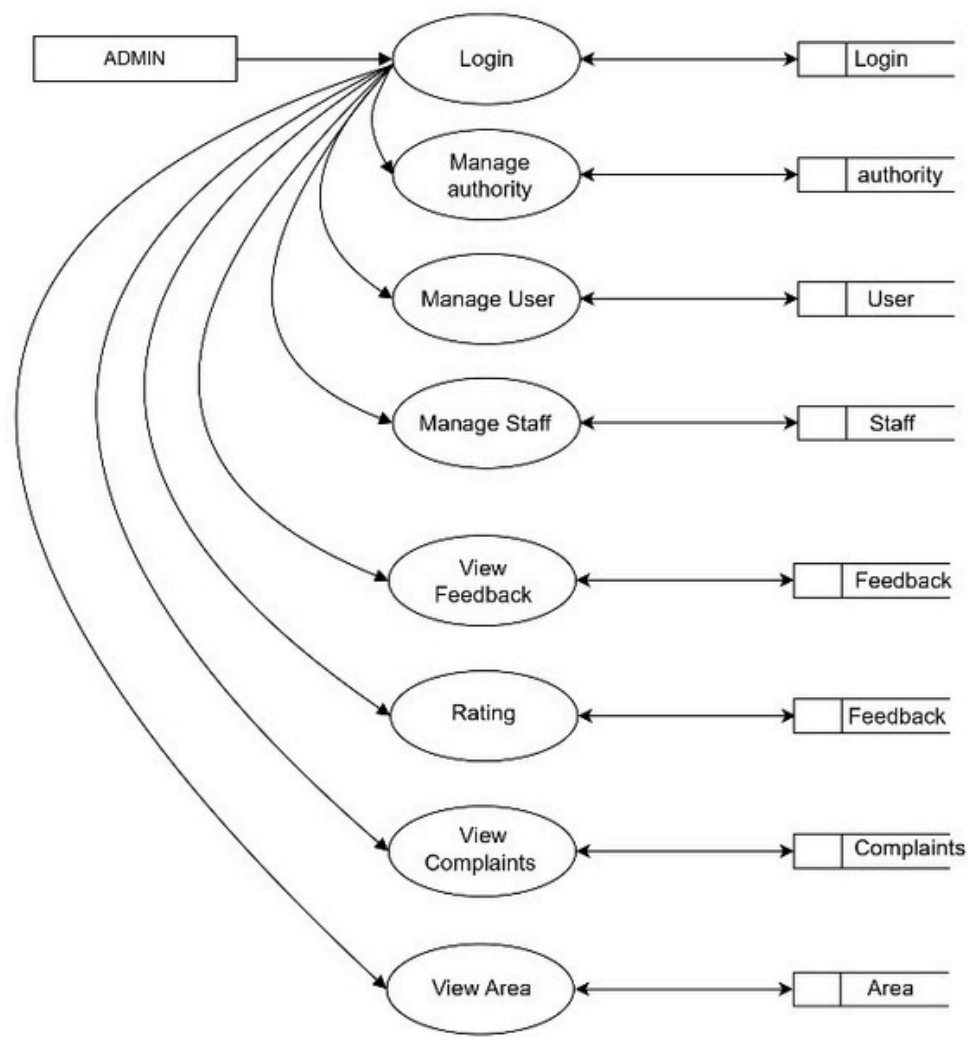
DATA FLOW DIAGRAM

LEVEL 0

LEVEL 0

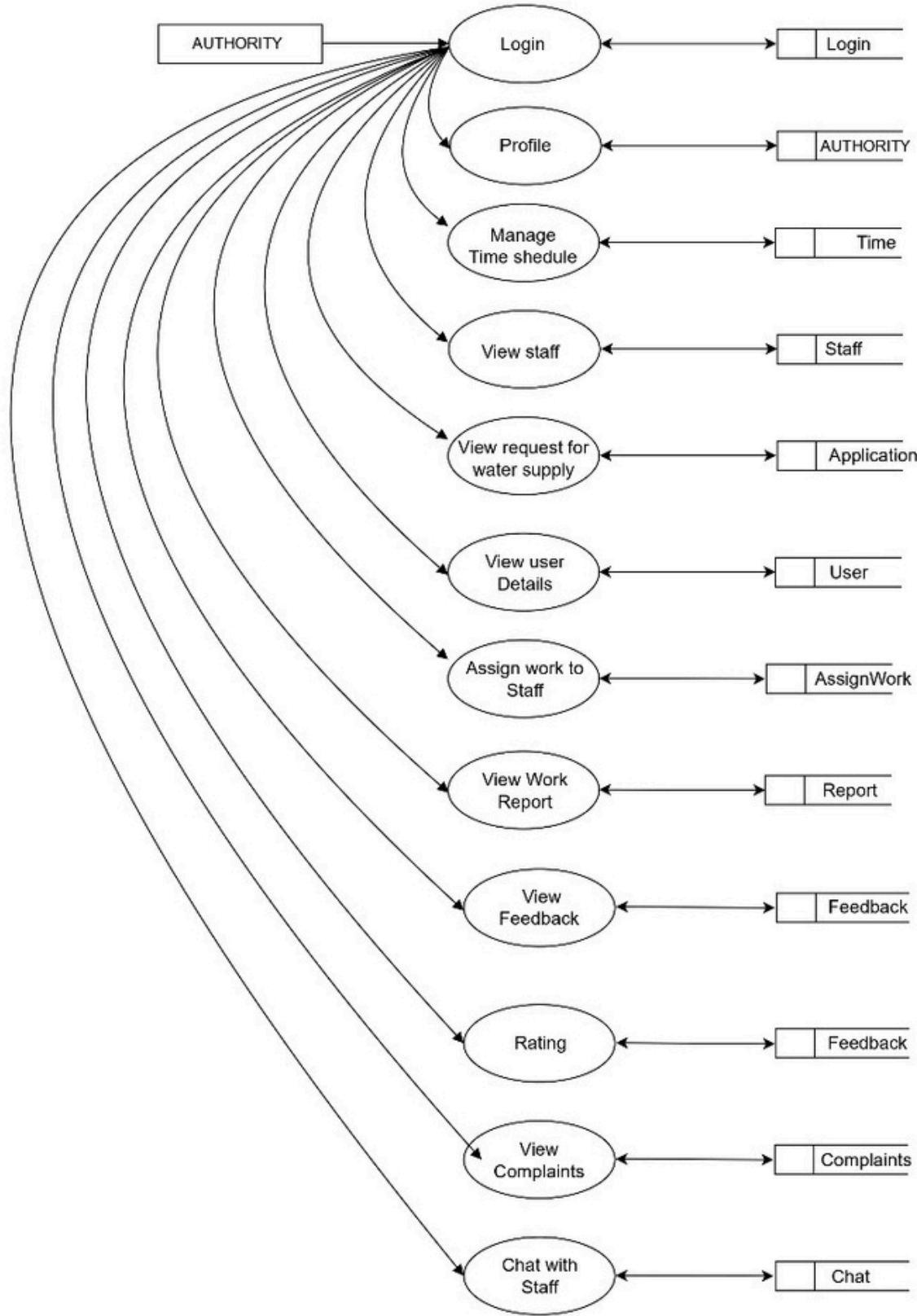


LEVEL 1.1

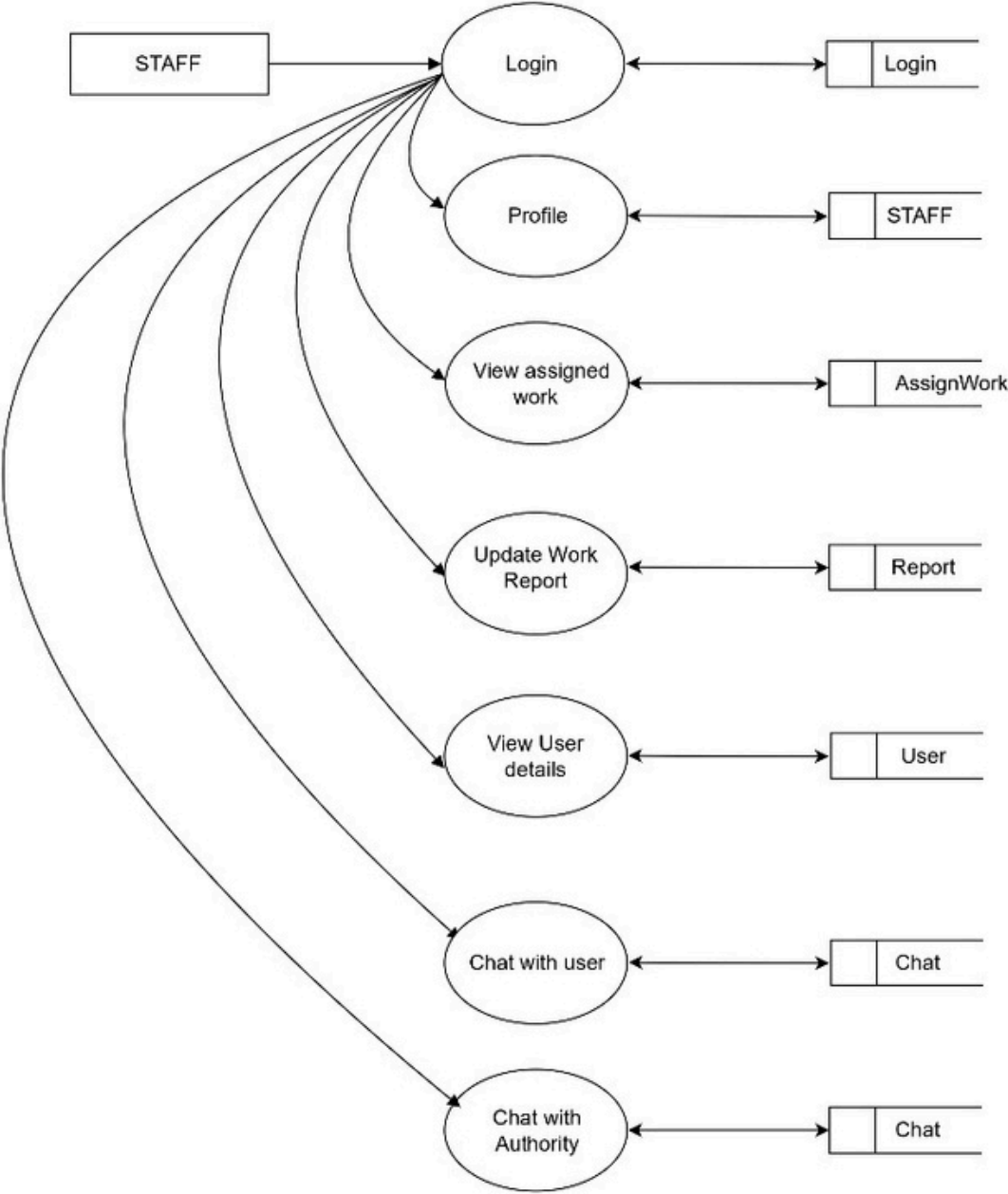


LEVEL 1.2

LEVEL 1.2

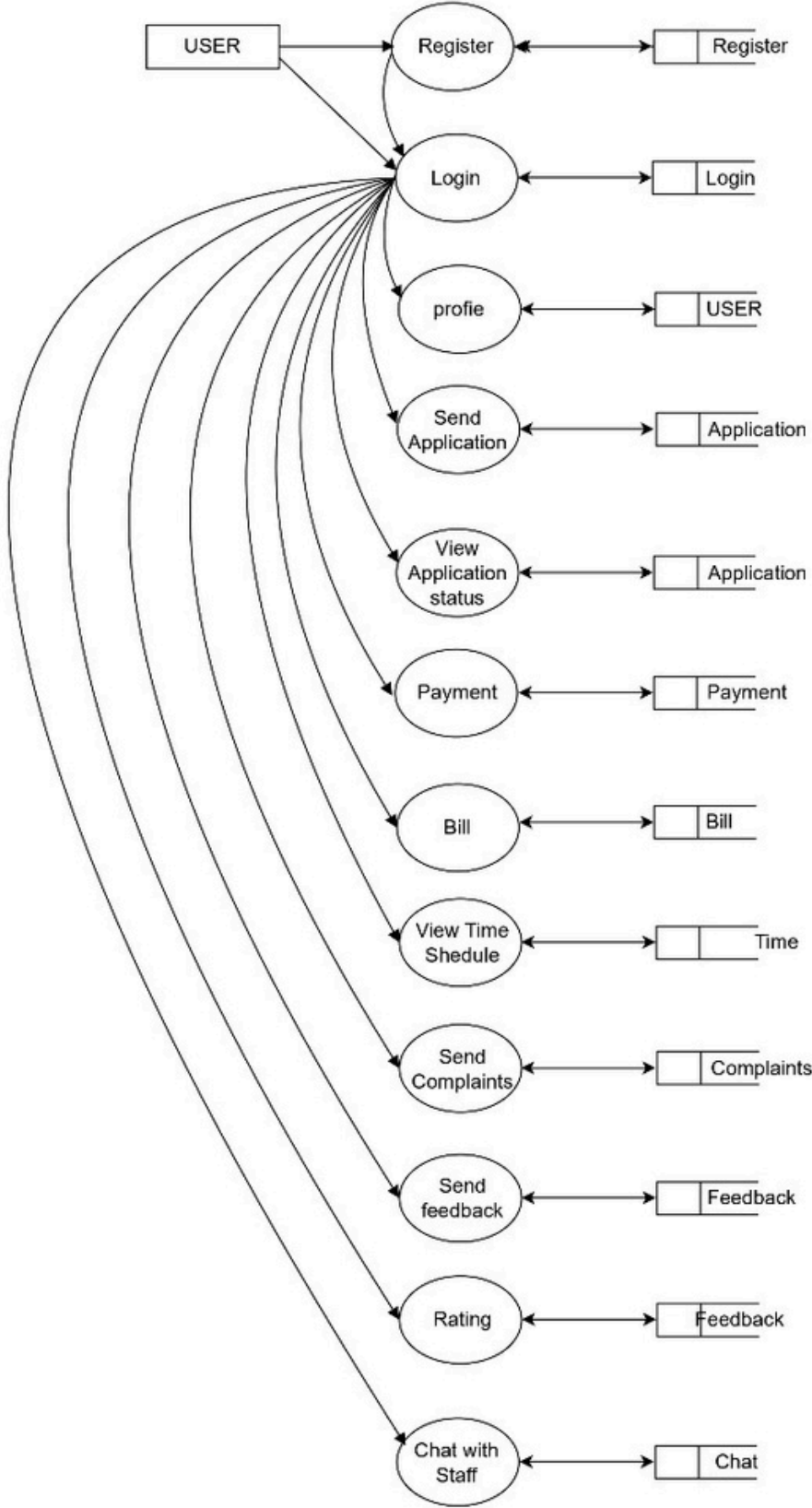


LEVEL 1.3

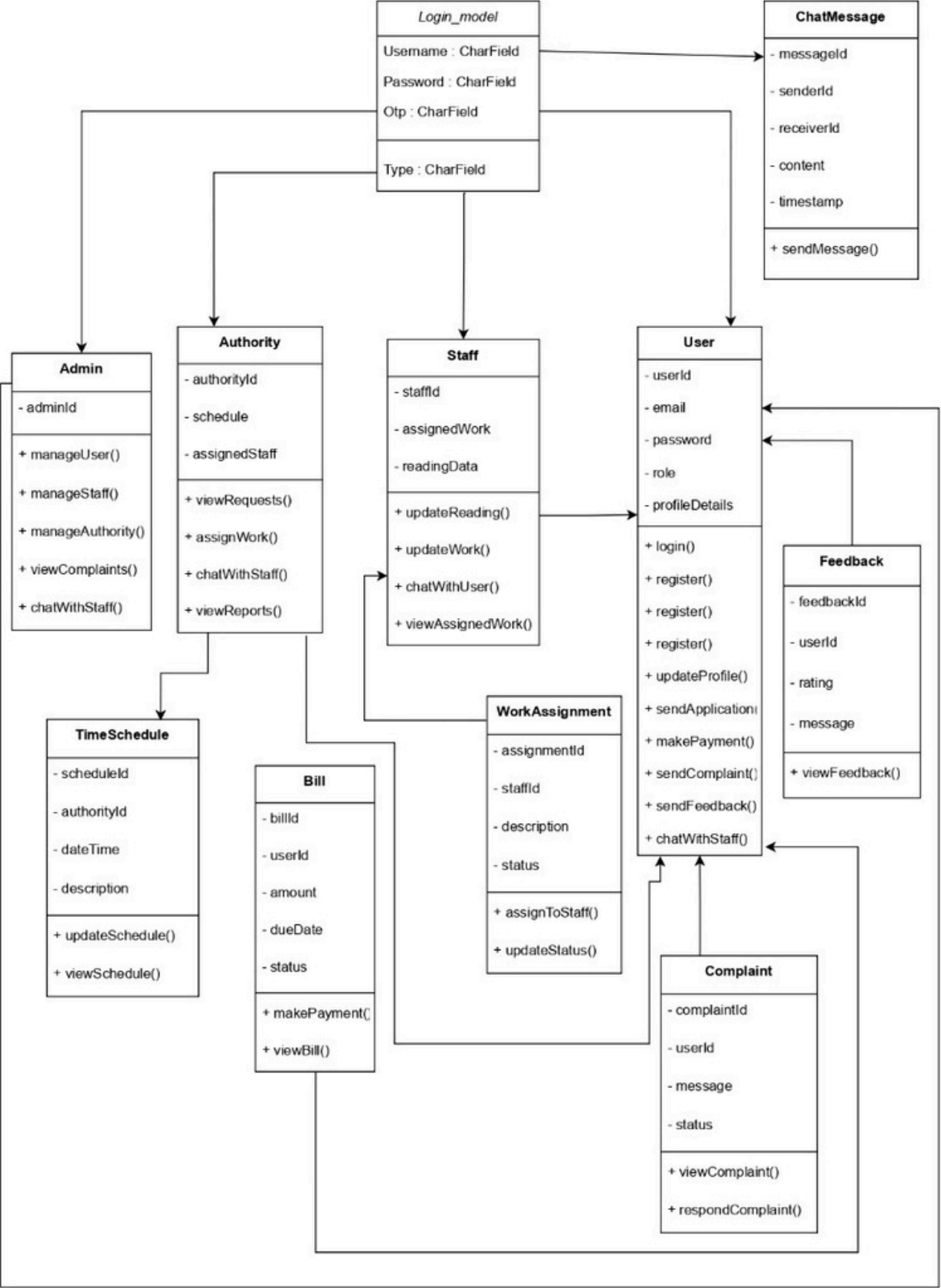


LEVEL 1.4

LEVEL 1.4



CLASS DIGRAM



TABLES

LOGIN TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Login—Id	Integer Field	Primary Key
Username	Char Field	Not Null
Password	Char Field	Not Null
Type	Char Field	Not Null
Otp	Char Field	Not Null

AUTHORITY TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
First—name	Char Field	Not Null
Mid—name	Char Field	Not Null
Last—name	Char Field	Not Null
AREA	Char Field	Foreign Key
Place	Char Field	Not Null
Address	Char Field	Not Null
Pincode	Char Field	Not Null
Profile	File Field	Not Null
Phone	Char Field	Not Null
Email	Char Field	Not Null
LOGIN	Int(10)	Foreign Key
Panchayath—name	Char Field	Not Null

STAFF TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
First—name	Char Field	Not Null
Mid—name	Char Field	Not Null
Last—name	Char Field	Not Null
Pin code	Char Field	Not Null
AREA	Char Field	Foreign Key
Profile	File Field	Not Null
Phone	Char Field	Not Null
Email	Char Field	Not Null
LOGIN	Integer Field	Foreign Key
AUTHORITY	Char Field	Foreign Key

USER TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
First—name	Char Field	Not Null
Mid—name	Char Field	Not Null
Last—name	Char Field	Not Null
Email	Char Field	Not Null
Pincode	Int (20)	Not Null
Phone	Int (20)	Not Null
Profile	File Field	Not Null
Consumer—no	Char Field	Not Null
Address	Char Field	Not Null
Proof	File Field	Not Null
Area	Char Field	Foreign Key
LOGIN	Integer Field	Foreign Key

CHAT TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
Chat	Char Field	Not Null
Date	Date Field	Not Null
Time	Integer Field	Not Null
FROMID	Integer Field	Foreign Key
TOID	Integer Field	Foreign Key

TIME TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
Date	Date Field	Not Null
description	Char Field	Not Null
morning_Time	Time Field	Not Null
evening_Time	Time Field	Not Null

REPORT TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
Consumer_no	Date Field	Not Null
Complaint_no	Char Field	Not Null
STAFF	Char Field	Foreign Key
Upload_photo	File Field	Not Null
description	Char Field	Not Null

BILL TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
USER	Char Field	Foreign Key
READING	Char Field	Foreign Key
Payment_status	Char Field	Not Null
Date	Date Field	Not Null
Due_date	Date Field	Not Null

READING TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
STAFF	Char Field	Not Null
USER	Char Field	Foreign Key
Current—Reading	Integer Field	Not Null
Fixed—Charge	Integer Field	Not Null
Advance	Integer Field	Not Null
Prior—Obligation	Integer Field	Not Null
Fine	Integer Field	Not Null
Total—Amount	Integer Field	Not Null

APPLICATION TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
USER	Float	Foreign Key
Application—no	Integer Field	Not Null
Panchayath—name	Char Field	Not Null
Father—Name	Char Field	Not Null
Address	Char Field	Not Null
Phone—no	Integer Field	Not Null
Family—members	Integer Field	Not Null
Adhar—no	Integer Field	Not Null
Rationcard	Char Field	Not Null
Neighbourconsumer—no	Integer Field	Not Null
Cast	Char Field	Not Null
Aadhaar—photo	File Field	Not Null
Rationcard—photo	File Field	Not Null
Ownershipcertificate—photo	File Field	Not Null
Status	Char Field	Not Null

ASSIGNEDWORK TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
STAFF	Char Field	Foreign Key
Area	Char Field	Not Null
Work	Integer Field	Not Null

FEEDBACK TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
Feedback	Char Field	Not Null
Rating	Char Field	Not Null
Date	Date Field	Not Null
USER	Char Field	Foreign Key

AREA TABLE

FIELD NAME	DATA TYPE	CONSTRAINTS
Id	Integer Field	Primary Key
Area	Char Field	Not Null

USER INTERFACE (UI)

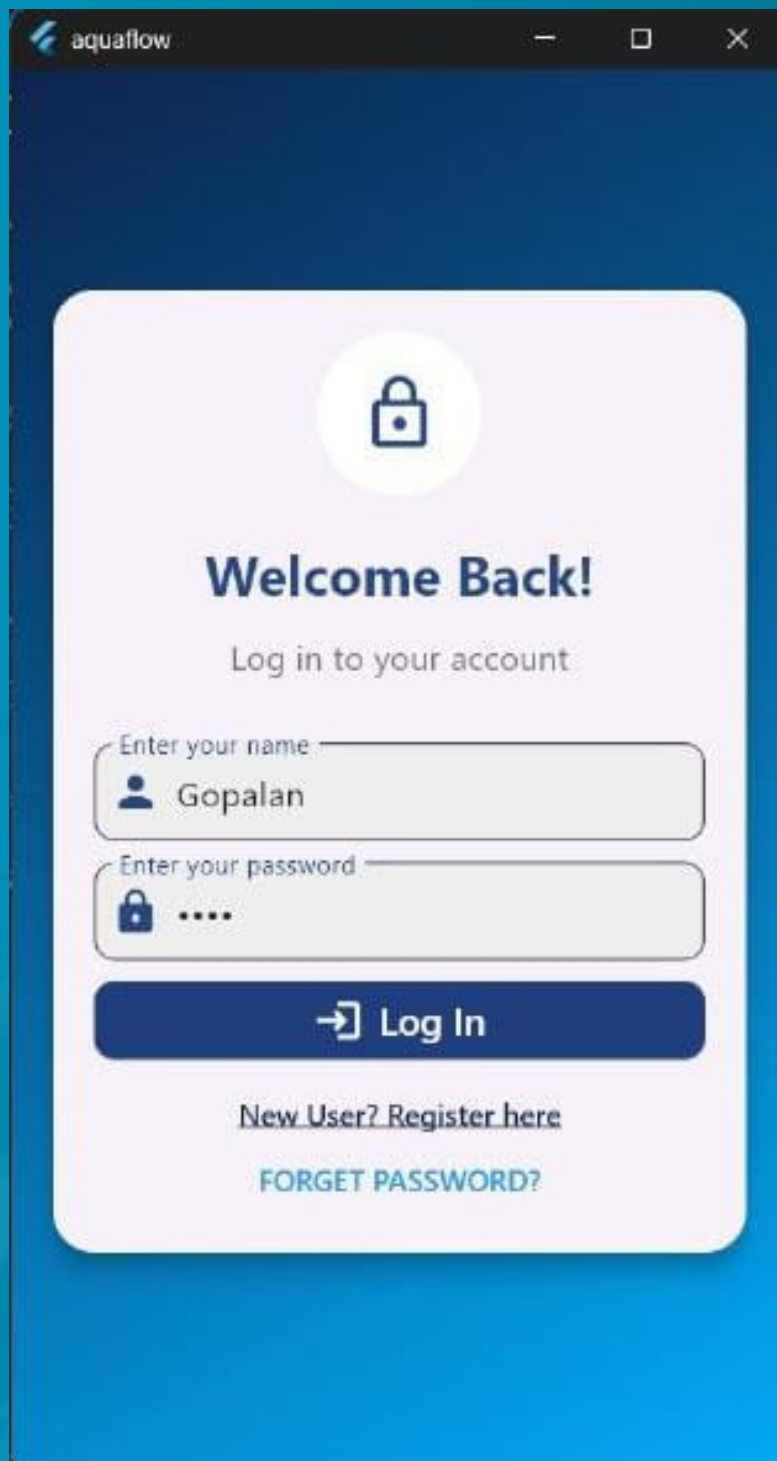
1.USER

LOGIN PAGE

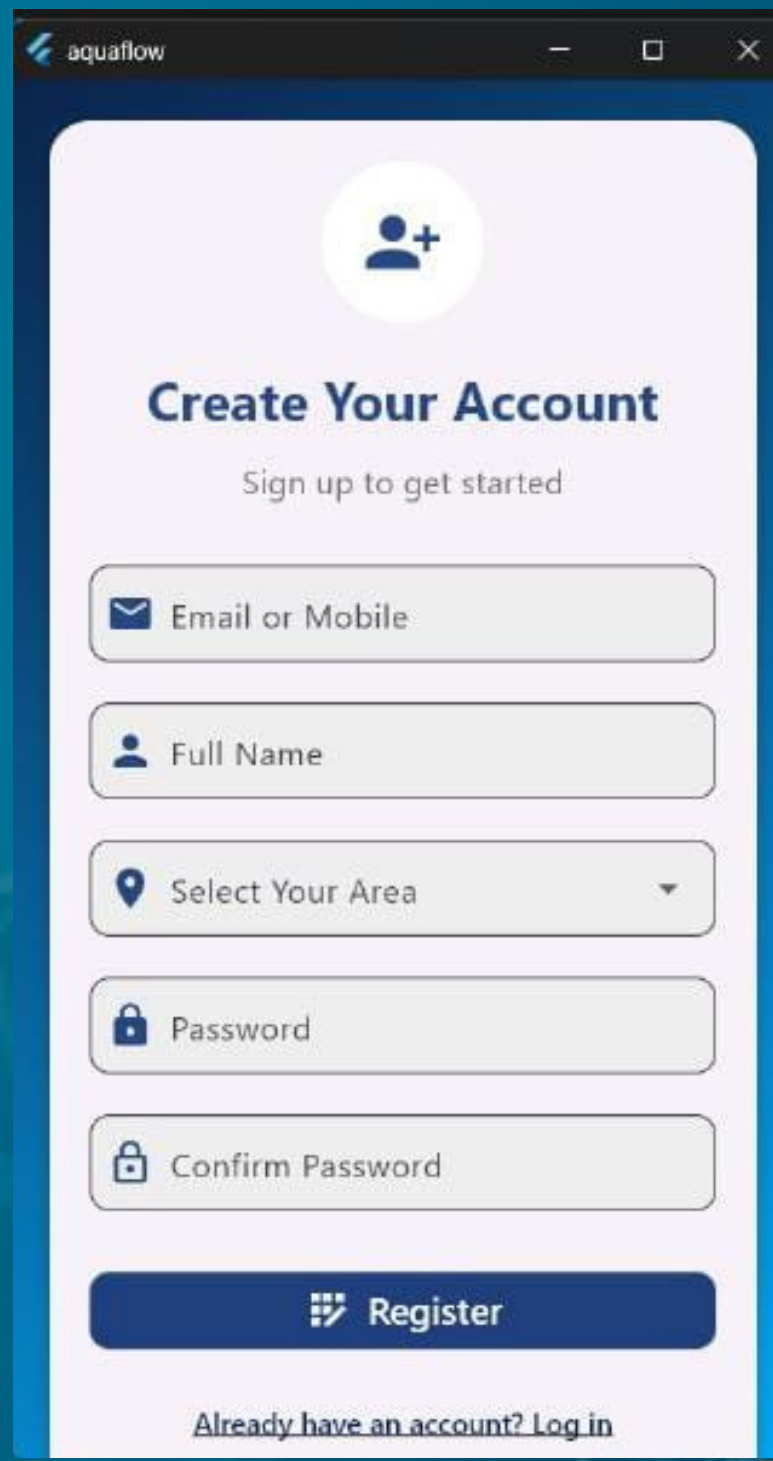
USER REGISTRETION

HOME PAGE

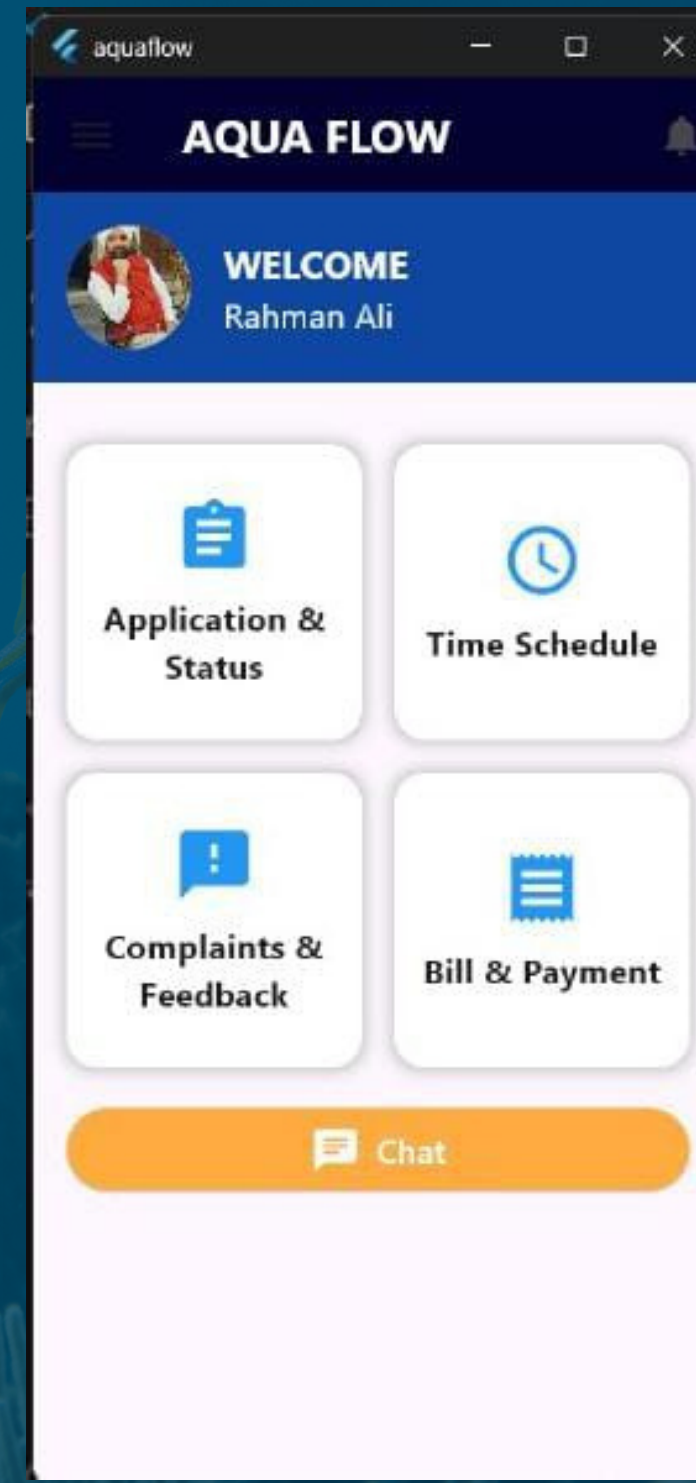
APPLICATION & STATUS



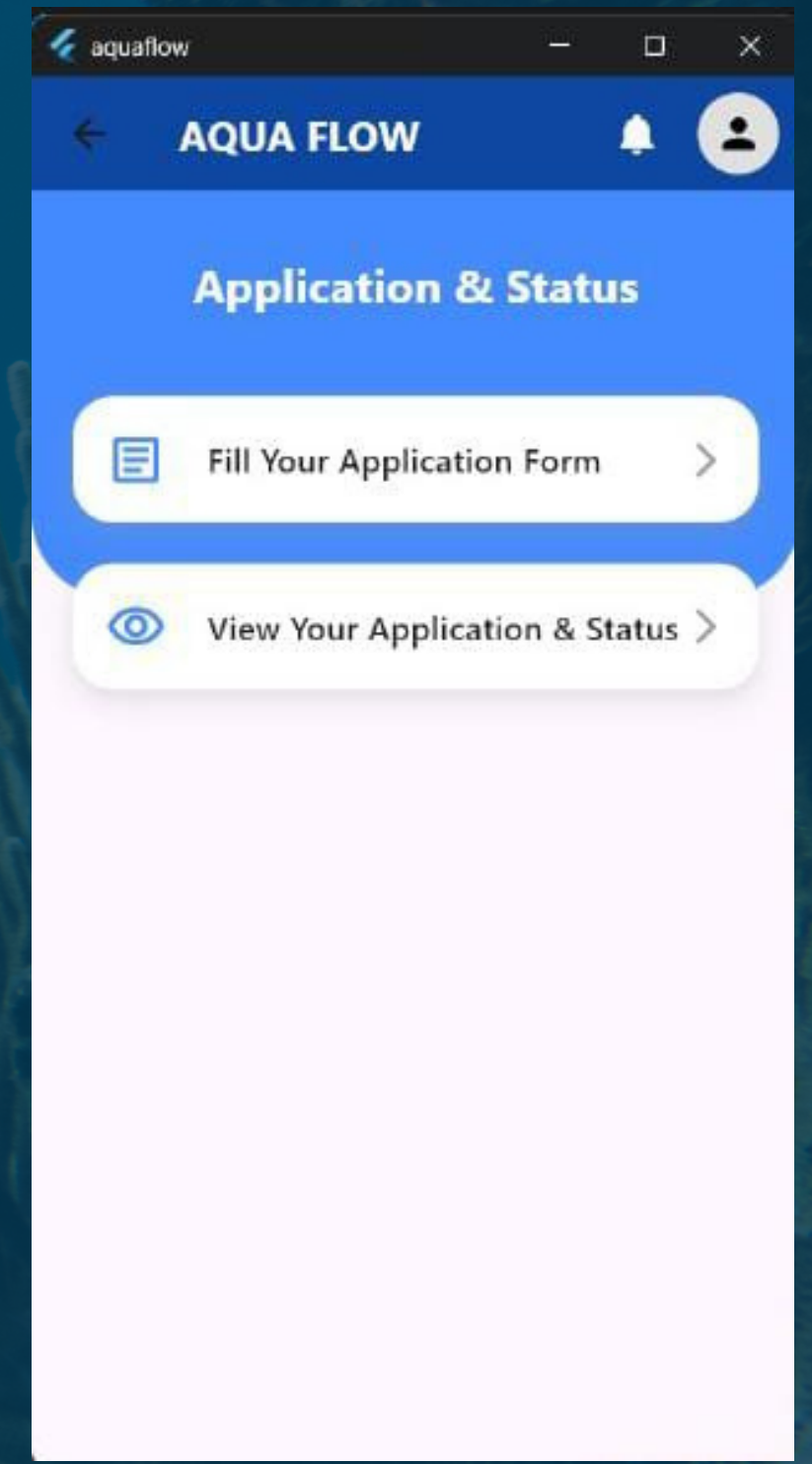
The login page features a dark blue header with the 'aquafLOW' logo. A white card in the center contains a lock icon and the text 'Welcome Back! Log in to your account'. Below this are input fields for 'Enter your name' (with 'Gopalan' entered) and 'Enter your password' (with masked dots). A dark blue 'Log In' button is at the bottom of the card. Links for 'New User? Register here' and 'FORGET PASSWORD?' are positioned below the button.



The registration page has a dark blue header with the 'aquafLOW' logo. A white card displays a user icon and the heading 'Create Your Account Sign up to get started'. It includes input fields for 'Email or Mobile', 'Full Name', 'Select Your Area' (a dropdown menu), 'Password', and 'Confirm Password'. A dark blue 'Register' button is at the bottom of the card, with a link 'Already have an account? Log in' below it.



The home page features a dark blue header with the 'aquafLOW' logo and a hamburger menu icon. Below the header is a blue banner with a user profile picture and the text 'WELCOME Rahman Ali'. The main content area contains four white cards with blue icons: 'Application & Status' (clipboard icon), 'Time Schedule' (clock icon), 'Complaints & Feedback' (speech bubble icon), and 'Bill & Payment' (receipt icon). An orange 'Chat' button is at the bottom.



The 'Application & Status' page has a dark blue header with the 'aquafLOW' logo, a back arrow, and a user profile icon. The page title is 'Application & Status'. It features two white cards with blue icons: 'Fill Your Application Form' (document icon) and 'View Your Application & Status' (eye icon). Both cards have a right-pointing arrow.

APPLICATION FORM

aquaflow

←

AQUA FLOW

⋮

●

●

●

●

NAME OF GRAM PANCHAYAT

APPLICANT'S NAME

FATHER'S/MOTHER'S NAME

ADDRESS

PHONE NO

BACK

NEXT

aquaflow

←

AQUA FLOW

⋮

●

●

●

●

NUMBER OF FAMILY MEMBERS

AADHAAR NO

RATION CARD (BPL/APL)

NEIGHBOUR CONSUMPTION NO

BELONGING TO SCHEDULED CASTES/SC...

BACK

NEXT

aquaflow

←

AQUA FLOW

⋮

1

2

3

4

SUBMIT THE OWNERSHIP CERTIFICATE OF THE BUILDING

Upload Photo

SUBMIT COPY OF AADHAAR CARD

Upload Photo

SUBMIT COPY OF RATION CARD

Upload Photo

BACK

NEXT

aquaflow

←

AQUA FLOW

⋮

STATEMENT OF TRUTH

Please Inform That I Currently Do Not Have Adequate Drinking Water Source And Would Like To Get Drinking Water Connection

☐ Agree

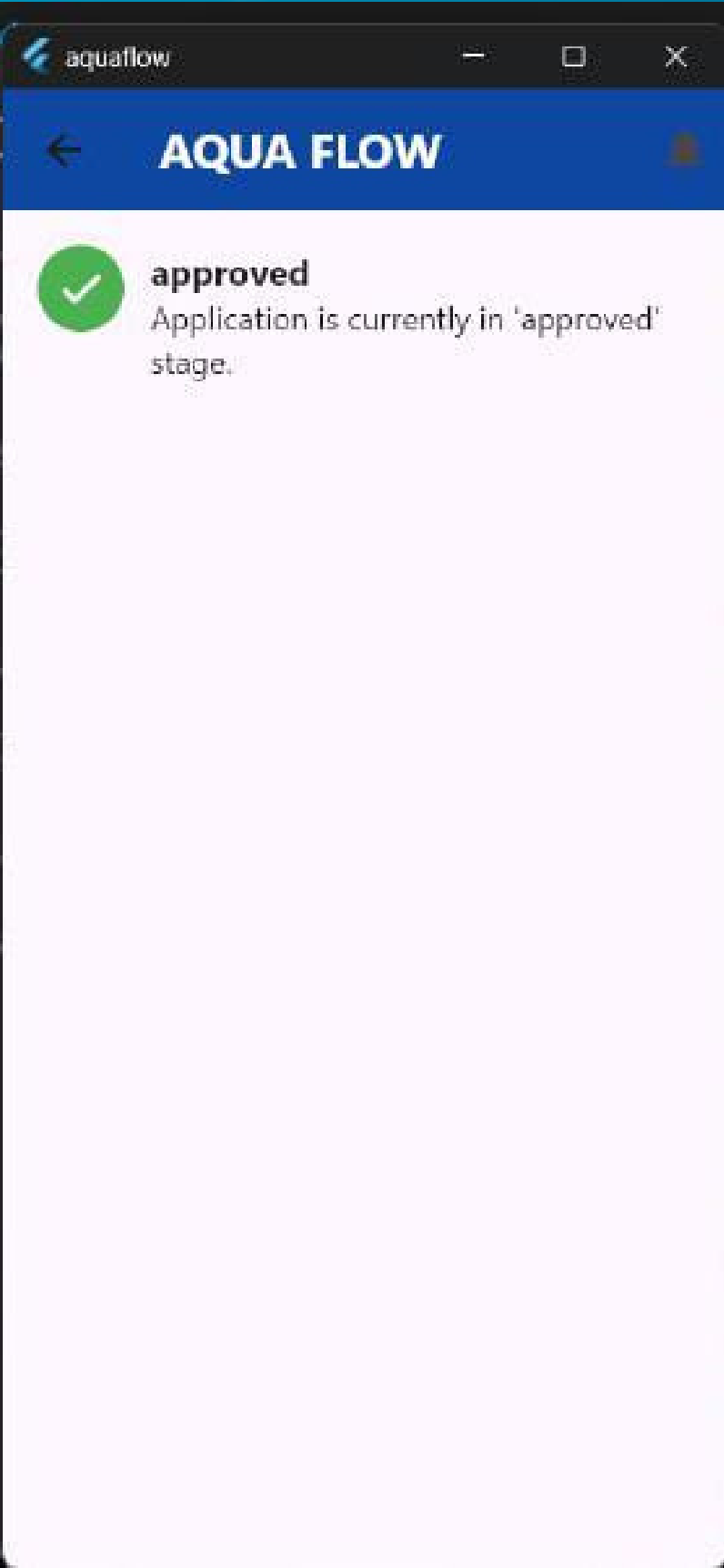
Date

Place

BACK

SUBMIT

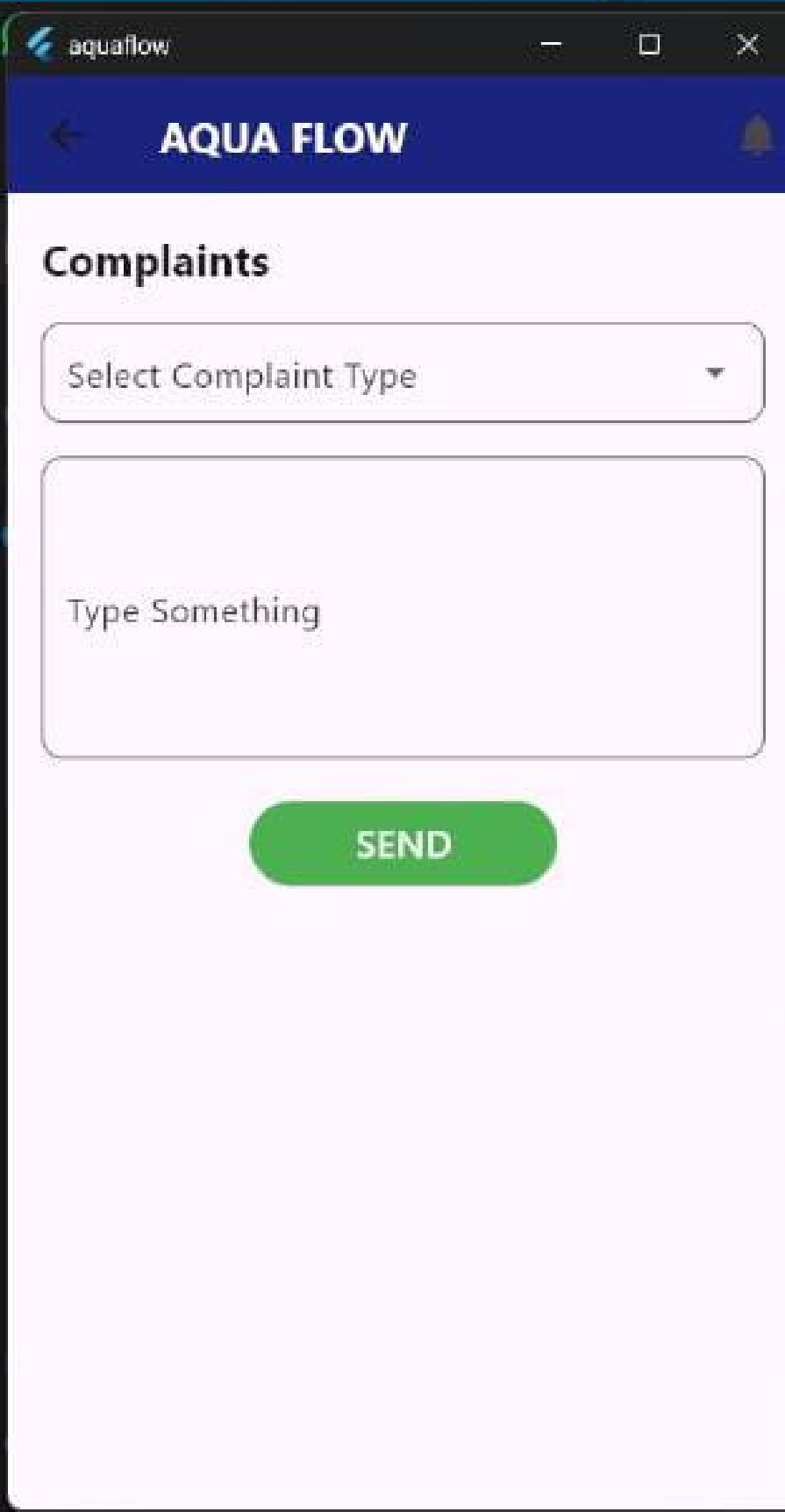
STATUS



TIME SCHEDULE



COMPLAINTS



CHAT



BILL

aquaflow

←

AQUA FLOW

USER ID : 25

DATE : 2025-03-17

NAME : Rahman Ali

ADDRESS : puthiyapurayil

Previous meter reading	200000.0
Current meter reading	500000
Total usage	30000.0
Fixed charge	100.0
Prior obligation	0.0
Advance	0.0
Fine	0.0
Total amount	100.0

Pay by any UPI app

PAYMENT

aquaflow

←

AQUA FLOW

PAYMENT

Google Pay

☒

PayPal

☐

Apple Pay

☐

PhonePe

☐

Fixed charge

100

Prior obligation

000

Advance

000

Fine

000

Total amount

100.00

PAY NOW

VIEW PROFILE

aquaflow

←

AQUA FLOW



Rahman Ali

9856432456

EDIT PROFILE

EDIT PROFILE

aquaflow

←

AQUA FLOW



First Name

Rahman

Middle Name

Ali

Last Name

Phone No

9856432456

E-mail

rahman@gmail.com

Pin Code

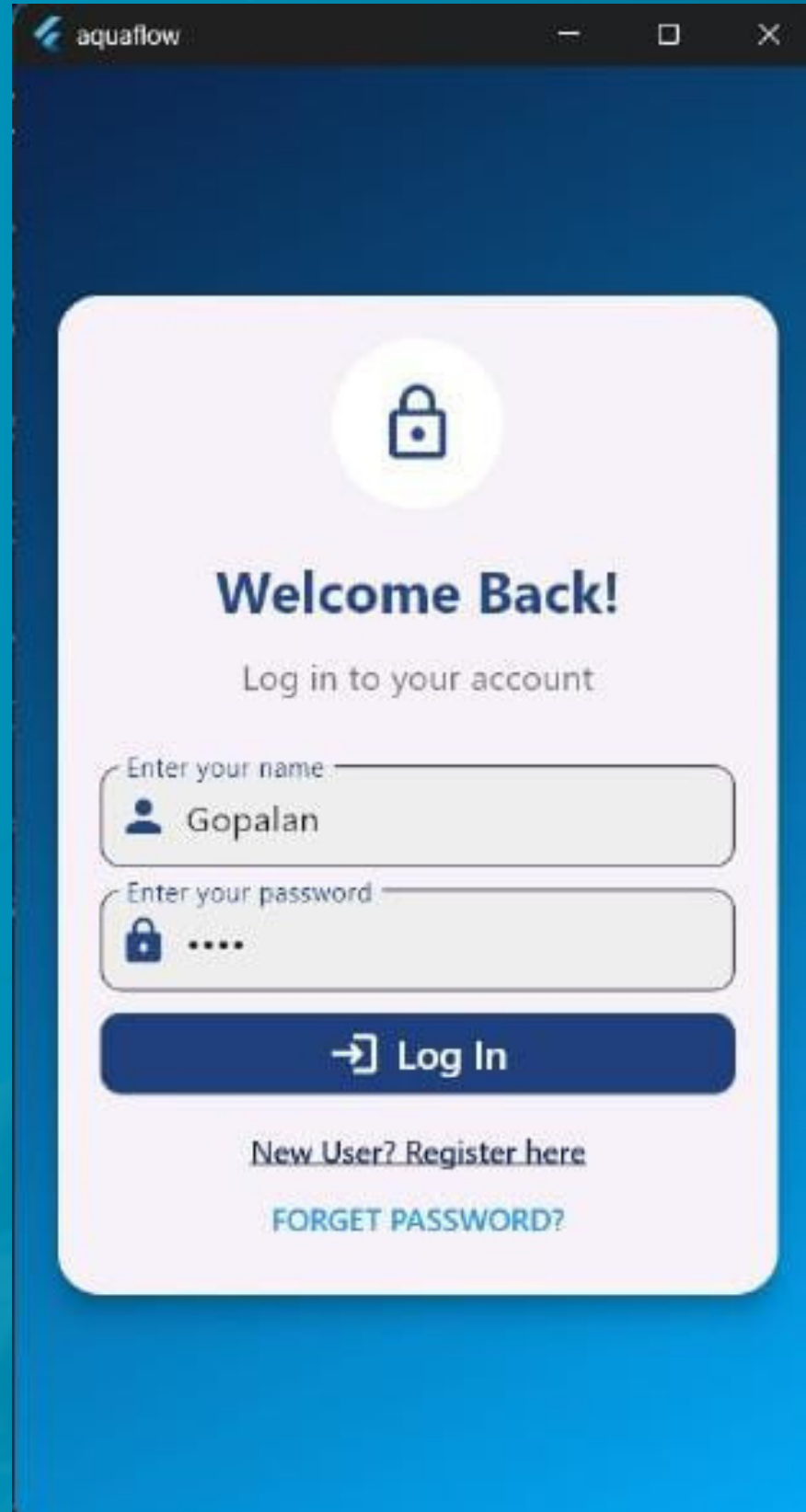
674454

Address

puthiyapurayil

2.STAFF

LOGIN PAGE



aquafLOW



Welcome Back!
Log in to your account

Enter your name

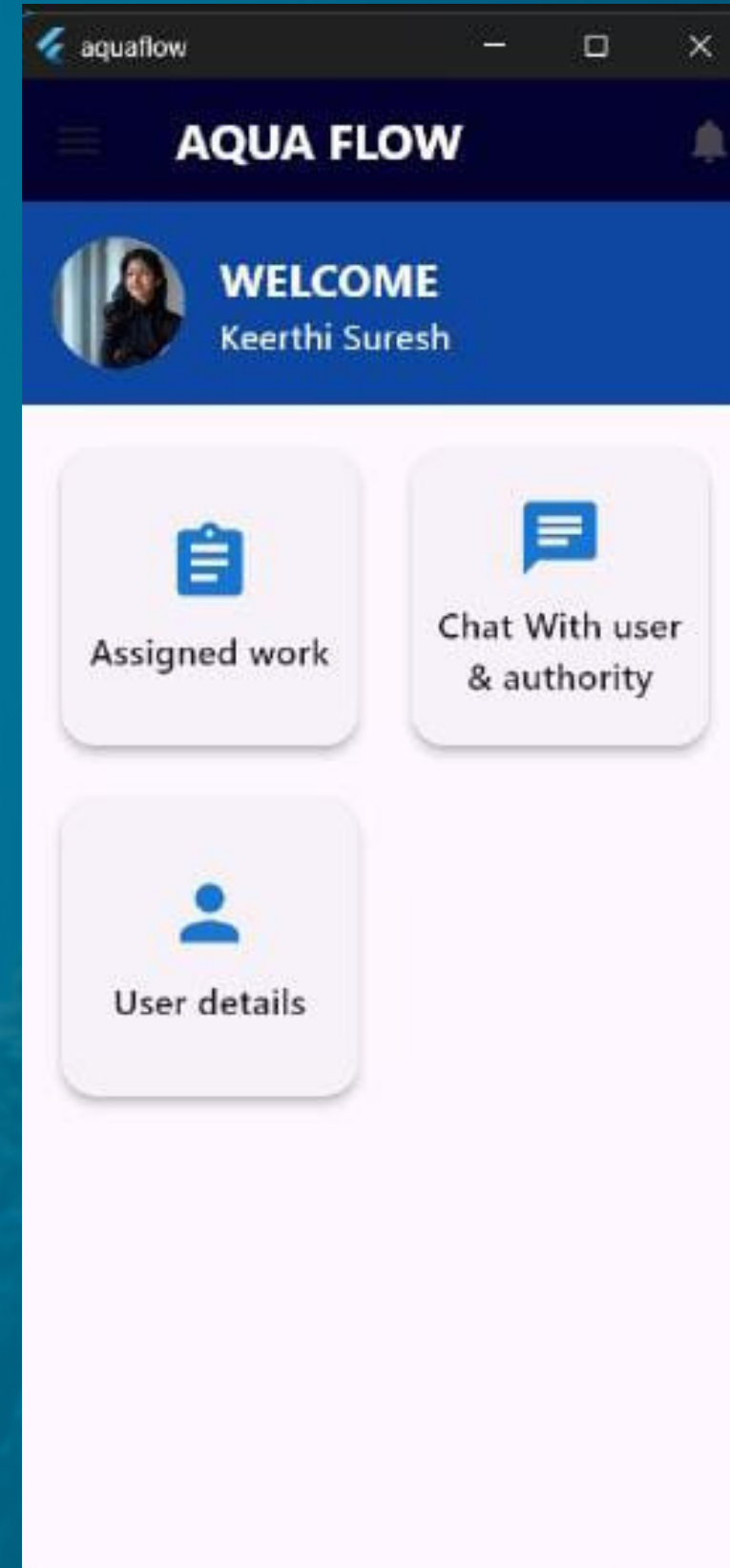
Enter your password

 **Log In**

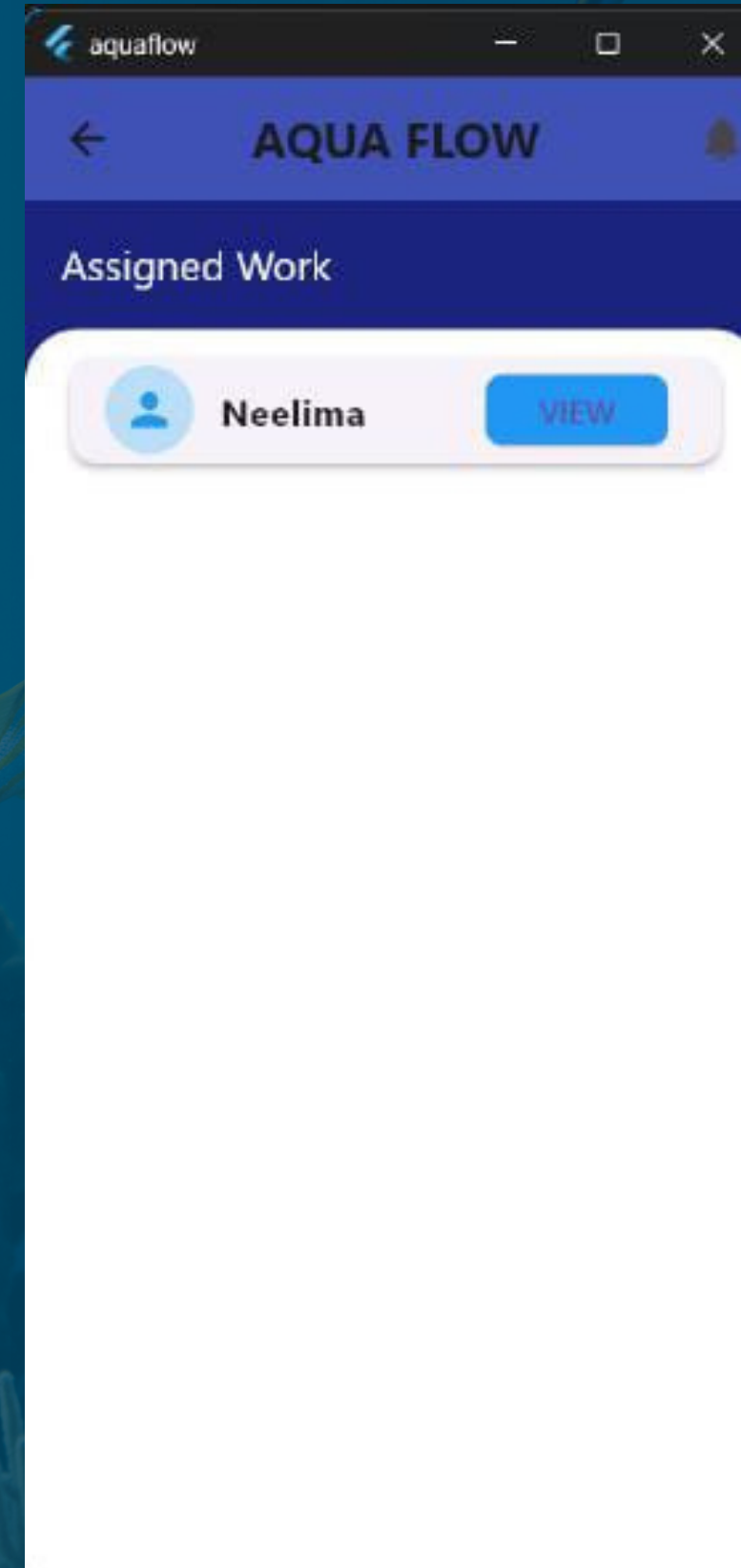
[New User? Register here](#)

[FORGET PASSWORD?](#)

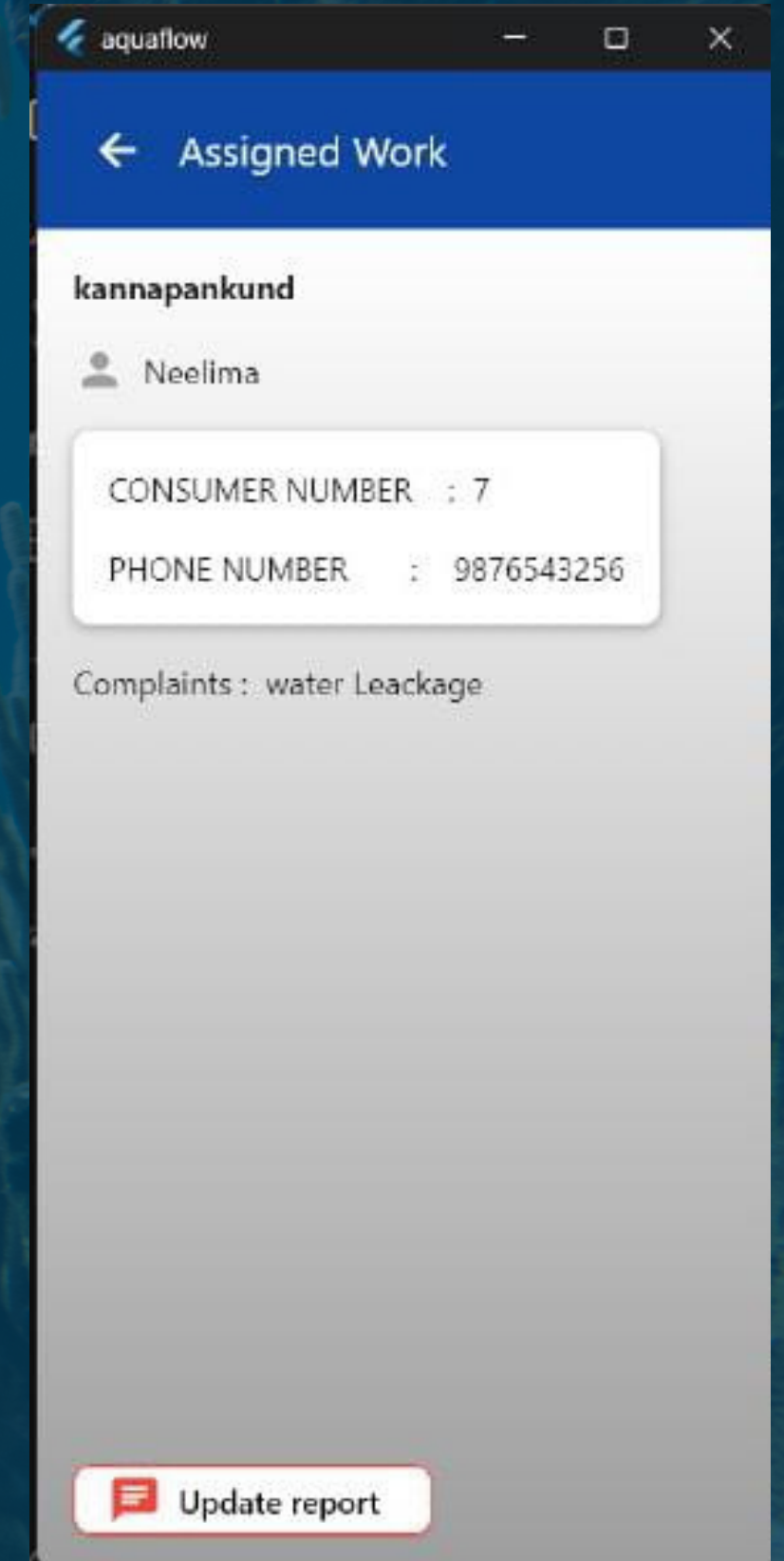
HOME PAGE



ASSIGNED WORK



VIEW WORK



UPDATE REPORT

aquaflow

←

AQUA FLOW

Update Report

CONSUMER NUMBER: 7

Type Something

Upload Photo

SEND

USER LIST

aquaflow

←

User Details

Q Search

Gayathri

Consumer_No: 1

Phone: 9876543213

Divakaran

Consumer_No: 2

Phone: 9067854323

Sreeja

Consumer_No: 3

Phone: 9765432123

Rahman

Consumer_No: 4

Phone: 9856432456

UPDATE READING

aquaflow

←

AQUA FLOW

CONSUMER NO: 4

NAME: Rahman

Previous Meter Reading

500000

Current Meter Reading

530500

Total Usage

30500.00

Fixed_charge

100.0

Advance

0.0

Prior_obligation

0.0

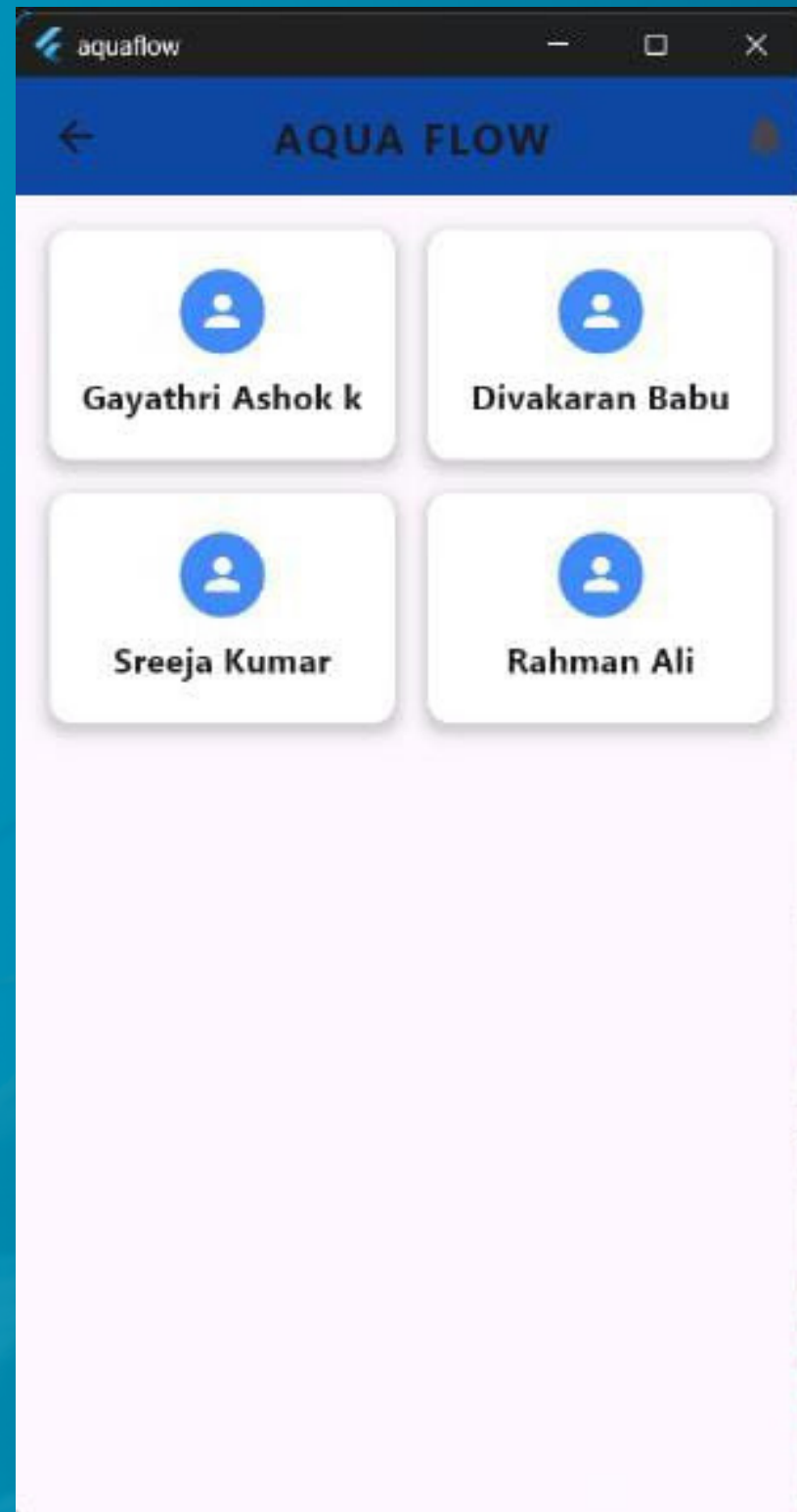
Fine

50.00

Total_amount

150.00

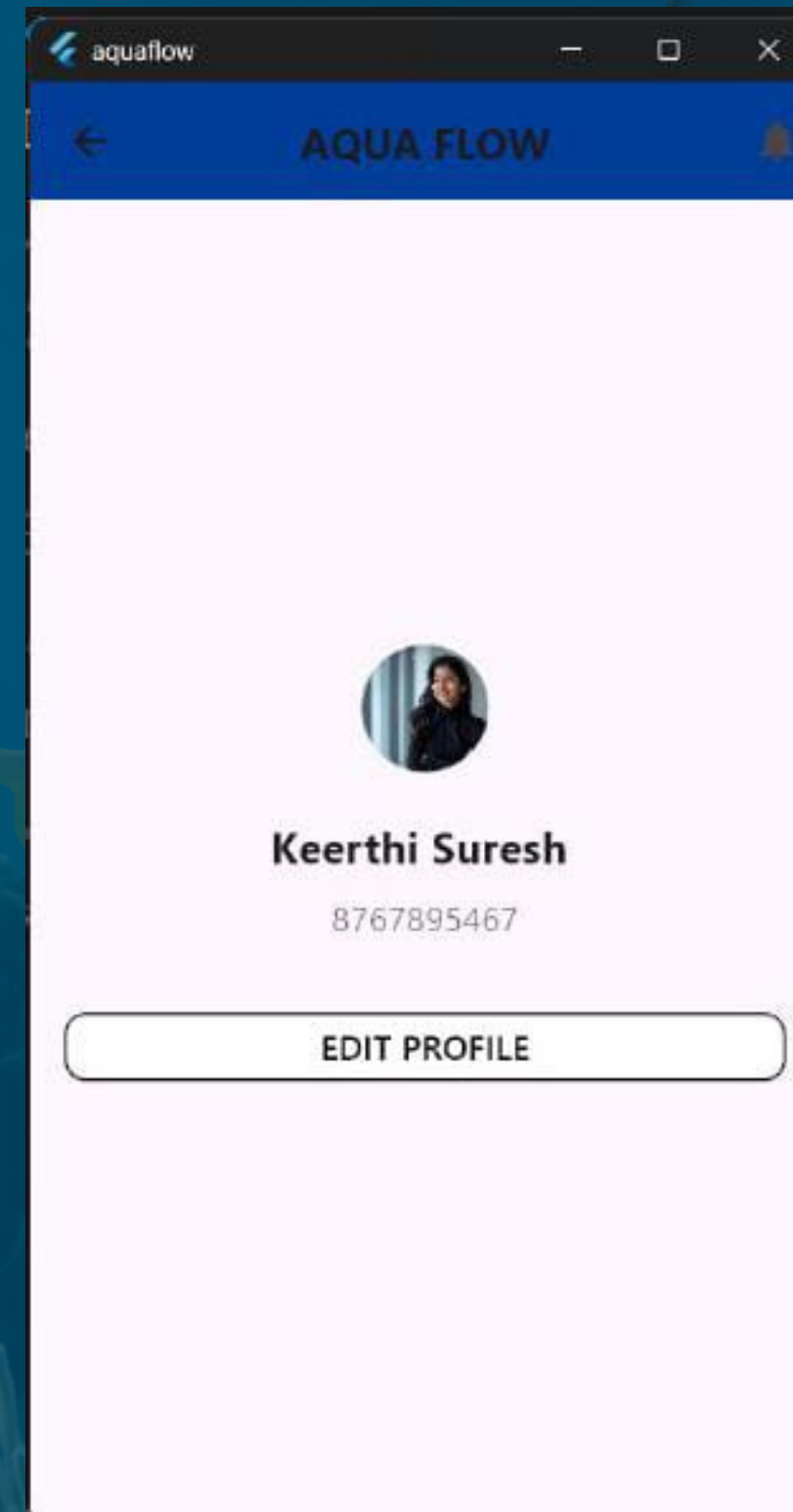
USER DETAILS



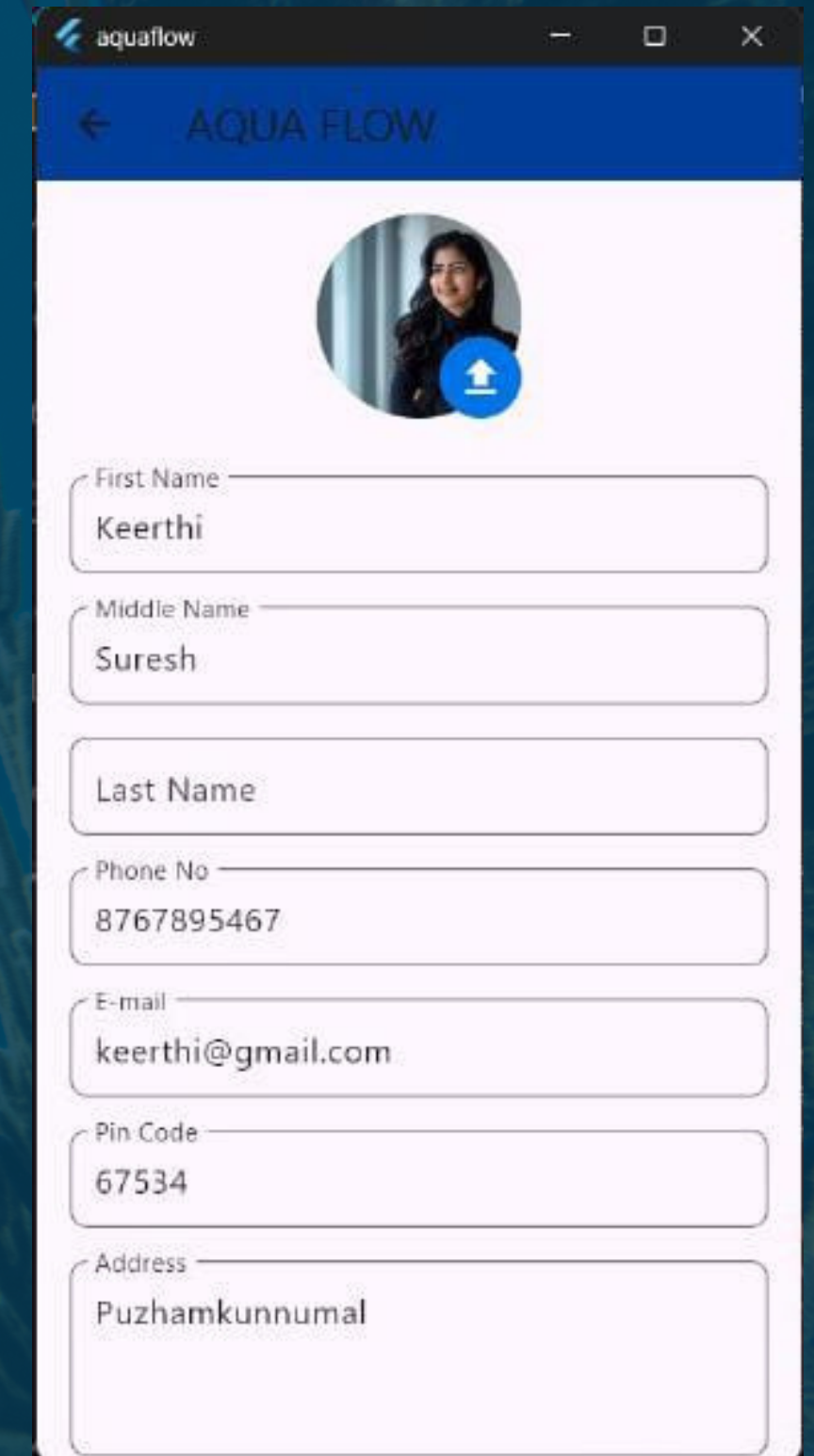
CHAT



VIEW PROFILE

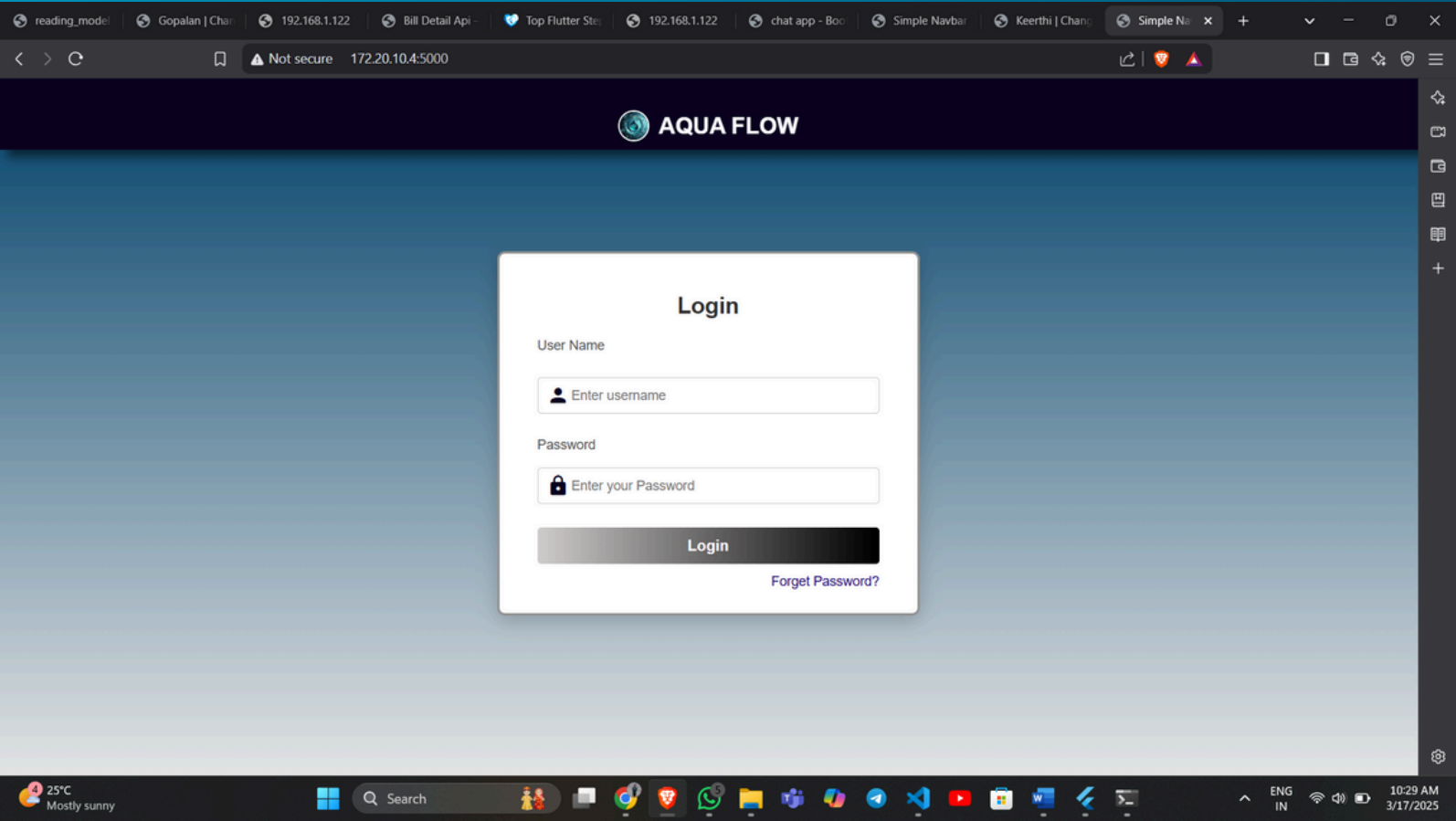


EDIT PROFILE

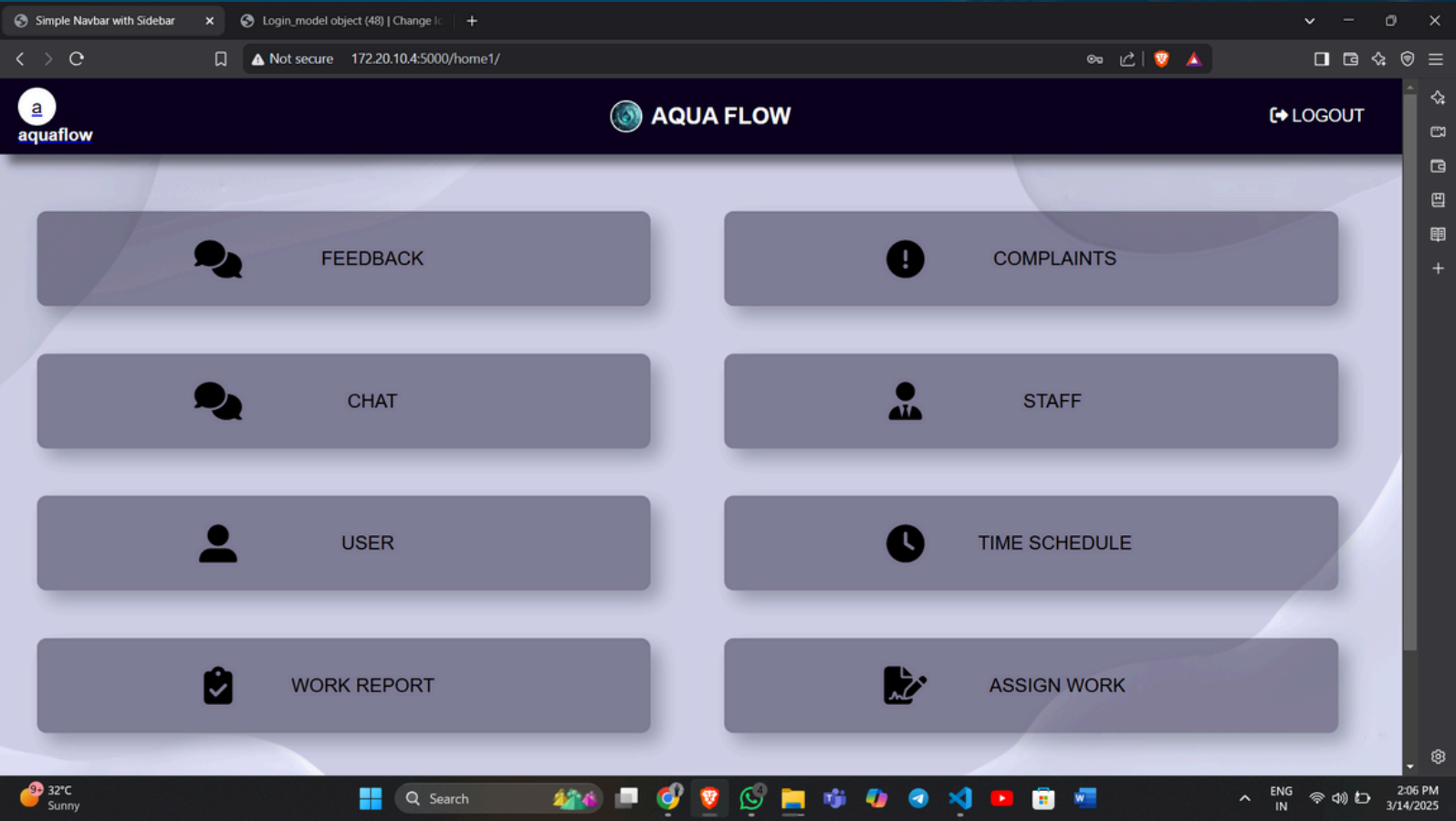


3.AUTHORITY

LOGIN PAGE



AUTHORITY HOME



FEEDBACK

reading_model

Gopalan | Chat

192.168.1.122

Bill Detail Api

Top Flutter St

192.168.1.122

chat app - Bos

Simple Navba

Select feedbac

Simple Na

172.20.10.4:5000/feedback/

AQUA FLOW

Gayathri Ashok k

Sreeja Kumar None

Sreeja Kumar None

FEEDBACK: Good service

RATING: 5.0

COMPLAINT: water pipe breaks

ASSIGNED STAFF NAME: Goutham VP

Air: Moderate Now

Search

ENG IN

10:38 AM 3/17/2025

COMPLAINT

reading_model

Gopalan | Chat

192.168.1.122

Bill Detail Api

Top Flutter St

192.168.1.122

chat app - Bos

Simple Navba

Select feedbac

Simple Na

172.20.10.4:5000/complaint/

AQUA FLOW

Varkky None None

Gopalan sasi

Gopalan sasi

PHONE NUMBER: 2322777895

EMAIL: gopalan@gmail.com

ADDRESS: Methottuthazham

CONSUMER NUMBER: 20

PLACE: West Kaithapoyil

COMPLAINT: water pipe breaks

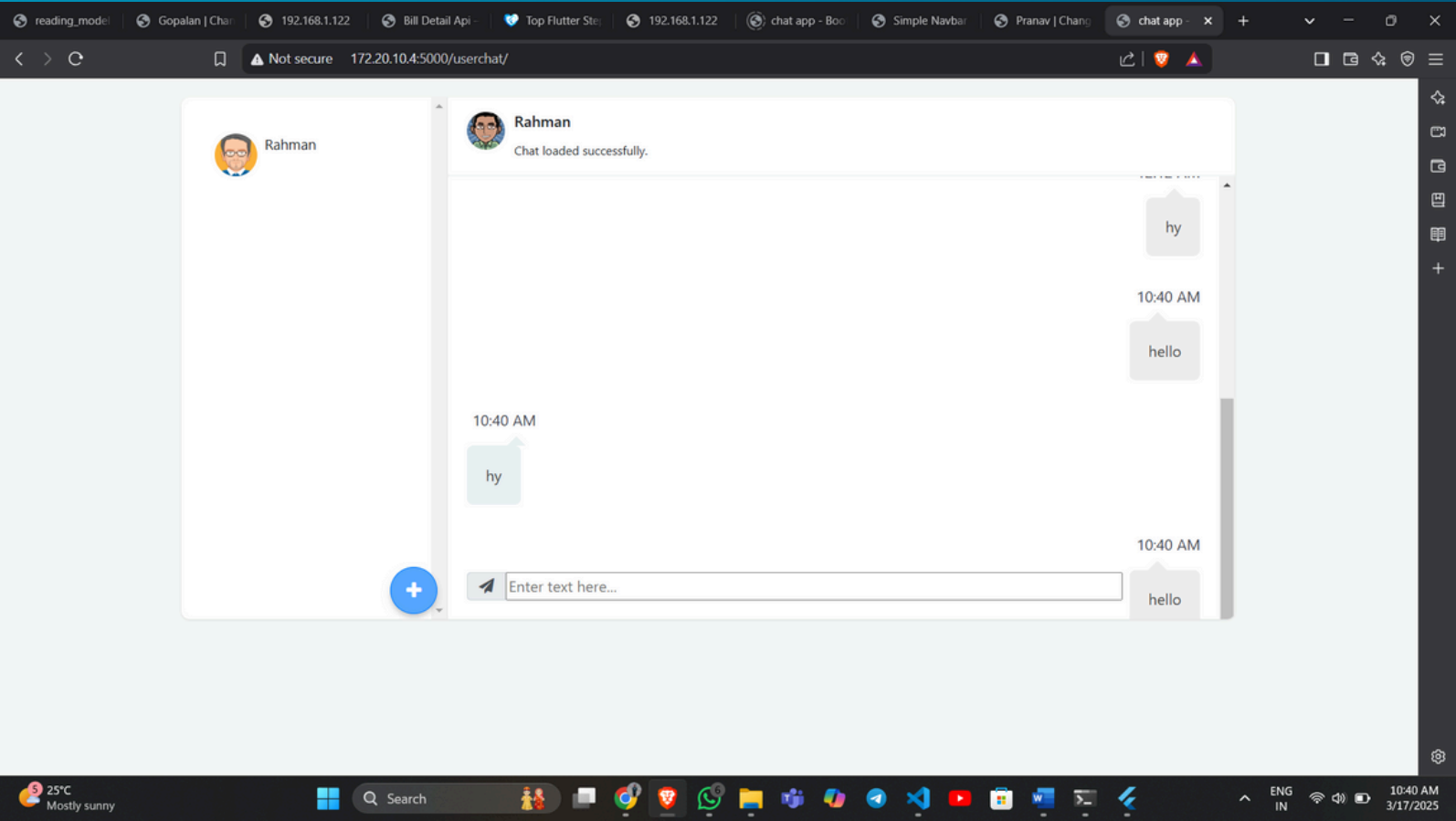
Air: Moderate Now

Search

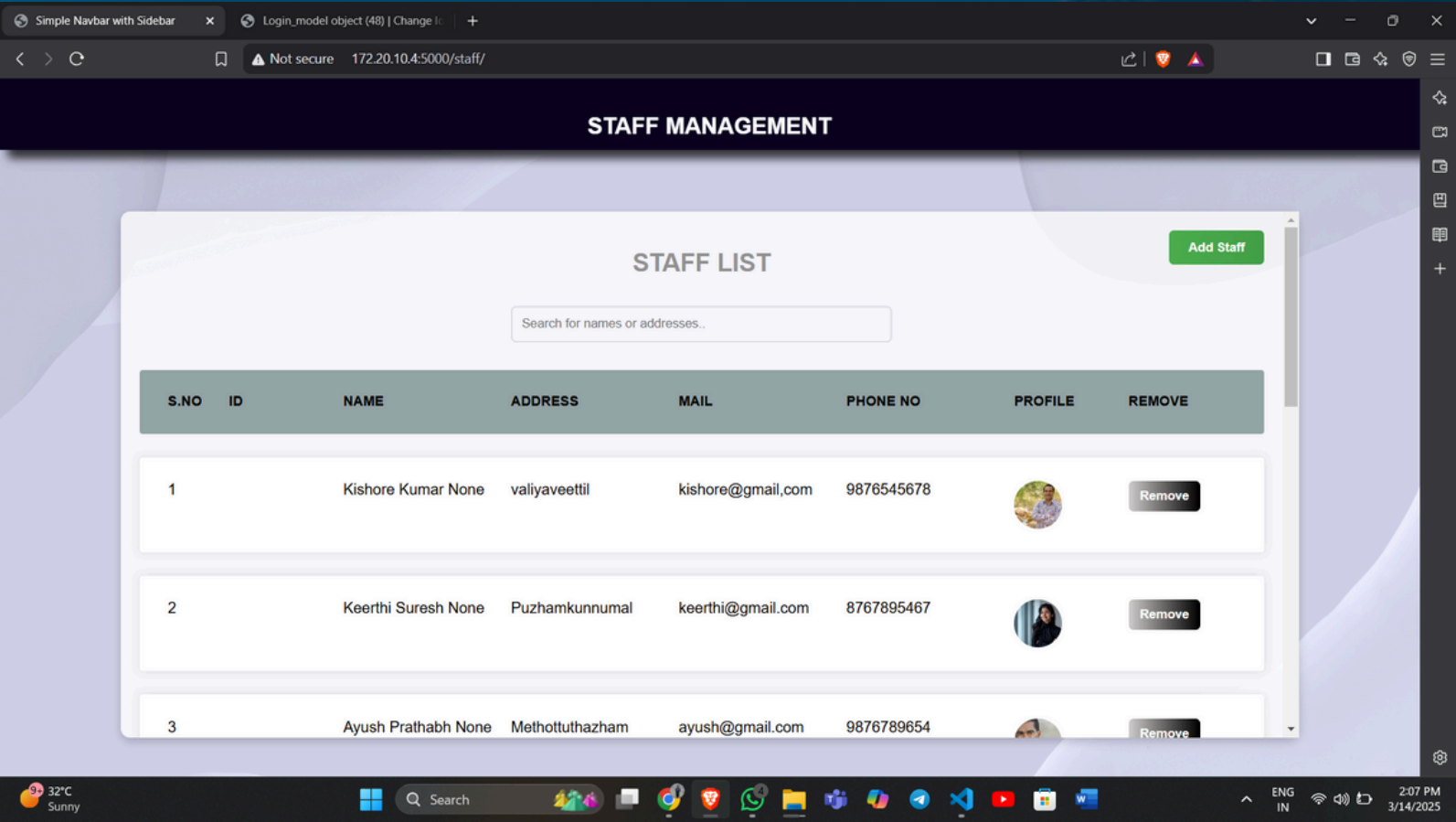
ENG IN

10:38 AM 3/17/2025

CHAT WITH USER



VIEW STAFF



ADD STAFF

Simple Navbar with Sidebar

Login_model object (48) | Change l...

172.20.10.4:5000/staff/

STAFF MANAGEMENT

STAFF LIST

Add Staff

S.NO	ID	NAME	PROFILE	REMOVE
1		Kishore		<button>Remove</button>
2		Keerthi		<button>Remove</button>
3		Ayush Prathabh None Methottuthazham ayush@gmail.com 9876789654		<button>Remove</button>

ADD STAFF

Staff name

Enter username

Password

Enter your Password

Re-Password

Enter your Password

Add

32°C Sunny

Search

2:07 PM 3/14/2025

USER

Simple Navbar with Sidebar

Login_model object (48) | Change l...

172.20.10.4:5000/user/

USER MANAGEMENT

USERS

Search for names or addresses..

S.NO	ID	NAME	ADDRESS	CONSUMER NO	MAIL	PHONE NO	PROFILE	REMOVE
1		Gayathri Ashok k	kunnumal	1	gayathri@gmail.com	9876543213		<button>Remove</button>
2		Divakaran Babu None	valiyaveetil	2	divakaran@gmail.com	9067854323		<button>Remove</button>
3		Sreeja Kumar None	Methottuthazham	3	sreeja@gmail.com	9765432123		<button>Remove</button>

32°C Sunny

Search

2:07 PM 3/14/2025

TIME SCHEDULE

EDIT TIME

Simple Navbar with Sidebar

Login_model object (48) | Change I: | +

Not secure 172.20.10.4:5000/time/

Share | Lock | Fullscreen | Settings | Menu

AQUA FLOW

Calendar

< March 2025 >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
23	24	25	26	27	28	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	31	1	2	3	4	5

32°C Sunny

Search

ENG IN

2:07 PM 3/14/2025

Simple Navbar with Sidebar

Login_model object (48) | Change I: | +

Not secure 172.20.10.4:5000/time/

Share | Lock | Fullscreen | Settings | Menu

AQUA FLOW

Modal

16 17 18 19 20 21 22

23 24 25 26 27 28 29

30 31 1 2 3 4 5

Selected Date: 12 March 2025

Enter morning Time: --:-- --

Enter evening Time: --:-- --

Save

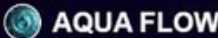
32°C Sunny

Search

ENG IN

2:08 PM 3/14/2025

ASSIGNED WORK LIST



ASSIGN WORK



Kishore Kumar None



Keerthi Suresh None



Ayush Prathabh None



Kamal Khan None



Alex Perera

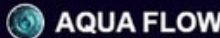


Alex Perera



Alex Perera

ASSIGNED WORK



ASSIGN WORK



Kishore Kumar None



Keerthi Suresh None



Ayush Prathabh None



Kamal Khan None



Alex Perera



Alex Perera



Alex Perera

NAME : Amal Jyothi None

PHONE NUMBER : 9756876543

EMAIL : amal@gmail.com

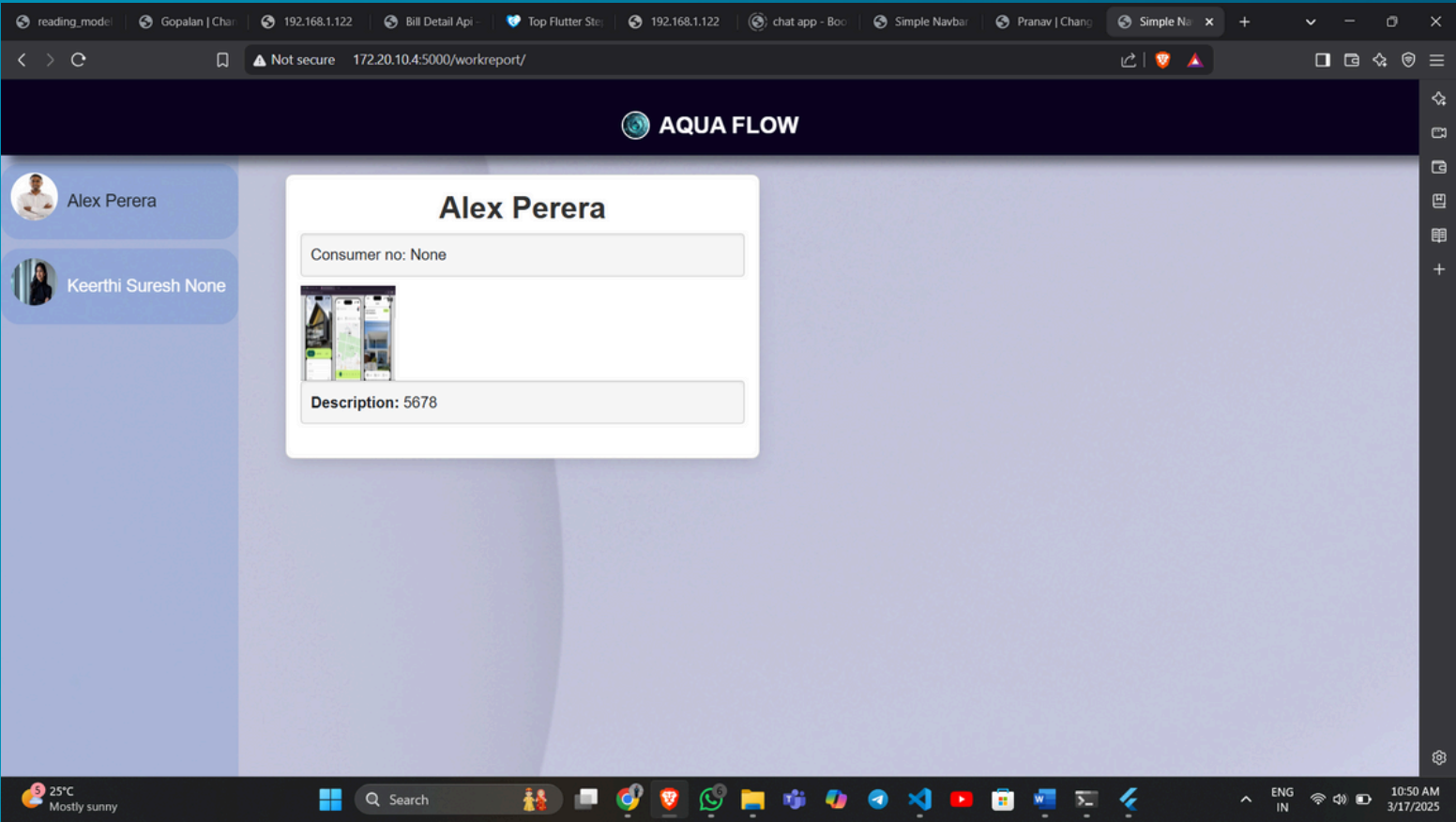
ADDRESS : Melettu

CONSUMER NUMBER : 6

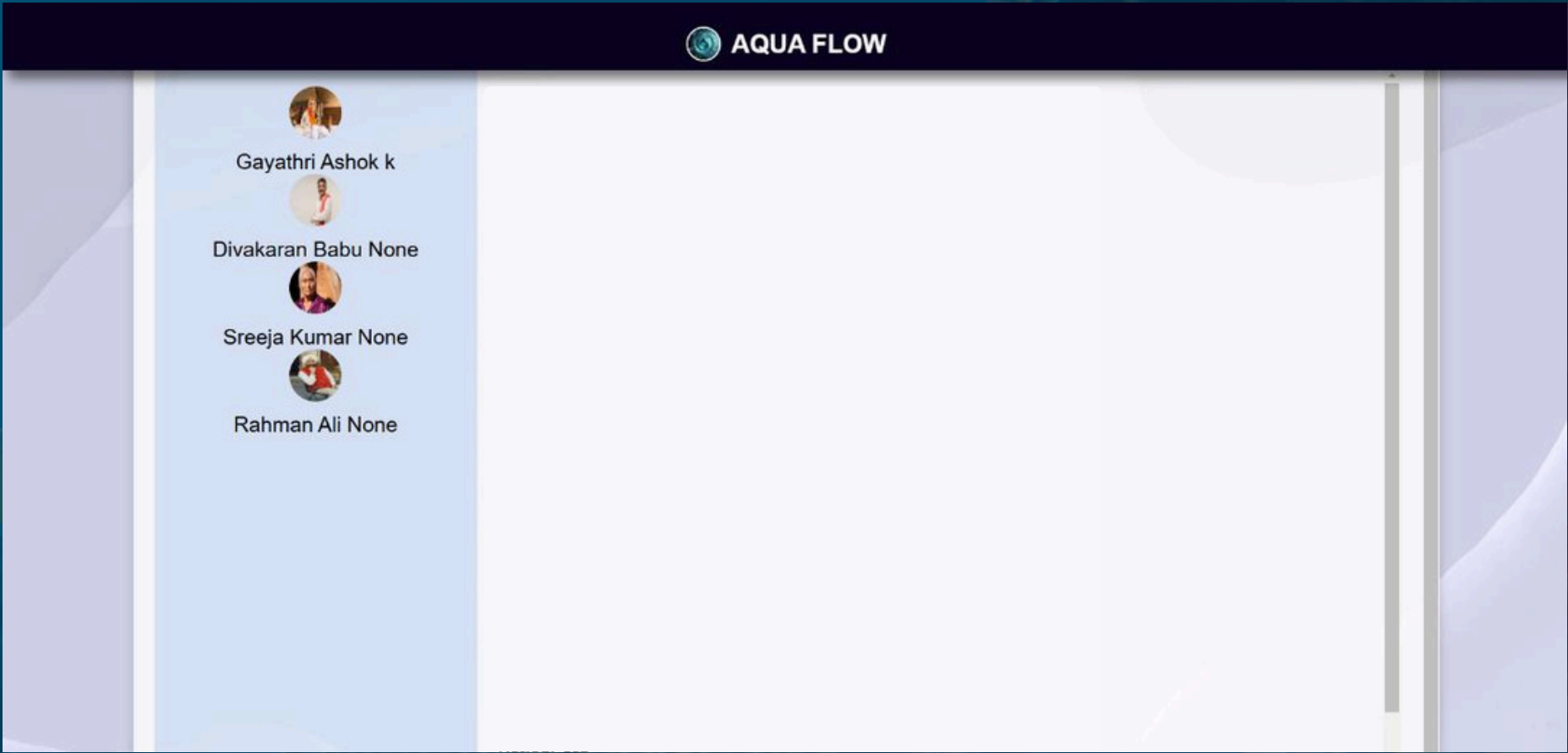
WORK : The pipe has been broken

PLACE : Kannapankund

UPDATE REPORT



REQUESTS



VIEW REQUEST

[illegible]


AQUA FLOW



Sreeja Kumar None



Rahman Ali None

Father_name : Ashok

Mother_name :

Address : Kunnummal

Phone_no : 9734543567

Family_members : 7

Adhar_no : 981234543456

Rationcard : APL

Neighbourconsumer_no : 2

Cast : Nayar

Aadhaar



RationCard

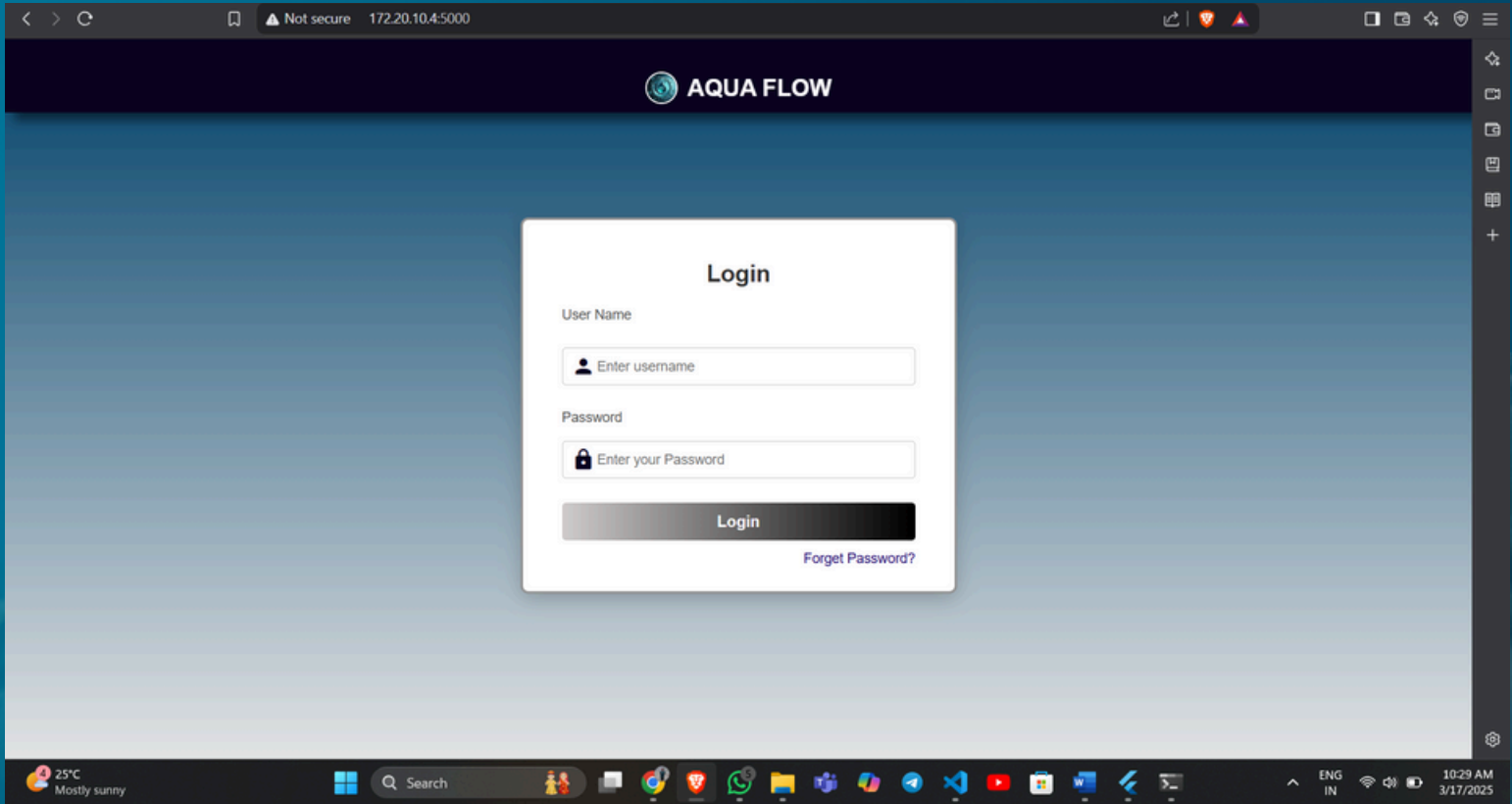


OwnershipCertificate

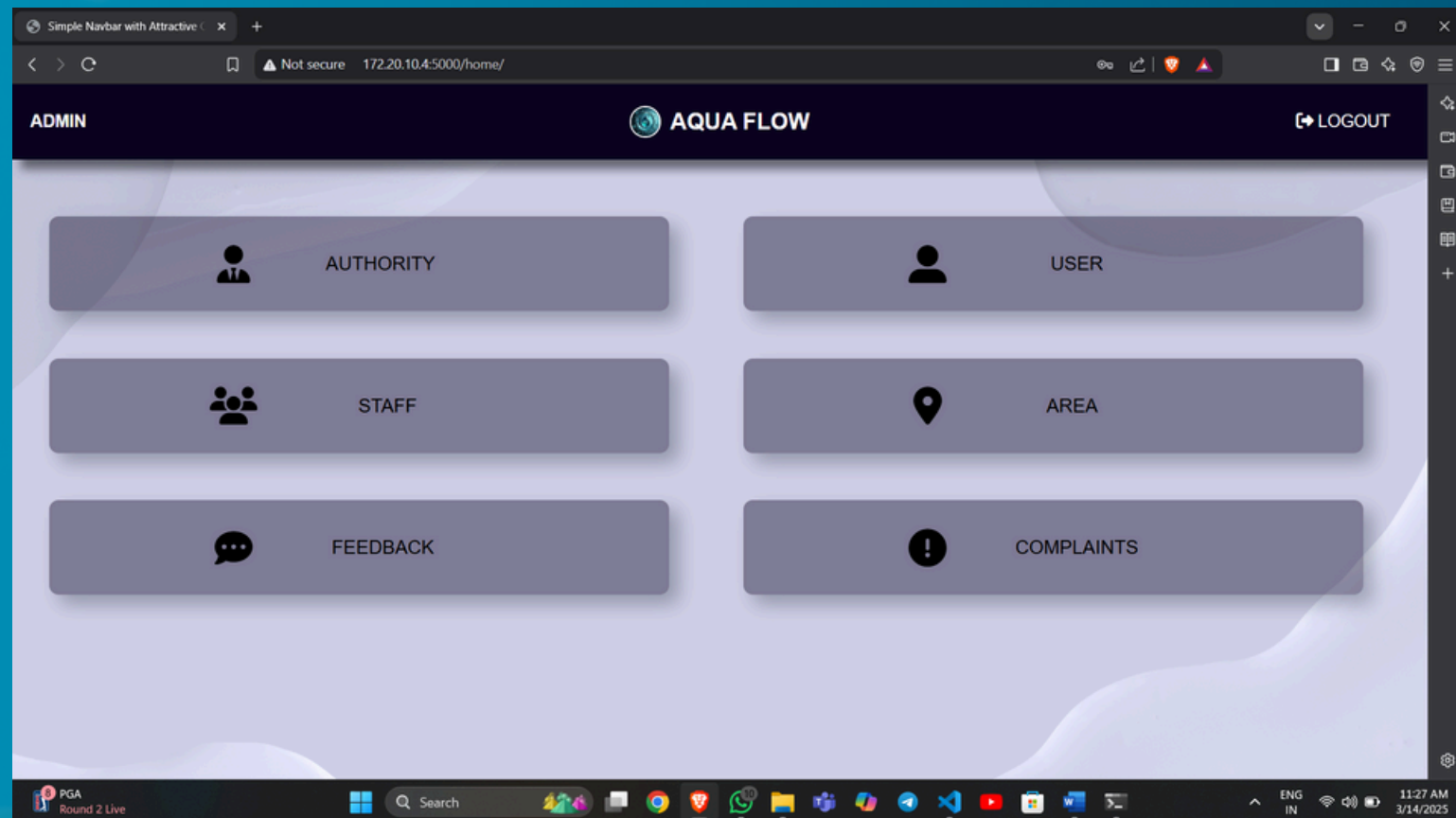


4.ADMIN

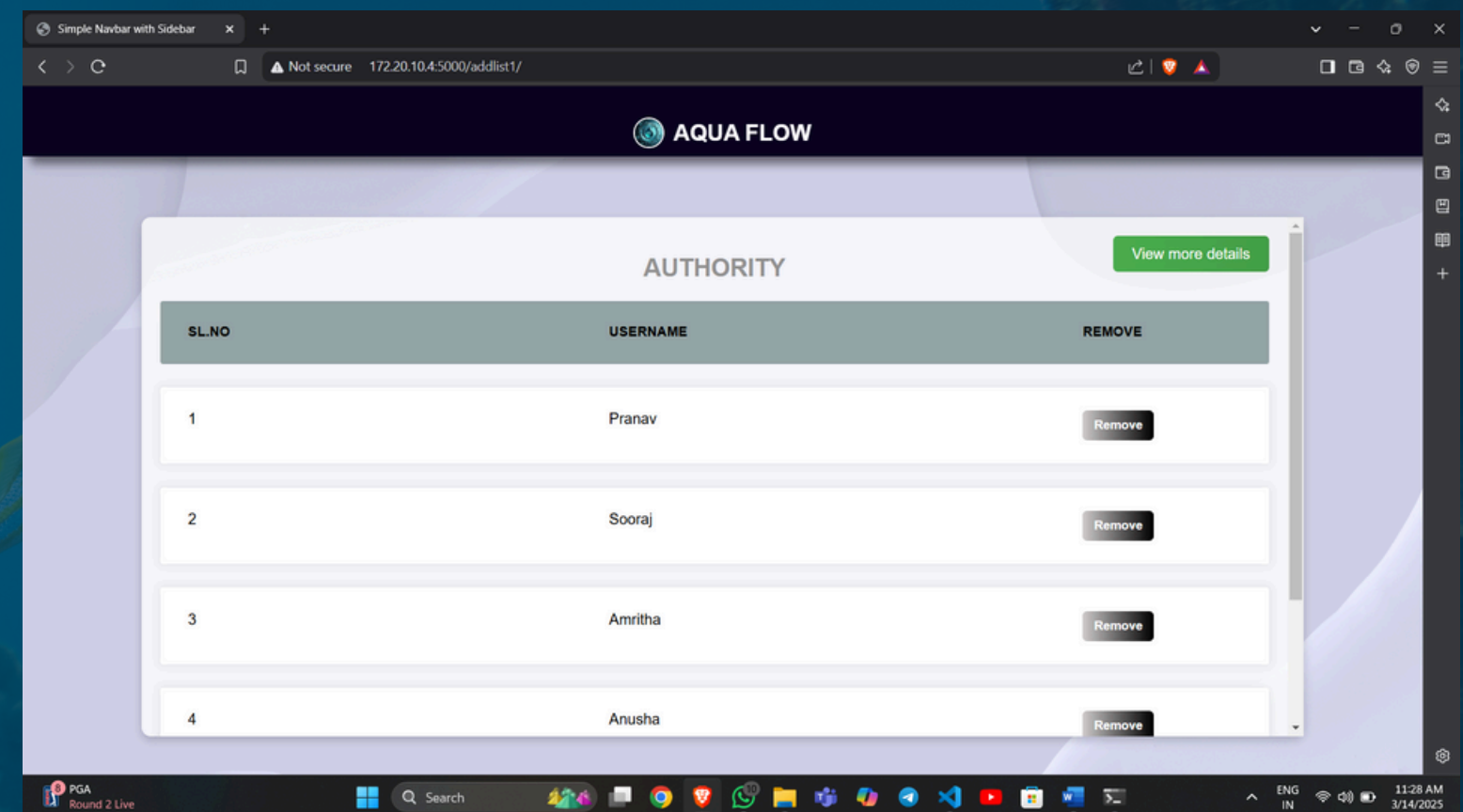
LOGIN PAGE



HOME PAGE

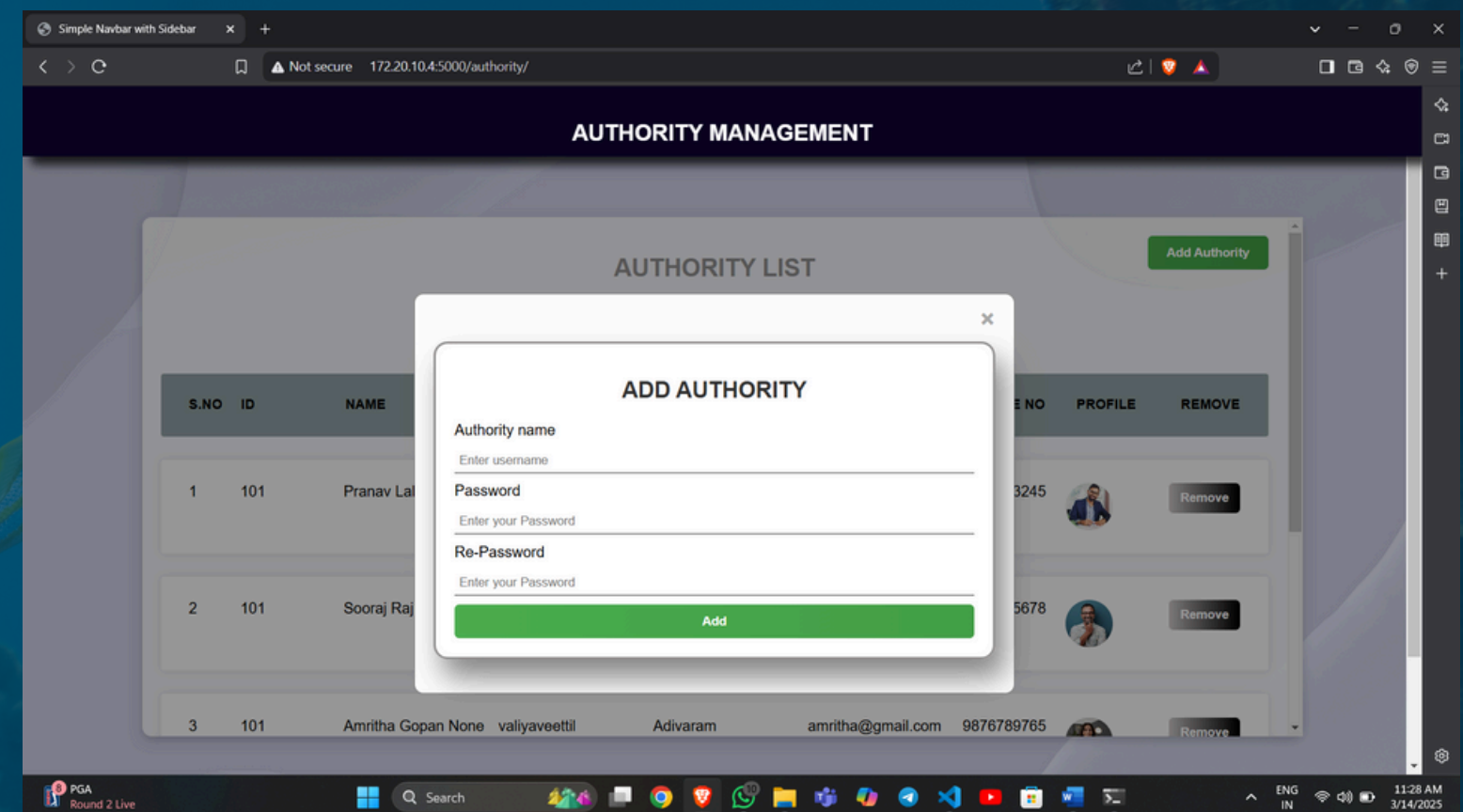
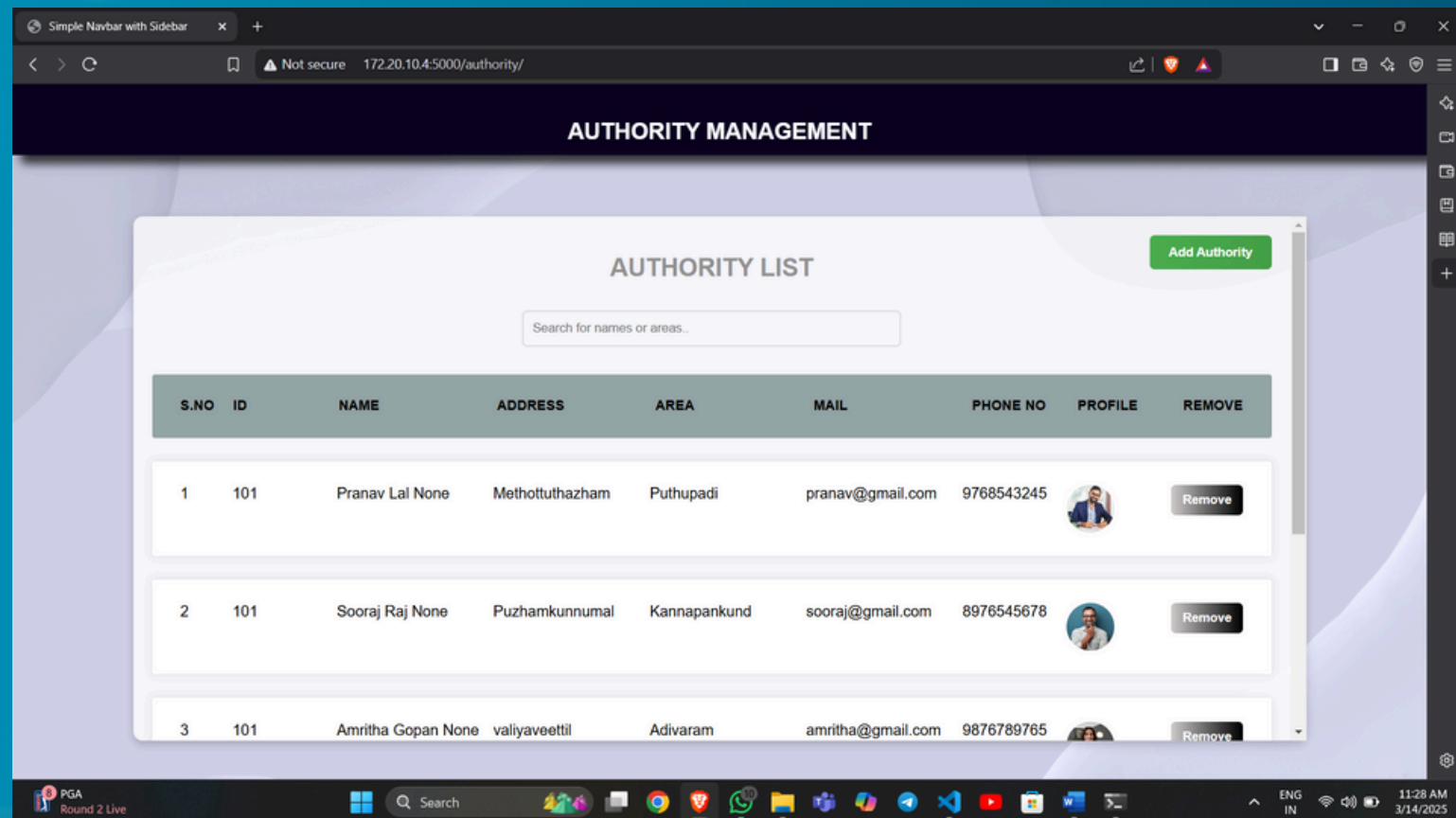


AUTHORITY

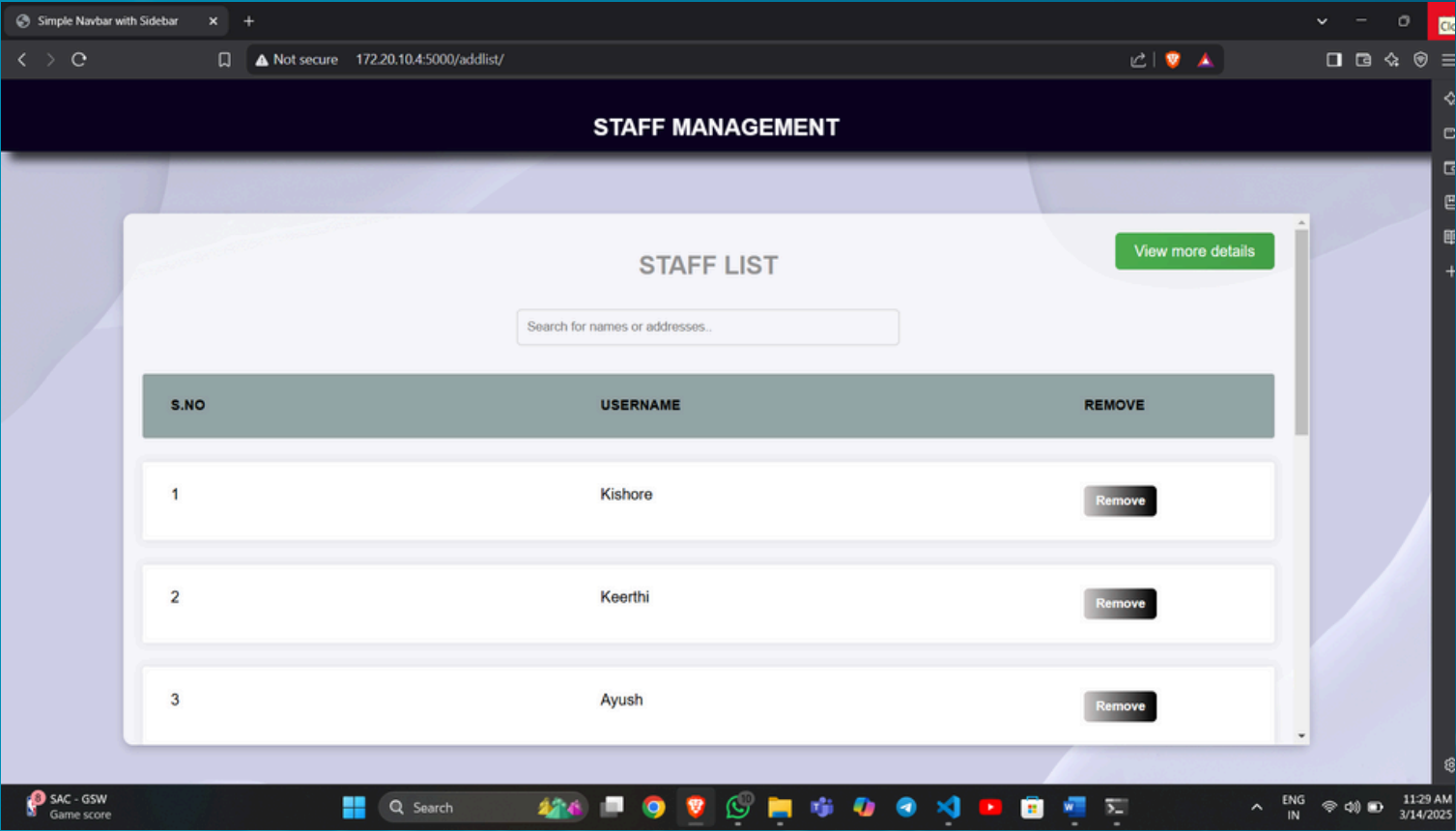


[VIEW AUTHORITY DETAILS](#)

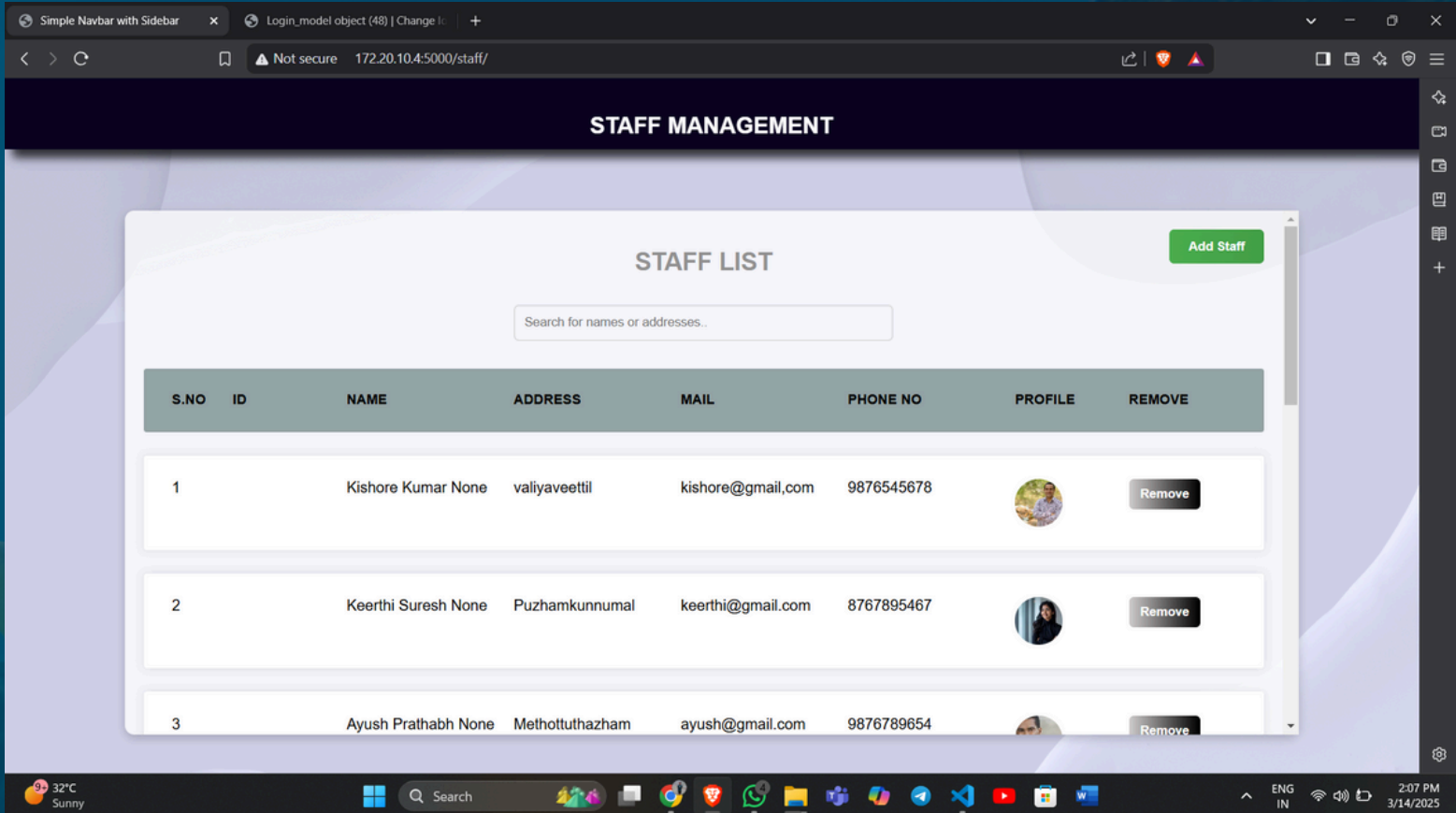
ADD AUTHORITY



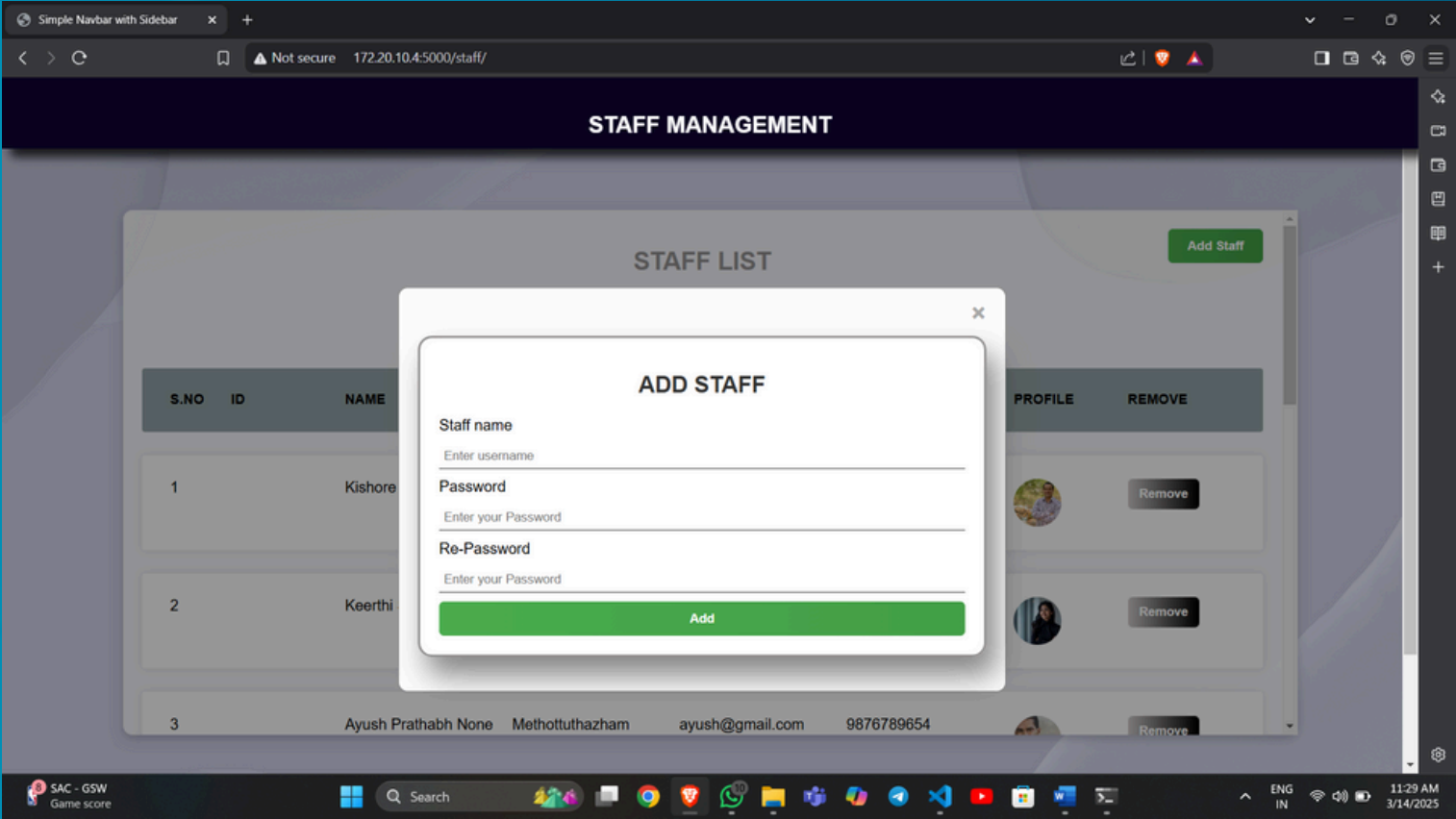
STAFF LIST



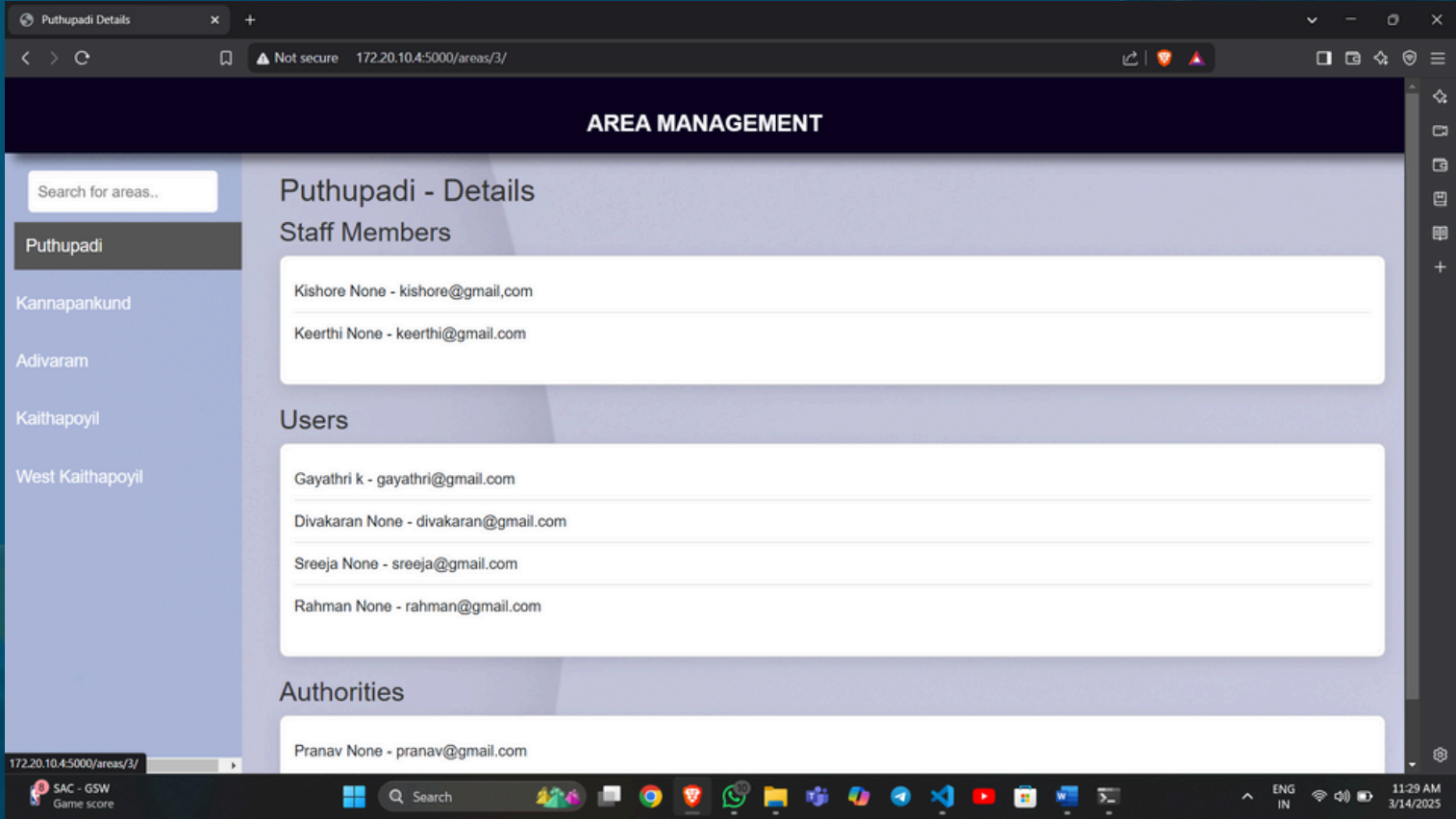
STAFF DETAILS



ADD STAFF



AREA



COMPLAINT

Amal Jyothi None

Neelima Arjun None

Joy Mathew None

Rose Martin None

Varkky None None

AQUA FLOW

Amal Jyothi None

PHONE NUMBER: 9756876543

EMAIL: amal@gmail.com

ADDRESS: Melettu

CONSUMER NUMBER: 6

PLACE: Kannapankund

COMPLAINT: Water Leakage

FEEDBACK

Amal Jyothi None

Neelima Arjun None

Joy Mathew None

Rose Martin None

Varkky None None

AQUA FLOW

Amal Jyothi None

FEEDBACK: work succesfully completed

RATING: 4.0

COMPLAINT: Water Leakage

ASSIGNED STAFF NAME: Kishore Kumar

CONCLUSION

The Panchayath Water Supply Management System (PWSMS) streamlines water distribution and service management by digitizing processes like supply scheduling, connection requests, and complaint tracking. This centralized, user-friendly platform improves efficiency, transparency, and responsiveness, offering real-time access to residents and seamless management for administrative staff. With the involvement of technical teams and regulatory bodies, PWSMS ensures timely issue resolution and regulatory compliance, fostering better governance and a more reliable, sustainable water supply system.



THANK YOU

SIBIN K S (LIAWSCS021)