Project Report: Service Desk for Customer Complaint Resolution

PROJECT TEAM DETAILS

Team ID	LTVIP2025TMID58285
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1. INTRODUCTION

1.1 Project Overview

The Service Desk Application is a full-stack web-based complaint management system designed to streamline the lifecycle of service requests. It provides a centralized platform for users to register complaints, for agents to respond and resolve issues, and for administrators to manage roles and oversee the overall operations.

1.2 Purpose

The purpose of this report is to document the entire development cycle of the Service Desk Application—from ideation to deployment. It outlines problem identification, solution design, requirement specifications, planning, development, and testing to provide a holistic understanding of the system.

2. PROJECT OVERVIEW

2.1 Purpose

ResolveNow is a comprehensive platform that streamlines complaint handling and service request management for organizations. It bridges the communication gap between users and agents, offers real-time tracking, and provides administrative oversight tools.

2.2 Features

- Secure JWT-based authentication for multiple roles (user, agent, admin)
- Complaint registration and live tracking
- Real-time messaging via Socket.io
- Role-based dashboards
- Complaint assignment and status update system
- Admin panel for user and agent management

3. SYSTEM ARCHITECTURE

3.1 Frontend

- Built with React.js and Tailwind CSS
- Role-based components under `src/components/` for client, technician, and supervisor
- Real-time updates using WebSockets (Socket.io-client)
- Reusable UI elements (forms, dashboards, communication windows)

3.2 Backend

- Developed using Node.js and Express.js
- Organized in modular folders (models, routes, middleware)
- RESTful API endpoints secured with JWT middleware
- Real-time communication using Socket.io

3.3 Database

- MongoDB with Mongoose ODM
- **Collections**: users, complaints, messages □ **Schemas**:
  - `User.js`: name, email, password (hashed), role
  - `Complaint.js`: subject, description, status, assigned agent, timestamps o `Message.js`: sender, recipient, message text, timestamps

4. SETUP INSTRUCTIONS

4.1 Prerequisites

- Node.js (v16+)
- MongoDB installed or hosted (e.g., MongoDB Atlas) □ Git

4.2 Installation

- Clone the repository

```
o git clone
  https://github.com/EswarAdeshCh/Servic
  e_Desk.git o cd Service_Desk
```

- Setup backend

```
o cd backend o npm install o touch .env
o # Add MongoDB URI, JWT_SECRET, etc. in
  .env
```

- Setup frontend

```
o cd ../frontend o npm install
```

5. FOLDER STRUCTURE

5.1 Client (Frontend)

```
 frontend/
├── public/
│   └── placeholder images and index.html
├── src/
│   ├── components/
│   │   ├── auth/
│   │   │   ├── AuthenticationPage.jsx
│   │   │   └── RegistrationPage.jsx
│   │   ├── client/
│   │   │   ├── ClientPortal.jsx
│   │   │   ├── IssueSubmissionForm.jsx
│   │   │   └── IssueTracker.jsx
│   │   ├── common/
│   │   │   ├── CommunicationWindow.jsx
│   │   │   └── WelcomePage.jsx
│   │   ├── supervisor/
│   │   │   ├── ClientManagement.jsx
│   │   │   ├── SupervisorHub.jsx
│   │   │   └── TechnicianManagement.jsx
│   │   └── technician/
│   │       └── TechnicianWorkspace.jsx
├── app.jsx
├── index.js
```

5.2 Server (Backend)

```
 backend/
├── middleware/
│   └── auth.js
├── models/
│   ├── Complaint.js
│   ├── Message.js
│   └── User.js
├── routes/
│   ├── admin.js
│   ├── agents.js
│   ├── auth.js
│   ├── complaints.js
│   ├── messages.js
│   └── users.js
├── server.js
```

6. RUNNING THE APPLICATION

6.1 Frontend

```
cd  frontend
npm    start
```

6.2 Backend

```
cd backend
npm start
```

7. AUTHENTICATION

7.1 Token-based Authentication

- JWTs issued during login
- Stored in localStorage/cookies on frontend
- `auth.js` middleware verifies tokens and grants role-based access

7.2 Password Encryption

- Bcrypt used to hash user passwords before storing in MongoDB

8. USER INTERFACE

8.1 Role-based Pages

- **Login/Registration Pages**
- **User Dashboard**: Complaint submission and tracking
- **Agent Dashboard**: Assigned complaints and chat interface
- **Admin Dashboard**: Complaint assignment, user/agent management

9. TESTING

9.1 Manual Testing Tools

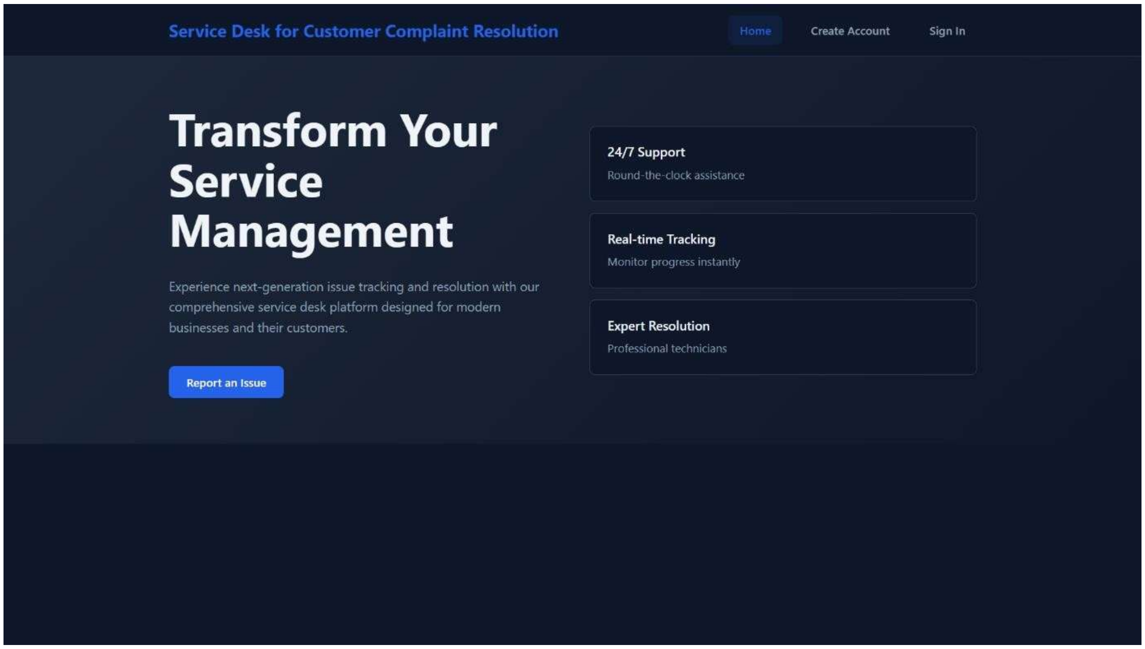
- Postman (API testing)
- Browser DevTools (UI & WebSocket testing)

9.2 Automated Testing (Future Scope)

- Jest for backend
- React Testing Library for frontend

10. SCREENSHOTS OR DEMO

- Landing Page



Transform Your Service Management

Experience next-generation issue tracking and resolution with our comprehensive service desk platform designed for modern businesses and their customers.

24/7 Support

Round-the-clock assistance

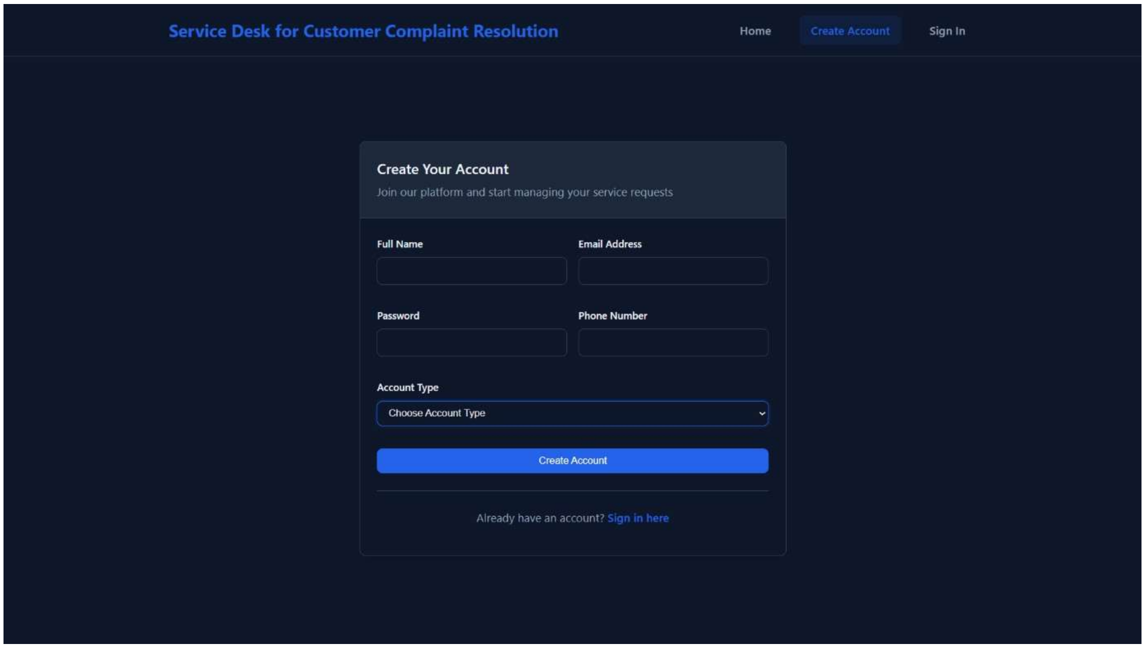
Real-time Tracking

Monitor progress instantly

Expert Resolution

Professional technicians

- Signup Page



Create Your Account

Join our platform and start managing your service requests

Full Name

Email Address

Password

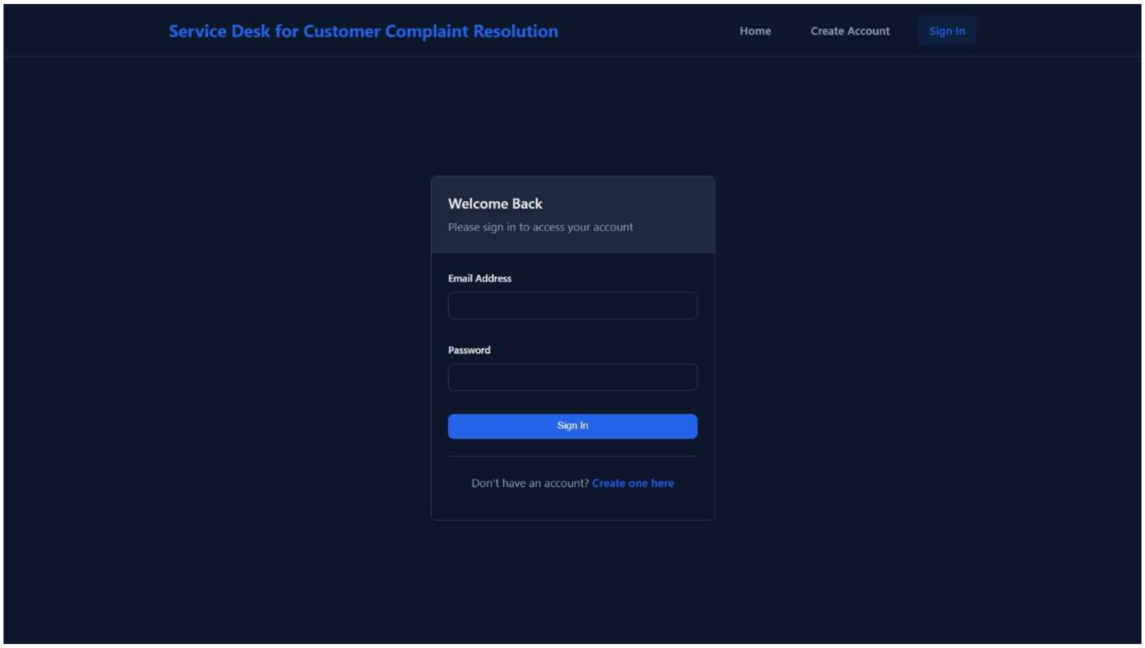
Phone Number

Account Type

Choose Account Type

Already have an account? Sign in here

- Login Page



Welcome Back

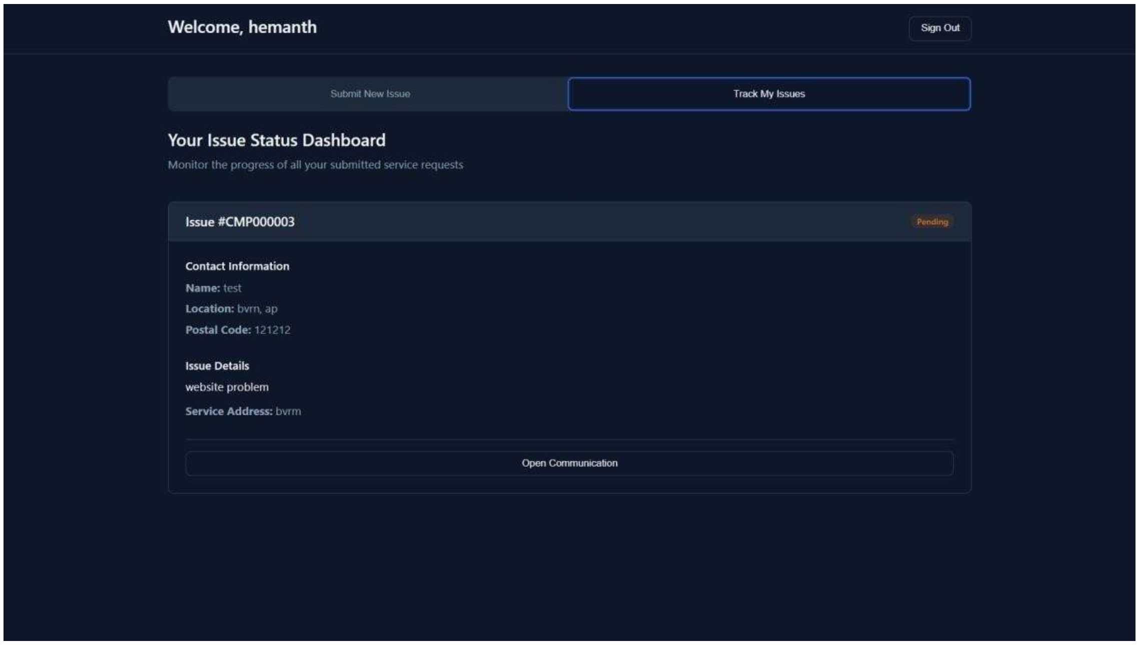
Please sign in to access your account

Email Address

Password

Don't have an account? Create one here

- User Complaint Dashboard



Welcome, hemanth

Your Issue Status Dashboard

Monitor the progress of all your submitted service requests

Issue #CMP000003

Contact Information

Name: test

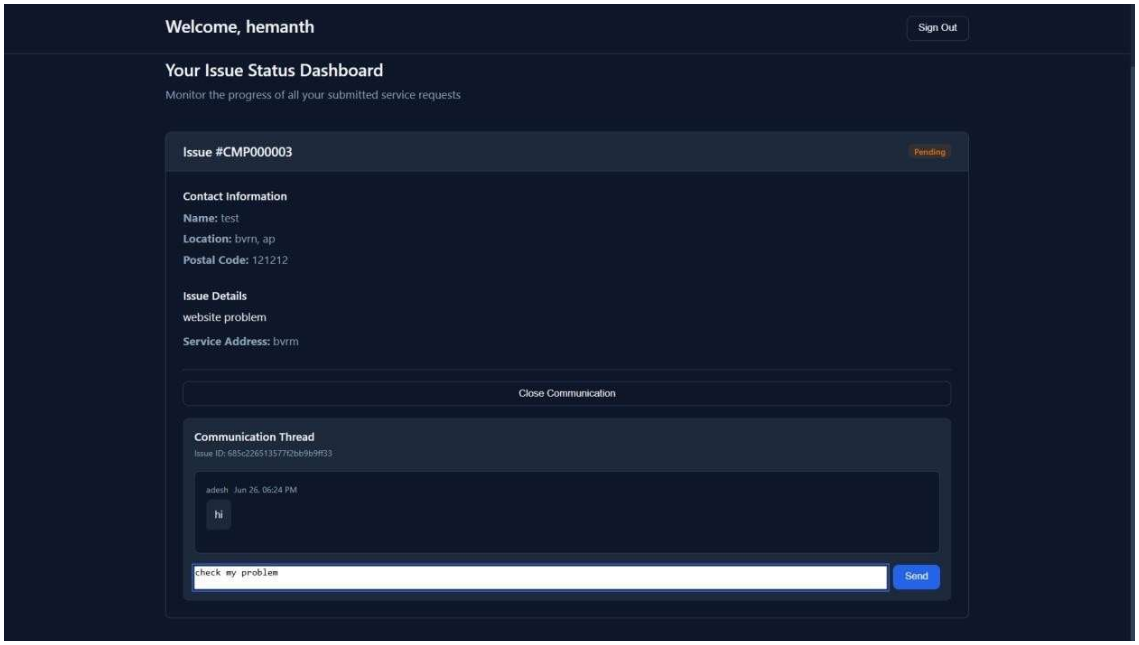
Location: bvrn, ap

Postal Code: 121212

Issue Details

website problem

Service Address: bvrm



Welcome, hemanth

Your Issue Status Dashboard

Monitor the progress of all your submitted service requests

Issue #CMP000003 Pending

Contact Information

Name: test

Location: bvrn, ap

Postal Code: 121212

Issue Details

website problem

Service Address: bvrm

Communication Thread

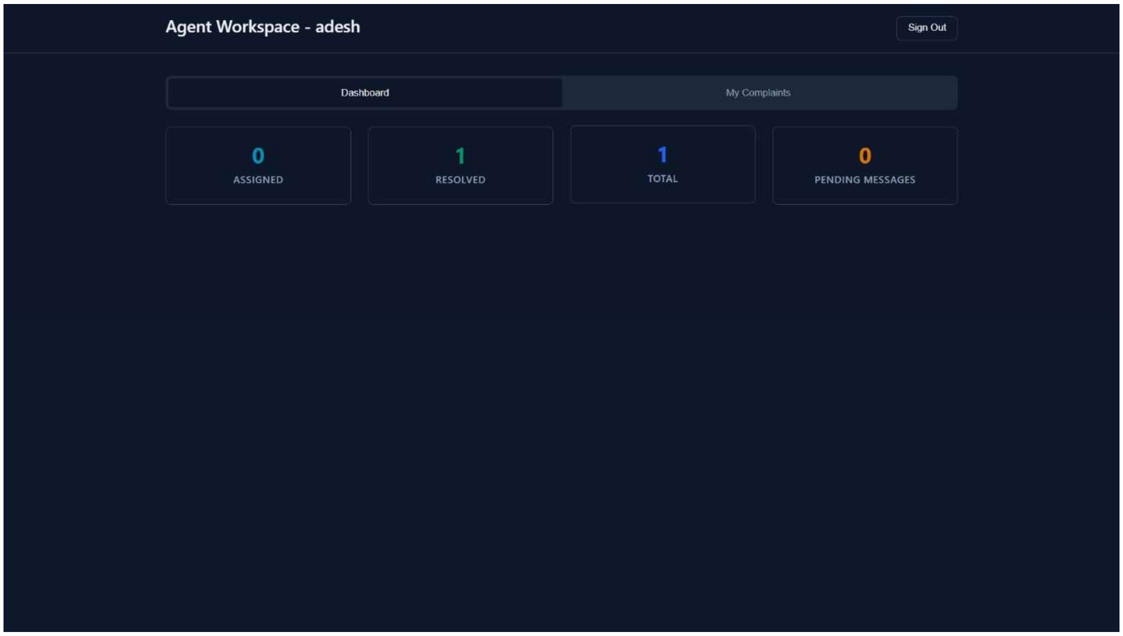
Issue ID: 685c226513577f2bb9b9ff33

adesh Jun 26, 06:24 PM

hi

check my problem

- Agent Complaint View



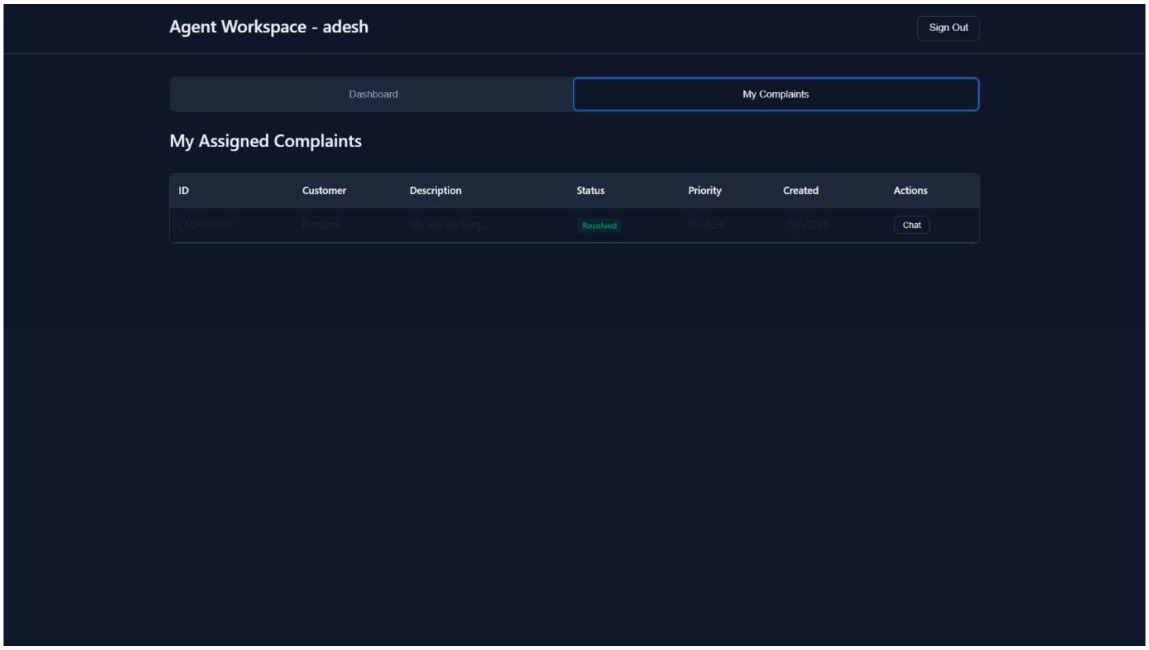
Agent Workspace - adesh

0 ASSIGNED

1 RESOLVED

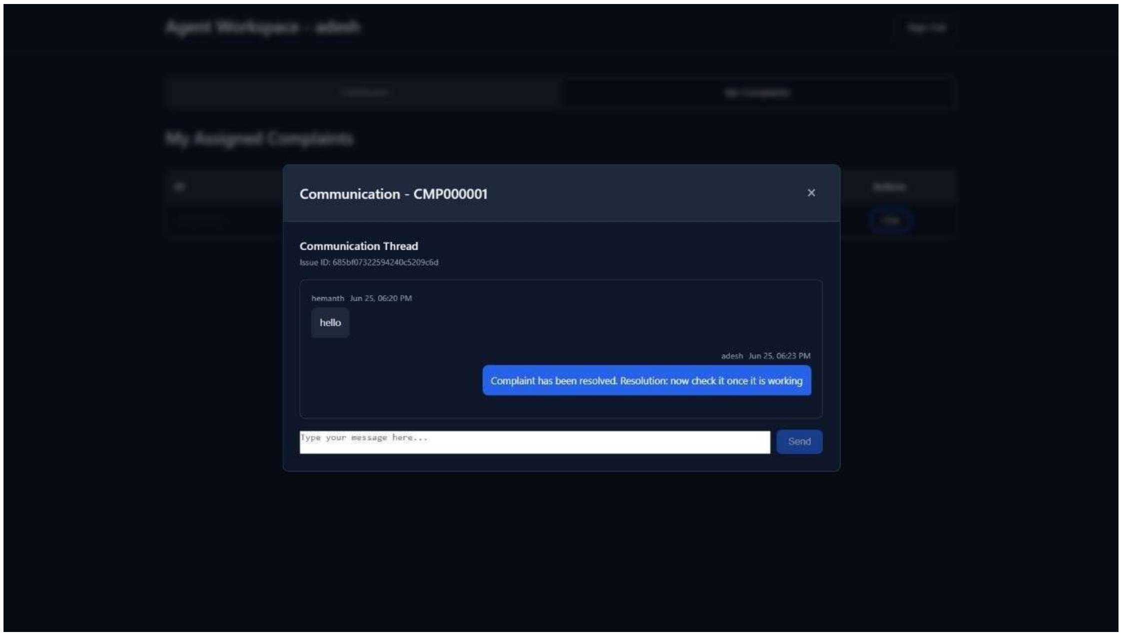
1 TOTAL

0 PENDING MESSAGES



My Assigned Complaints

ID	Customer	Description	Status	Priority	Created	Actions
CMP000001	hemanth	lift not working...	Resolved	Medium	25/6/2025	Chat



Communication - CMP000001

Communication Thread

Issue ID: 685bf07322594240c5209c6d

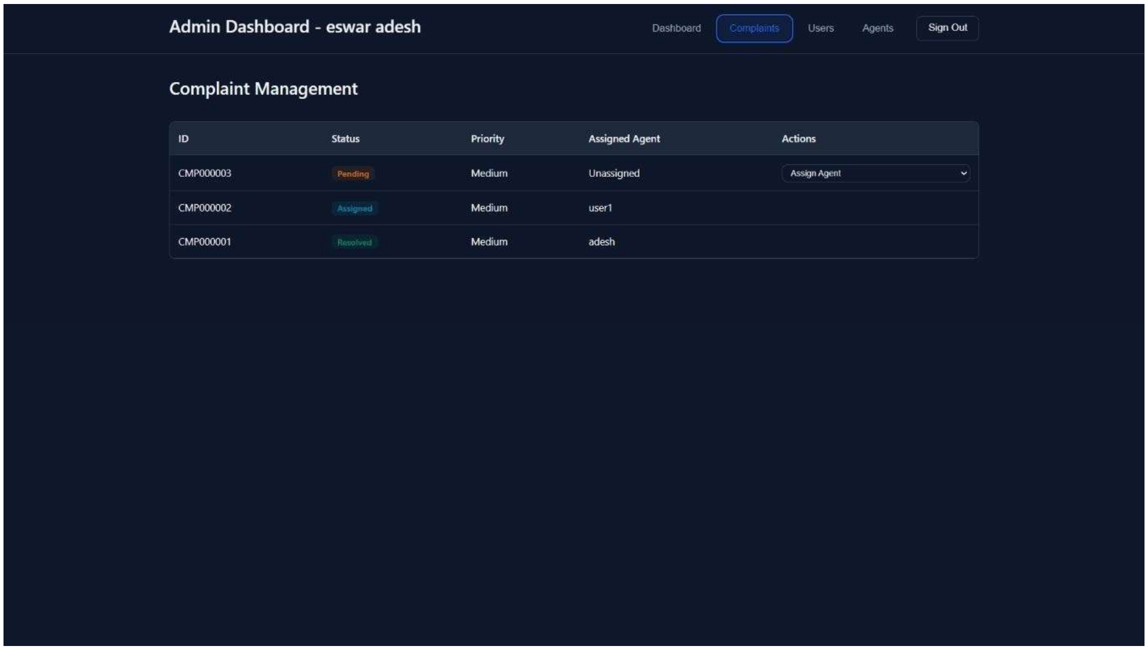
hemanth Jun 25, 06:20 PM

hello

adesh Jun 25, 06:23 PM

Complaint has been resolved. Resolution: now check it once it is working

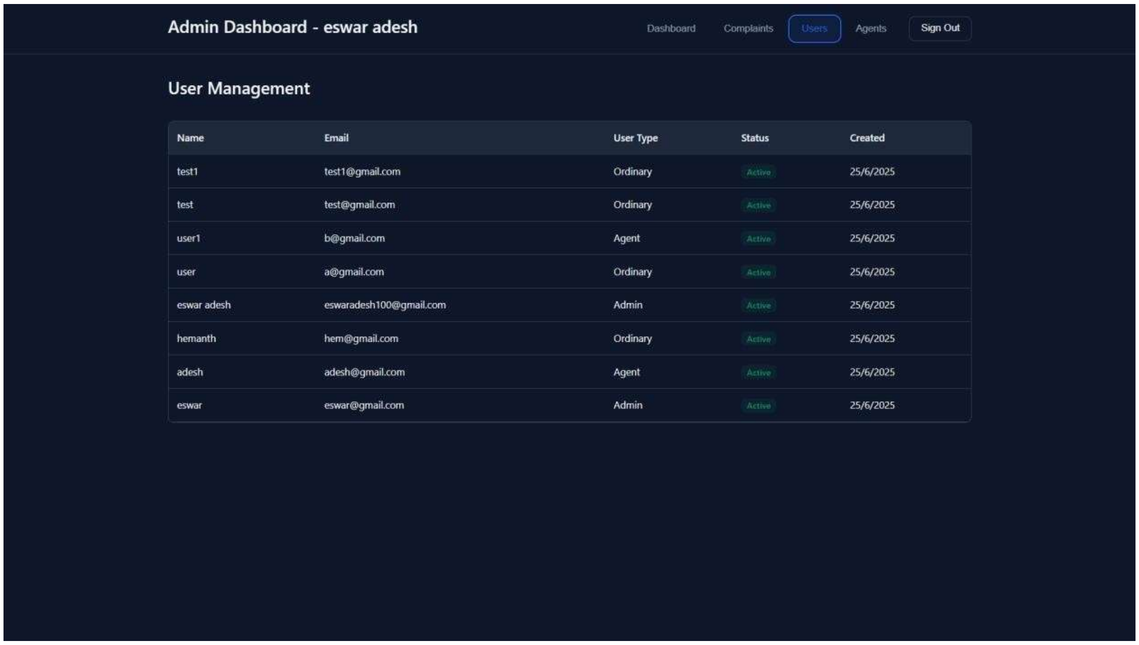
- Admin Dashboard



Admin Dashboard - eswar adesh

Complaint Management

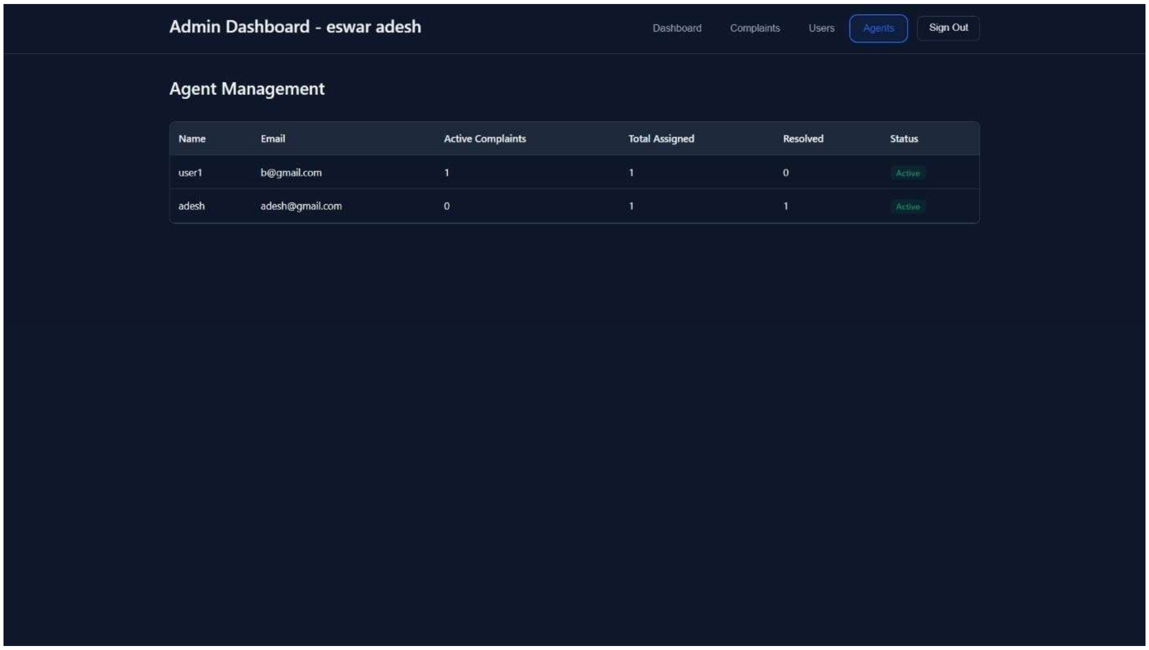
ID	Status	Priority	Assigned Agent	Actions
CMP000003	Pending	Medium	Unassigned	Assign Agent
CMP000002	Assigned	Medium	user1	
CMP000001	Resolved	Medium	adesh	



Admin Dashboard - eswar adesh

User Management

Name	Email	User Type	Status	Created
test1	test1@gmail.com	Ordinary	Active	25/6/2025
test	test@gmail.com	Ordinary	Active	25/6/2025
user1	b@gmail.com	Agent	Active	25/6/2025
user	a@gmail.com	Ordinary	Active	25/6/2025
eswar adesh	eswaradesh100@gmail.com	Admin	Active	25/6/2025
hemanth	hem@gmail.com	Ordinary	Active	25/6/2025
adesh	adesh@gmail.com	Agent	Active	25/6/2025
eswar	eswar@gmail.com	Admin	Active	25/6/2025



Admin Dashboard - eswar adesh

Agent Management

Name	Email	Active Complaints	Total Assigned	Resolved	Status
user1	b@gmail.com	1	1	0	Active
adesh	adesh@gmail.com	0	1	1	Active

11. GITHUB & PROJECT DEMO LINK

- **Source Code GitHub Link :** **https://github.com/ch-santosh/smartbrige-mernstack.git□**
- **Demo Video Link:** **https://youtu.be/Wx6UCJNLP3w?si=6zZh4w0klMdYFJqd**

12. Known Issues

- No offline support
- Initial deployment requires stack familiarity
- Mobile responsiveness needs further refinement

13. Future Enhancements

- Mobile app using React Native or Flutter
- AI chatbot integration for complaint intake
- SMS and email notifications
- Multi-language support
- Advanced analytics and visual reports
- Integration with CRM systems