Project Report: Service Desk for Customer Complaint Resolution

1. INTRODUCTION

1.1 Project Overview

The **Service Desk Complaint Management System** is an integrated platform for users to register complaints, track resolutions, and interact with support agents. It includes customer-facing interfaces (mobile and web), agent dashboards for resolving issues, and an admin dashboard for monitoring overall operations. The system supports user registration, login, complaint submission, live chat, analytics, and user management.

1.2 Purpose

The purpose is to streamline complaint handling, reduce resolution time, and enhance customer satisfaction by providing an organized, transparent, and interactive system that allows users to raise issues and receive real-time support.

2. IDEATION PHASE

2.1 Problem Statement

Existing systems lack transparency and responsiveness, causing customer dissatisfaction. There is no centralized mechanism for users to file complaints and get real-time assistance or updates.

2.2 Empathy Map Canvas

- **Says:** "My issue is unresolved."
- **Thinks:** "Will I get help this time?"
- **Does:** Sends complaints via phone/email
- **Feels:** Frustrated, ignored, helpless

2.3 Brainstorming

- Mobile-friendly interface
- Complaint tracking
- Admin dashboard
- Real-time chat
- Auto-assign to agents
- Analytics for management

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

Phase	User Actions	Emotions	System Interaction
Awareness	Learns about the app	Curious	Loads landing page
Registration	Fills registration form	Confident	Registers account
Complaint	Files a complaint	Hopeful	Form submitted
Resolution	Waits for reply	Anxious	Agent replies
Closure	Gets issue resolved	Satisfied	Status: Resolved

3.2 Solution Requirements

- Functional: Registration, Login, Chat, Complaint form
- Non-Functional: Responsive UI, Data security, Fast performance
- Admin: Assign complaints, Analytics dashboard
- Agents: View & respond to complaints

3.3 Data Flow Diagram

Level 1 DFD

```
User → [Login/Register] → System
System ↔ Database
User → [Submit Complaint] → System → [Assign Agent]
Agent ↔ System ↔ Chat
Admin ↔ Dashboard Analytics
```

3.4 Technology Stack

- **Frontend:** React.js (web), Flutter (optional mobile)
- **Backend:** Node.js with Express
- **Database:** MongoDB
- **Authentication:** JWT, bcrypt

4. PROJECT DESIGN

4.1 Problem Solution Fit

Bridges the gap between customers and support teams through a centralized, transparent, and trackable complaint platform.

4.2 Proposed Solution

A full-stack application where:

- Customers can register, log in, submit complaints, and chat.

- Agents manage assigned tickets and respond.
- Admins monitor and route complaints, manage users, and view analytics.

4.3 Solution Architecture

```
                  Client (Web/Mobile)
                          ↓
                Backend API (Express.js)
                          ↓
                  MongoDB (Database)
                          ↓
              Authentication Layer (JWT)
                          ↓
            Admin/Agent/Customer Dashboards
```

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Start Date: 15 June 2025
End Date: 7 July 2025

Phase	Start Date	End Date
Team Formation & Ideation	15 June 2025	17 June 2025
Requirement Gathering & Analysis	18 June 2025	19 June 2025
Design Phase	20 June 2025	24 June 2025
Development Phase	25 June 2025	29 June 2025
Internal Testing (Unit/System)	30 June 2025	4 July 2025
User Acceptance Testing	5 July 2025	7 July 2025

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

- **Tool Used:** Postman (API), Chrome Dev Tools
- **Test Case:** Login response time
- **Observation:** Occasional delay due to OTP (bug ID: BG-001)
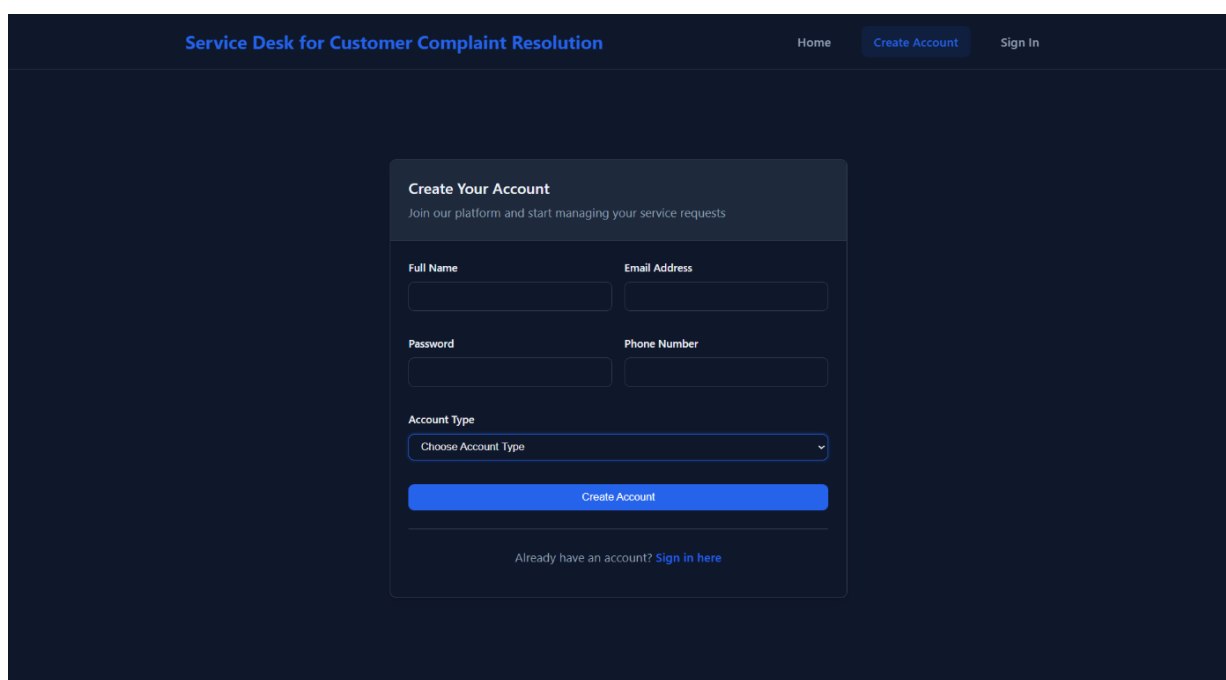- **Recommendation:** Optimize async operations, retry mechanism

7. RESULTS

7.1 Output Screenshots

- Landing Page

- Signup Page

- Login Page

- User Complaint Dashboard

- Agent Complaint View

Agent Workspace - adesh

Sign Out

Dashboard	My Complaints

My Assigned Complaints

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

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Agent Workspace - adesh

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

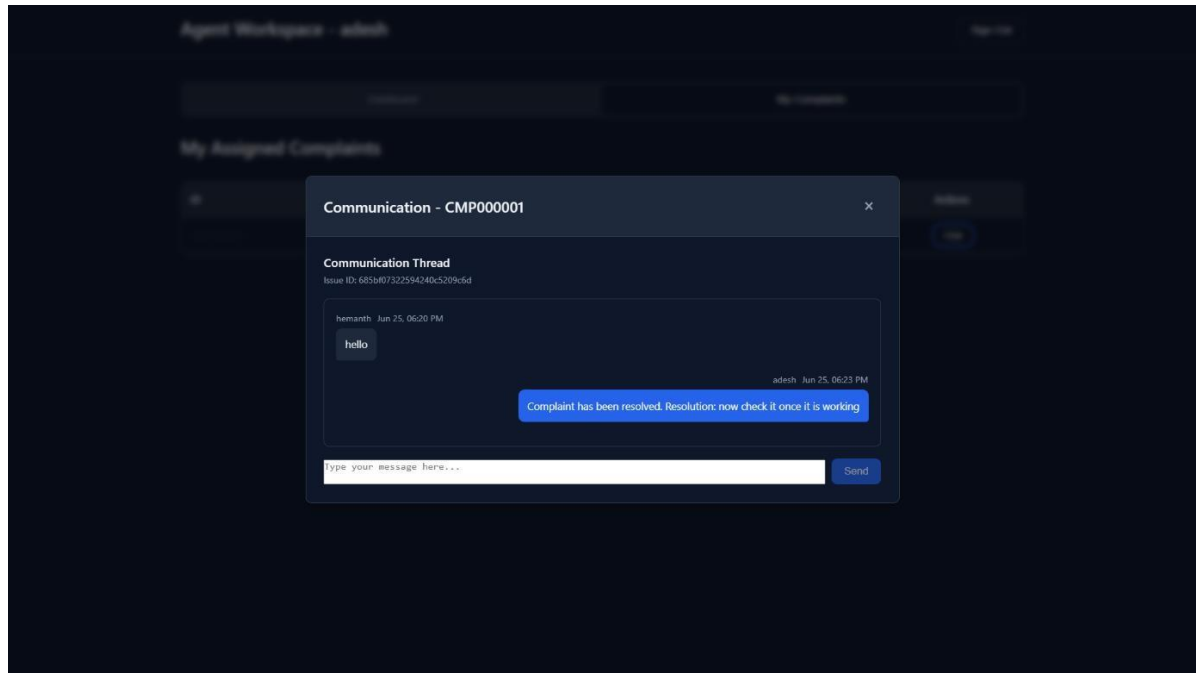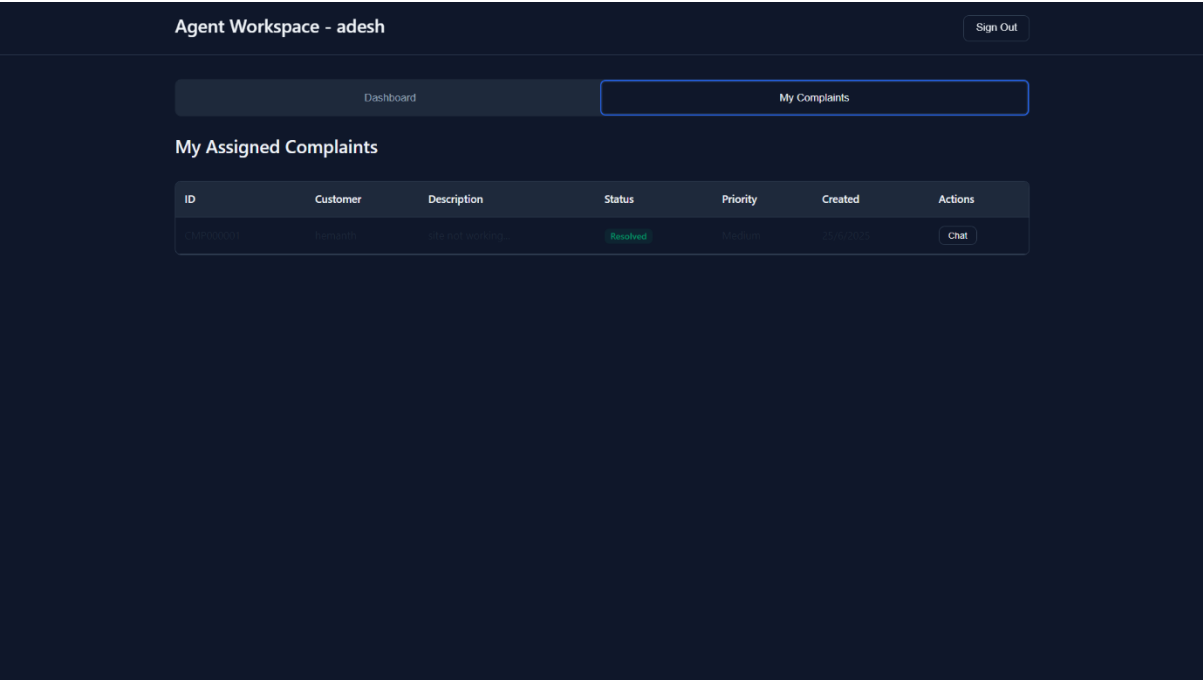Type your message here...   Send

- Admin Dashboard

Admin Dashboard - eswar adesh Dashboard Complaints Users Agents Sign Out

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 Dashboard Complaints Users Agents Sign Out

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

8. ADVANTAGES & DISADVANTAGES

Advantages:

- Real-time communication
- Complaint transparency
- Role-based access control
- Scalable tech stack

Disadvantages:

- Requires stable internet
- May need mobile optimization
- Admin overload if not automated

9. CONCLUSION

The Service Desk application meets the objective of offering a structured way for users to raise and track complaints. With added real-time interaction and analytics, it ensures better responsiveness and accountability.

10. FUTURE SCOPE

- AI-based complaint classification
- Auto-assignment of agents
- Multilingual support
- Mobile app integration
- Push notifications

11. APPENDIX

- **Source Code GitHub Link :** https://github.com/EswarAdeshCh/Service_Desk
- **Demo Video Link:** https://youtu.be/xfFbtcBX9Cg?si=P-yqe0JoEMIMbId3