AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING
Approved by All India Council for Technical Education - New Delhi, Affiliated to Anna University, Chennai
NAAC Accredited Institution
"Nizara Educational Campus", Muthapudupet, Avadi - IAF, Chennai - 600 055.
ANNA UNIVERSITY COUNSELLING CODE : 1101
NBA ACCREDITED COURSES (Mech Engg, ECE, CSE & IT)

Online Flight Ticket Booking and Management

Department of Computer Science and Engineering

Submitted By

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BONAFIDE CERTIFICATE

Certified that this project report on "**Online Flight Ticket Booking and Management**" is the Bonafide record of work done by J. Mohamed Fahim (110121104045), A. Asad Rasheed (110121104016), M. Ahamed Shafhan (110121104303), Abdul Haseeb Z A (1101211040301)

From the Department of Computer Science and Engineering by Anna University, Chennai

Internal Guide

Head of the Department

Internal Examiner

External Examiner

Abstract

The Online Complaint Registration and Management System is a centralized platform designed to simplify the process of submitting, tracking, and resolving complaints. This system enhances user satisfaction and operational efficiency by incorporating cutting-edge technologies and robust security measures. It ensures effective communication between users, agents, and administrators, thereby fostering a transparent and streamlined resolution process. With real-time updates, secure authentication, and intelligent routing, the system sets a new standard for complaint management in various industries.

Introduction

An online complaint registration and management system is a software application designed to streamline the process of submitting, tracking, and resolving complaints. It empowers organizations to efficiently handle customer complaints, ensuring timely resolution while adhering to industry guidelines and regulatory obligations. The system provides a centralized platform that improves customer satisfaction by offering robust features and functionalities. Additionally, it enhances transparency and accountability through detailed tracking and reporting tools.

Hardware and Software Requirements

Hardware Required:

- Windows 8 machine or higher
- Minimum 4GB RAM (8GB recommended)
- At least 10GB of available disk space

Software Required:

- Installation of two web browsers (Chrome, Firefox recommended)
- Node.js runtime environment
- MongoDB database software

System Requirements:

- Bandwidth of at least 30 Mbps for optimal performance
- Secure connection for hosting servers

Key Features

1. User Registration:
    - Enables users to create accounts to submit and track complaints.
    - Supports user authentication through email verification and secure passwords.
2. Complaint Submission:
    - Allows users to describe their complaints in detail, including name, description, address, and attachments.
    - Provides options to categorize complaints for faster resolution.
3. Tracking and Notifications:
    - Users can track complaint progress and receive updates via email or SMS.
    - Real-time status updates ensure transparency.
4. Agent Interaction:
    - Users can communicate directly with the agent assigned to their complaint.
    - A built-in chat module enhances communication.
5. Assigning and Routing Complaints:
    - Automatically assigns complaints to appropriate departments or personnel using intelligent routing algorithms.
    - Prioritizes urgent complaints for immediate attention.
6. Security and Confidentiality:
    - Implements user authentication, data encryption, access controls, and compliance with data protection regulations.
    - Uses SSL certificates for secure data transmission.

System Description

The Online Complaint Registration and Management System is user-friendly, allowing users to securely register complaints and monitor their progress in real-time. Features like automatic notifications, intelligent routing, and robust security measures ensure effective complaint resolution while prioritizing user details and satisfaction. The platform also includes admin dashboards for comprehensive management and analytics.

Scenario

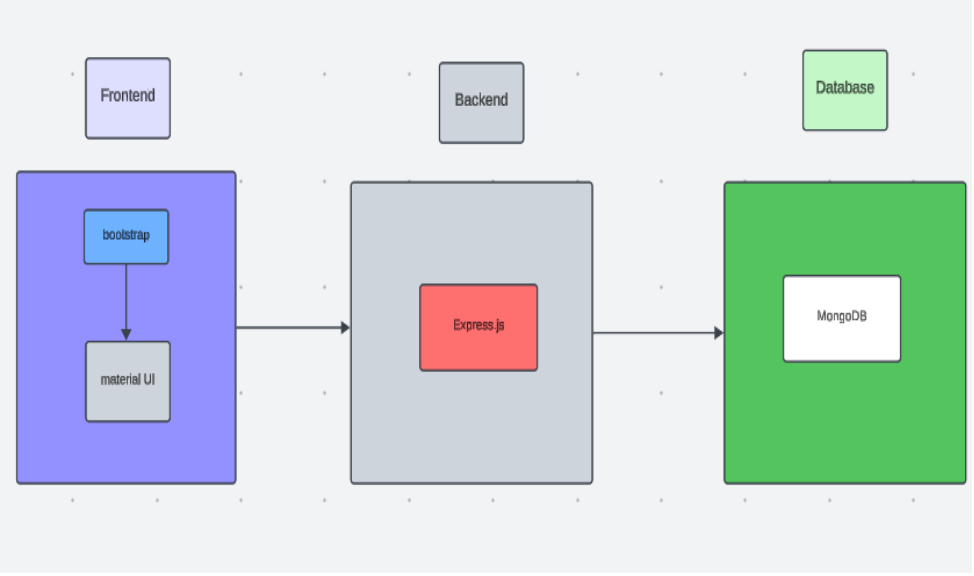
Example: John, a customer, encounters a defect in a product purchased online and decides to use the system to file a complaint.

1. User Registration and Login:
    - John creates an account, verifies it via email, and logs into the system.
2. Complaint Submission:
    - John fills out a complaint form, attaches relevant documents, and submits it.
3. Tracking and Notifications:
    - John tracks the complaint status in real-time and receives updates via email.
4. Interaction with Agent:
    - A customer service agent interacts with John to resolve the issue.
5. Resolution and Feedback:
    - The issue is resolved, and John provides feedback on the process.
6. Admin Management:
    - Administrators monitor and assign complaints while ensuring policy compliance.

Technical Architecture

The system employs a client-server model with the following components:

1. Frontend:
    - Technologies: Bootstrap, Material-UI, React.js
    - Functionality: User-friendly interface, real-time interactions, RESTful APIs (using Axios).
2. Backend:
    - Frameworks: Node.js, Express.js
    - Functionality: Handles server-side logic, complaint routing, and API communication.
3. Database:
    - MongoDB for scalable data storage and retrieval, ensuring reliable access to user profiles and complaint data.
4. Real-Time Communication:
    - Socket.io, WebRTC API for agent-user communication.
5. Authentication and Security:
    - JWT (JSON Web Tokens) for secure session management.
    - Hashing algorithms (e.g., bcrypt) for password encryption.



Pre-Requisites

1. Node.js and npm:
    - Install Node.js and npm for server-side operations.
    - Node.js Download
2. Express.js:
    - Install using npm install express for backend development.
3. MongoDB:
    - Install MongoDB for database management.
    - MongoDB Download
4. React.js:
    - Install React.js for creating dynamic user interfaces.
    - React.js Guide
5. Version Control:
    - Use Git for collaboration and version control.
    - Git Download
6. Development Environment:
    - Recommended IDE: Visual Studio Code
    - VS Code Download

Steps to Clone and Run the Project

1. Clone the Repository:
    - Open terminal and run: git clone <repository-link>
2. Install Dependencies:
    - Navigate to the project directory and run: npm install
3. Set Up Database:
    - Start MongoDB service and configure connection.

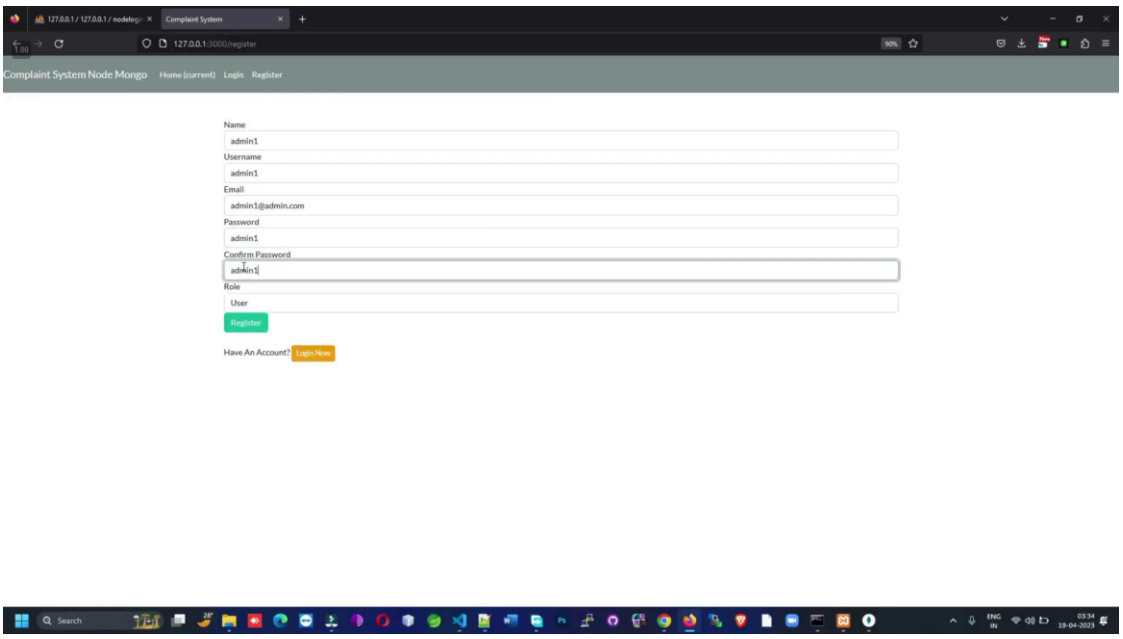
4. Run the Application:
    - Start the backend server: node app.js
    - Start the frontend: npm start
5. Access the Application:
    - Open a web browser and navigate to http://localhost:<port>

Testing and Debugging

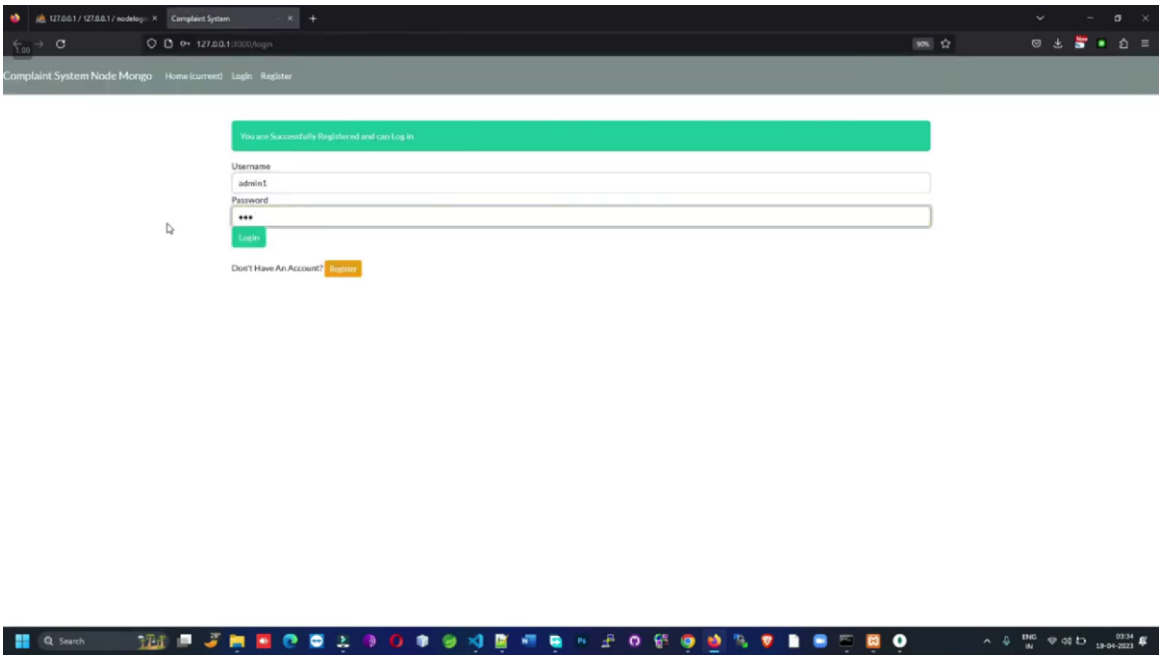
1. Unit Testing:
    - Use Jest or Mocha for testing individual modules.
2. Integration Testing:
    - Test API endpoints using Postman.
3. Frontend Testing:
    - Use tools like Selenium or Cypress for end-to-end testing.
4. Debugging:
    - Use browser developer tools and Node.js debugger for troubleshooting.

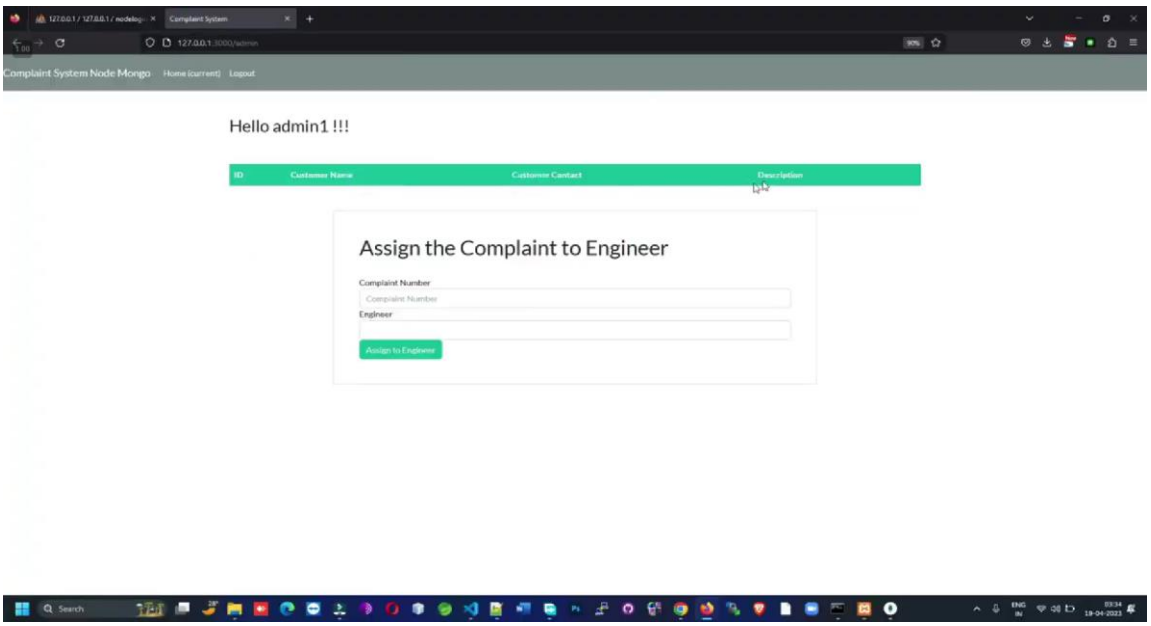
Screenshots and Visuals

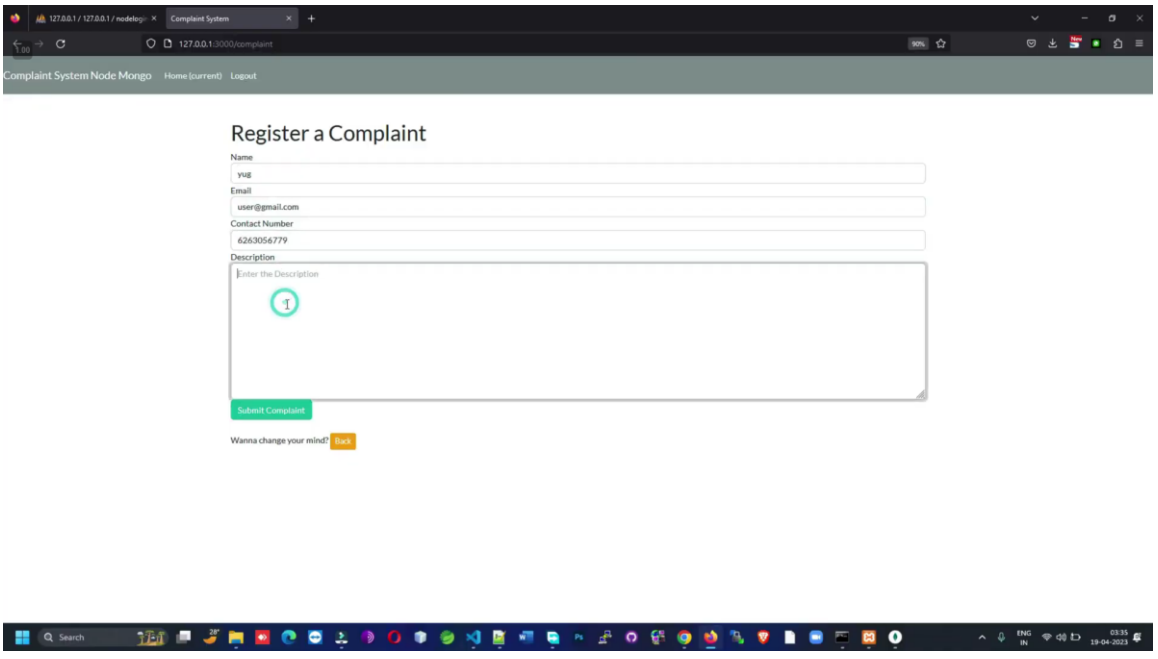
Login Page:

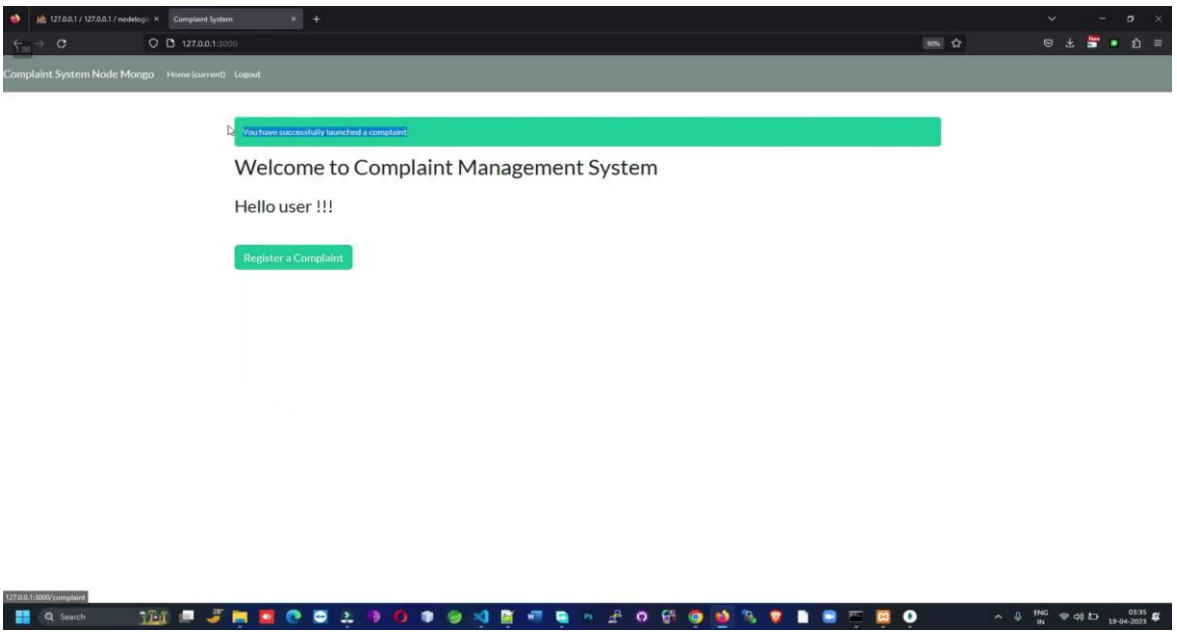


Complaint Submission Form:

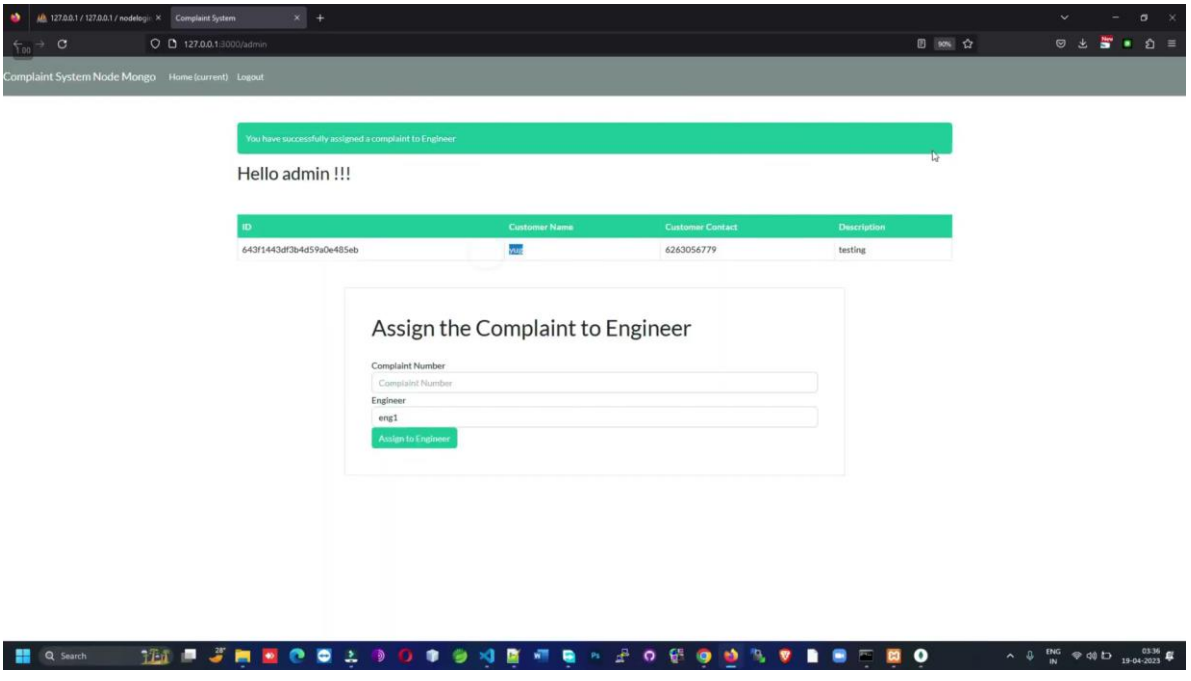


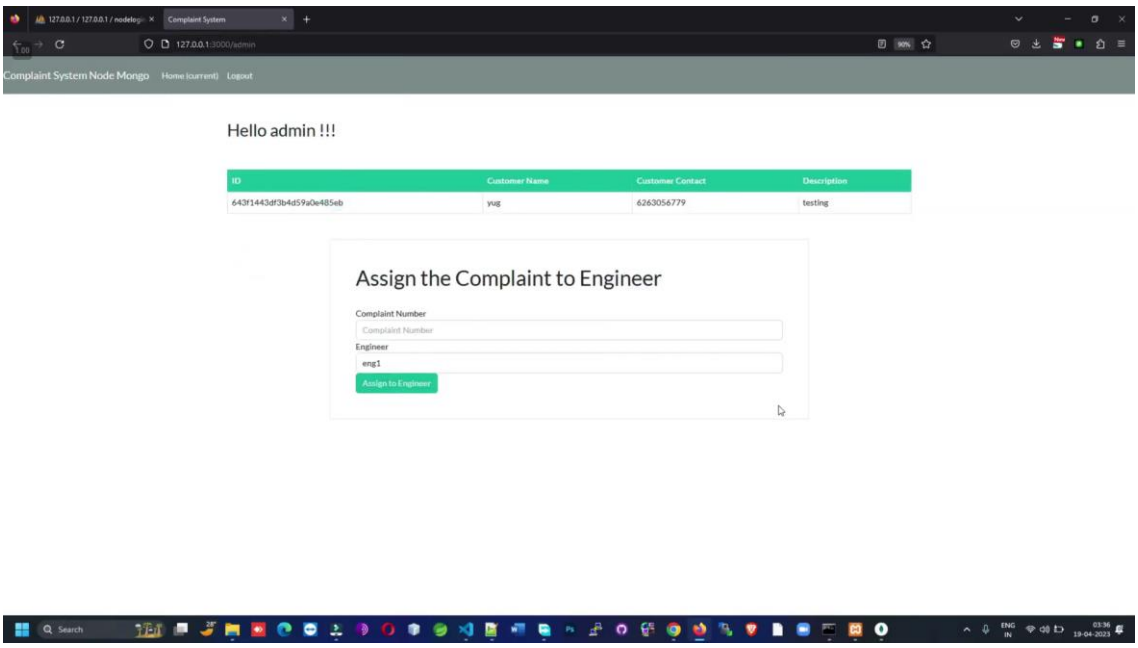

Complaint System Node Mongo
Home (current)
Logout
Hello admin1 !!!
ID
Customer Name
Customer Contact
Description
Assign the Complaint to Engineer
Complaint Number
Engineer
Assign to Engineer


Complaint System Node Mongo
Home (current)
Logout
Register a Complaint
Name
yug
Email
user@gmail.com
Contact Number
6263056779
Description
Enter the Description
Submit Complaint
Wanna change your mind?
Back



Tracking Page/ Admin Dashboard:





Future Enhancements

1. Mobile App Development:
    - Develop a mobile application for better accessibility.
2. AI Integration:
    - Use AI for predictive analytics and complaint categorization.
3. Multilingual Support:
    - Enable support for multiple languages to cater to diverse user bases.
4. Enhanced Security Measures:
    - Implement advanced authentication mechanisms like biometric verification.
5. Feedback Analytics:
    - Integrate tools for analyzing user feedback to improve system performance.
6. Cloud Deployment:
    - Host the application on cloud platforms like AWS or Azure for scalability.

Conclusion

The Online Complaint Registration and Management System represents a significant leap forward in resolving user grievances efficiently and transparently. By incorporating real-time tracking, user-agent communication, and intelligent routing mechanisms, the system not only reduces resolution times but also boosts user satisfaction and organizational efficiency. Its scalability and potential for integration with emerging technologies such as AI and mobile platforms make it a versatile tool adaptable to diverse sectors. This system exemplifies how technology can be leveraged to address real-world problems, paving the way for smarter and more effective complaint handling solutions.