

Your Platform for Online Complaints

Abstract

ResolveNow: Your Platform for Online Complaints is a centralized web-based complaint registration and management system designed to streamline the process of submitting, tracking, assigning, and resolving customer complaints efficiently. The system enables users to securely register complaints, monitor real-time status updates, and communicate directly with assigned agents. Administrators oversee complaint routing and ensure timely resolution while maintaining compliance with data protection regulations. Built using modern web technologies such as React.js, Express.js, and MongoDB, the platform ensures scalability, security, and real-time communication through REST APIs and Socket.io integration.

Introduction

In today's digital era, customer satisfaction plays a crucial role in organizational growth and reputation. Traditional complaint handling methods are often inefficient, time-consuming, and lack transparency. ResolveNow provides a structured digital platform that bridges the gap between customers, agents, and administrators. It offers a seamless complaint lifecycle from submission to resolution while ensuring transparency, accountability, and improved service quality.

Objectives

The primary objective of ResolveNow is to develop a secure, scalable, and user-friendly complaint management platform that:

- Enables users to register and track complaints online.
- Ensures efficient complaint assignment and resolution.
- Facilitates real-time communication between users and agents.
- Maintains data confidentiality and regulatory compliance.
- Improves customer satisfaction through transparency and automation.

Features

ResolveNow offers the following key features:

- User Registration and Authentication (JWT-based security)
- Complaint Submission with attachments
- Real-time Complaint Tracking
- Email/SMS Notifications
- Intelligent Complaint Routing
- Built-in Chat System between user and agent
- Role-based Access Control (Customer, Agent, Admin)
- Admin Dashboard for monitoring and assignment
- Secure Data Storage with Encryption
- Feedback and Rating System

Technology Stack

The system is developed using a modern full-stack JavaScript architecture:

- **Frontend:** React.js, Bootstrap, Material UI, Axios
- **Backend:** Express.js, Node.js
- **Database:** MongoDB with Mongoose
- **Authentication:** JSON Web Tokens (JWT)
- **Real-time Communication:** Socket.io
- **API Communication:** RESTful APIs

System Architecture

ResolveNow follows a **Client-Server Architecture**:

- The **Frontend (React.js)** acts as the client, handling UI rendering and API calls via Axios.
- The **Backend (Express.js)** processes requests, implements business logic, and communicates with the database.
- **MongoDB** stores user, complaint, assigned complaint, and chat data.
- **Socket.io** enables real-time messaging and status updates.
- Authentication middleware secures protected routes.

This architecture ensures modularity, scalability, and efficient data exchange.

Modules

The system consists of the following modules:

1. User Module

- Registration, Login, Profile Management
- Complaint Submission and Tracking
- Chat with Assigned Agent

2. Agent Module

- View Assigned Complaints
- Update Complaint Status
- Communicate with Customers

3. Admin Module

- Monitor All Complaints
- Assign Complaints to Agents
- Manage Users and Agents
- Enforce Platform Policies

4. Complaint Management Module

- CRUD Operations for Complaints
- Intelligent Routing System

5. Chat Module

- Real-time Communication
- Complaint-specific Message Storage

Implementation Steps

The implementation process includes:

1. Initialize Backend using npm init
2. Install dependencies (Express, Mongoose, JWT, CORS, etc.)
3. Configure Express server and middleware
4. Define MongoDB schemas (User, Complaint, Assigned Complaint, Chat)
5. Implement REST API routes
6. Add authentication middleware

7. Develop frontend using React.js
8. Create reusable UI components
9. Integrate frontend with backend APIs using Axios
10. Implement real-time messaging with Socket.io
11. Test APIs using Postman
12. Deploy application on cloud platform

Advantages

- Faster complaint resolution process
- Improved transparency and accountability
- Secure and encrypted data handling
- Real-time updates and communication
- Scalable and modular architecture
- Reduced manual workload
- Enhanced customer satisfaction

Applications

ResolveNow can be implemented in:

- E-commerce platforms
- Government grievance portals
- Banking and financial institutions
- Telecom services
- Educational institutions
- Corporate customer support systems

Future Enhancements

- AI-based complaint categorization
- Automated chatbot support
- Analytics dashboard with performance metrics
- Mobile application version
- Multi-language support
- Integration with CRM systems
- Sentiment analysis for customer feedback
- Cloud-based deployment with load balancing

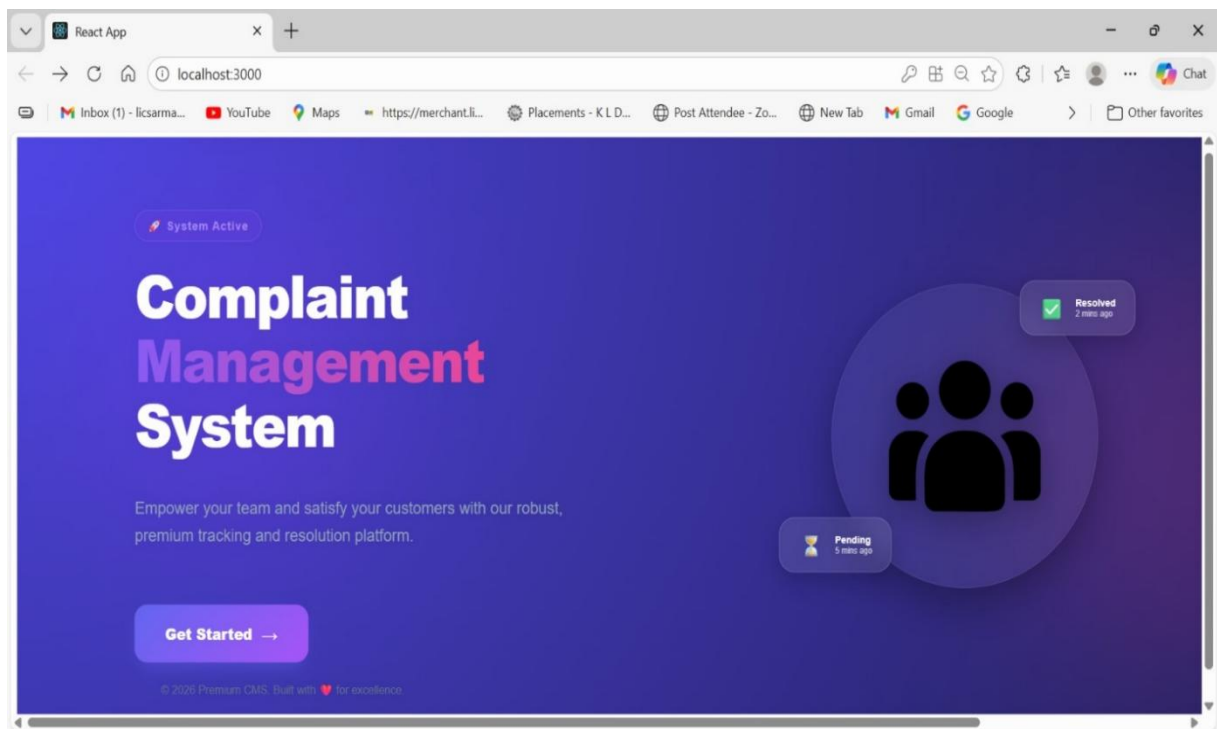
Conclusion

ResolveNow is a comprehensive online complaint registration and management platform designed to enhance customer service efficiency and organizational transparency. By integrating secure authentication, intelligent routing, real-time communication, and scalable database management, the system ensures timely resolution of complaints. The modern full-stack architecture makes it adaptable to various industries, providing a reliable and efficient solution for digital grievance management.

References

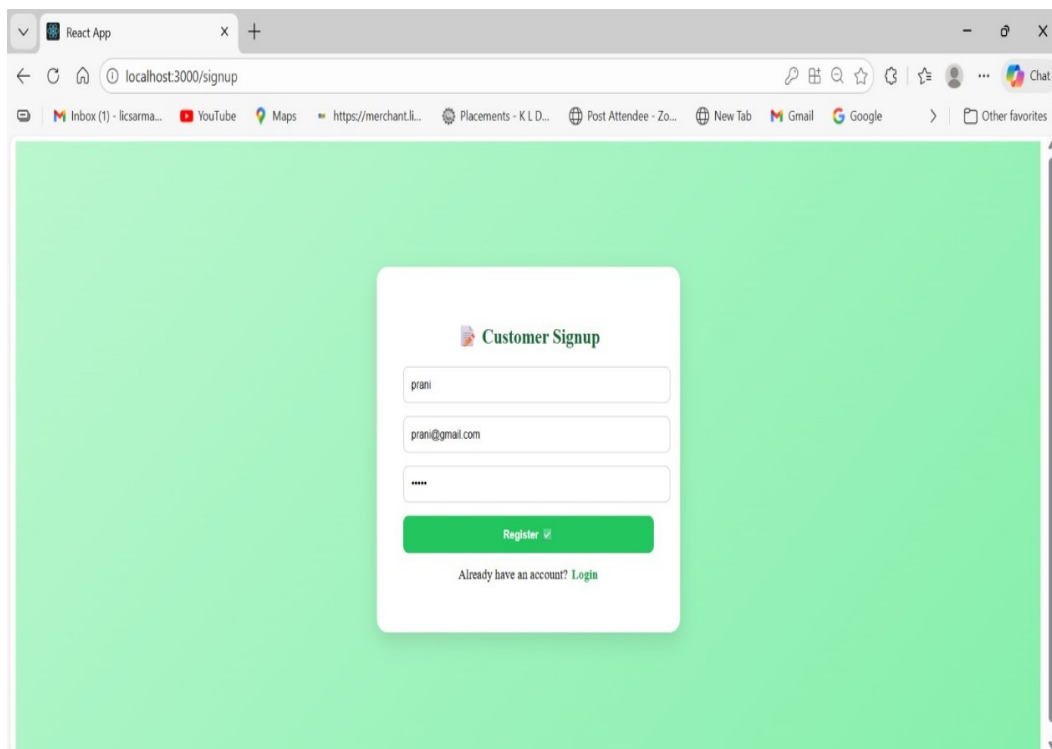
- ✧ Fielding, R. (2000). *Architectural Styles and the Design of Network-based Software Architectures (REST)*
- ✧ MongoDB Documentation – <https://www.mongodb.com/docs>
- ✧ Express.js Documentation – <https://expressjs.com>
- ✧ React.js Documentation – <https://react.dev>
- ✧ JSON Web Token (JWT) Introduction – <https://jwt.io>

Screenshots:

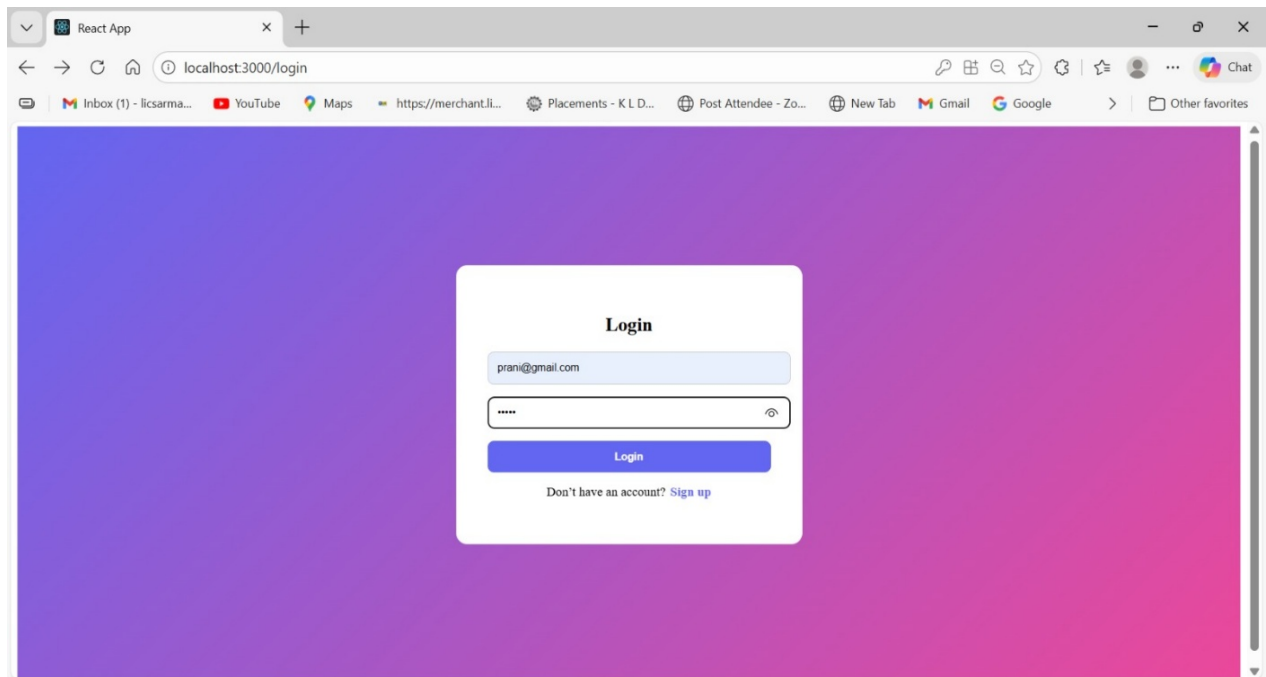


The home page welcomes users with clearly presenting the purpose of the application. It introduces the system as a reliable platform for registering, tracking, and resolving complaints. A **Get Started** button guides users toward the login process.

Customer signup page



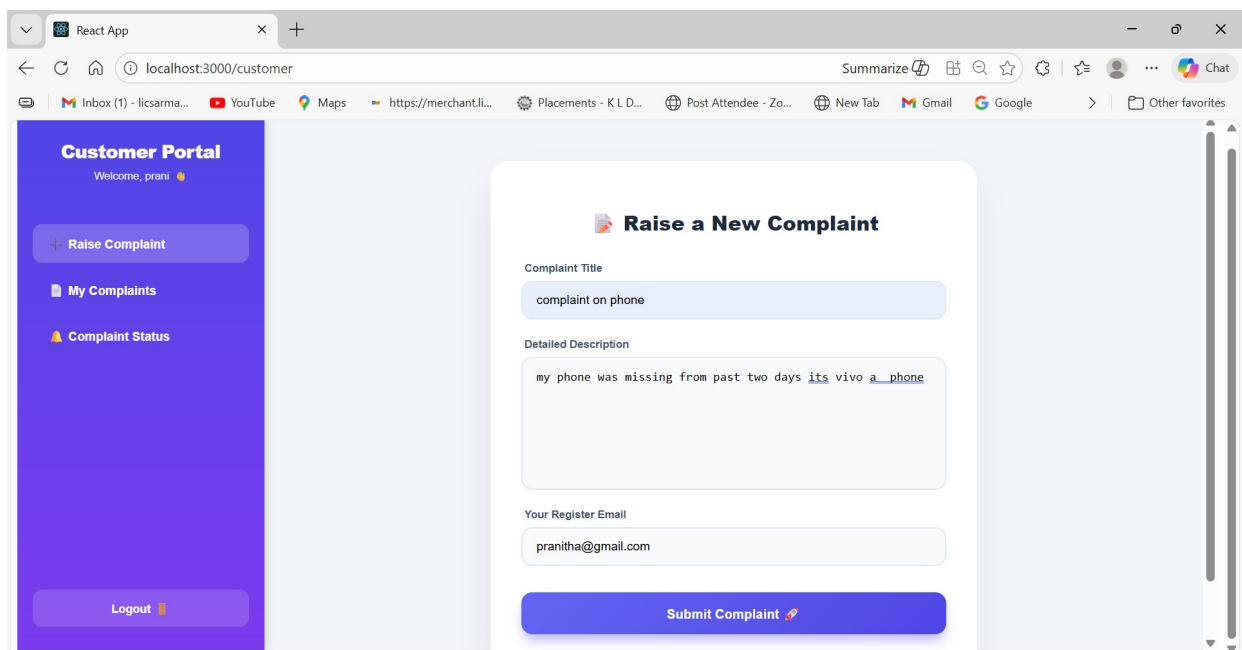
Customer Login



The screenshot shows a web browser window with the address bar displaying 'localhost:3000/login'. The page features a purple-to-pink gradient background. In the center, there is a white login form titled 'Login'. The form contains a text input field with the email 'prani@gmail.com', a password input field with masked characters '*****' and a toggle icon, a blue 'Login' button, and a link that says 'Don't have an account? [Sign up](#)'.

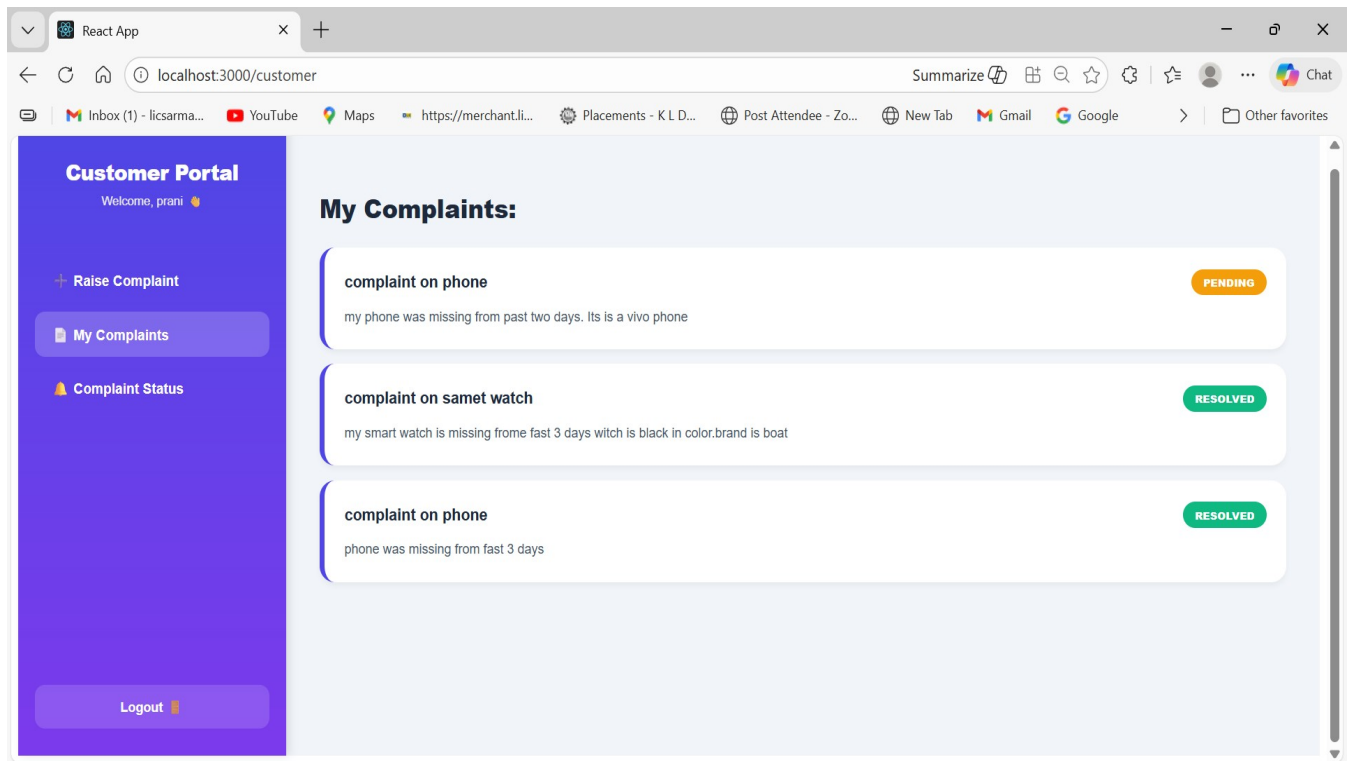
The **Customer Login Page** allows users to securely sign in using their email and password. The simple and centered design ensures easy access. New users can navigate to the **Sign Up** option to create an account.

Customer complaint page:

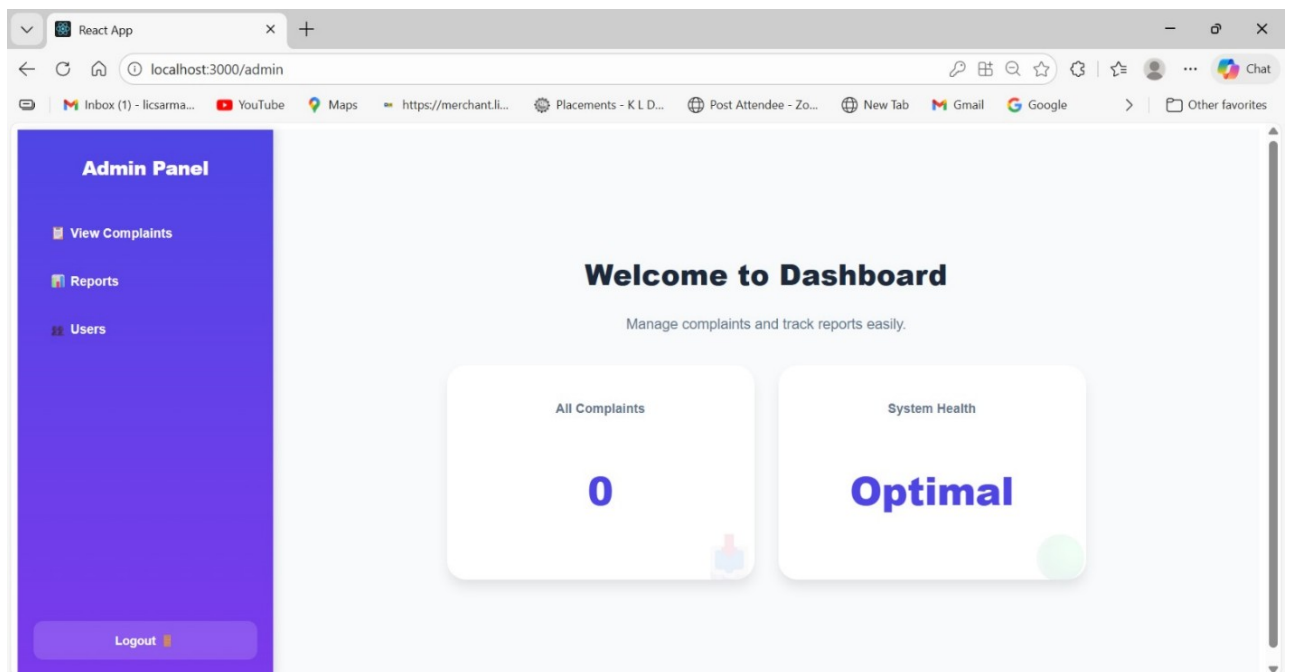


The screenshot shows a web browser window with the address bar displaying 'localhost:3000/customer'. The page has a light blue background. On the left, there is a dark blue sidebar titled 'Customer Portal' with the text 'Welcome, prani' and three menu items: 'Raise Complaint', 'My Complaints', and 'Complaint Status'. At the bottom of the sidebar is a 'Logout' button. The main content area features a white form titled 'Raise a New Complaint'. The form has three sections: 'Complaint Title' with the text 'complaint on phone', 'Detailed Description' with the text 'my phone was missing from past two days its vivo a phone', and 'Your Register Email' with the text 'pranitha@gmail.com'. At the bottom of the form is a blue 'Submit Complaint' button.

View complaints in customer panel:



AdminDashboard :



Admin Panel / Admin Dashboard

The **Admin Panel** is the control center of the system. It provides administrators with an overview of all complaints and system health. Admins can:

- View total complaints
- Monitor system status
- Navigate to detailed complaint lists

