

➤ Overview

ResolveNow: Your Platform for Online Complaints, is a powerful full-stack web application built with React.js, Node.js, Express.js, MongoDB, Socket.io, and WebRTC. It streamlines the entire complaint lifecycle—from submission to resolution—including real-time chat, automated routing, and admin control.

➤ Key Features

- **User Registration & Secure Authentication**

Users register with email/password and verify via email. Authentication is managed through JSON Web Tokens (JWT), ensuring secure access—an approach similar to best practices shown in the E-Complaints project

- **Complaint Submission Form**

Users can submit detailed complaints with descriptions

- **Automated Assignment & Routing**

Complaints are automatically classified based on category, then routed to appropriate agents—mirroring the admin-routing logic evident in user-Complaints

- **Real-Time Status Tracking**

Users can monitor complaint progress on dashboards with real-time updates, driven by WebSockets (Socket.io), similar to the dynamic dashboards in Complaint Management System React apps.

- **Live Chat Feature**

Users and agents can communicate via in-app chat powered by Socket.io. Messages are linked to complaintId and userId, matching common practices in other helpdesk solutions.

- **Admin Dashboard**

Admins have comprehensive oversight: they can review complaints, assign agents, monitor workloads, and enforce policies—features similar to admin interfaces in several open-source solutions.

- **Agent Interface**

Agents can view complaints assigned to them, update status, chat with users, and see resolution feedback.

- Security & Compliance

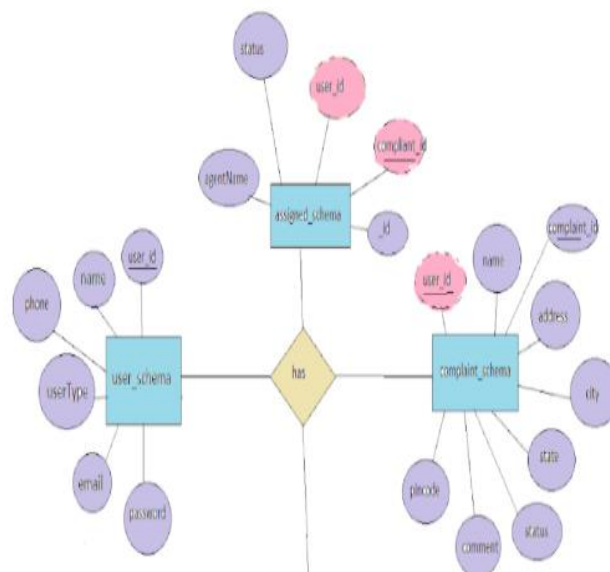
Built with secure authentication (JWT), HTTPS support, encrypted data transport, role-based access control, and audit logs—aligned with industry-standard architectures.

➤ Technology Stack

Layer	Tools & Frameworks
Frontend	React.js, Material-UI, Bootstrap, Axios, Socket.io-client
Backend	Node.js, Express.js, Mongoose, Socket.io, WebRTC
Database	MongoDB

➤ ER Diagram & Data Models

- User: Stores personal info, hashed password, role, contact details.
- Agent: Similar to User but with agent-specific metadata and workload stats.
- Complaint: Tracks submission details, status history, attachments.
- Message: Maps user-agent chat messages to complaintId, timestamps.
- Admin: Handles complaint assignment and system-wide logs/metric



➤ API & Routing

- Auth Routes: /signup, /login, /verify, protected routes using JWT
- Complaints Routes: CRUD operations, file uploads, attachments processing.
- Agent/Admin Routes: /assign, /updateStatus, /allComplaints, workload tracking.
- Messages Route: Real-time messaging with persistent storage.
- Notifications: Endpoints or background service to trigger communication

➤ Frontend Architecture

- Structured into components (Login, Dashboard, ComplaintForm, Chat, Profile).
- Utilizes client-side routing (React Router) for seamless user navigation.
- Manages state via React hooks/context, maintaining clarity and modularity.
- Communicates via Axios, handles authentication via tokens.
- Implements Socket.io for live updates and chat.

➤ Setup & Deployment

1. Clone Project

- git clone
- cd complaint-registry

NOTE: Install all the required applications before execution. In your terminal run the below commands in different terminals for backend and frontend

2. Backend Setup

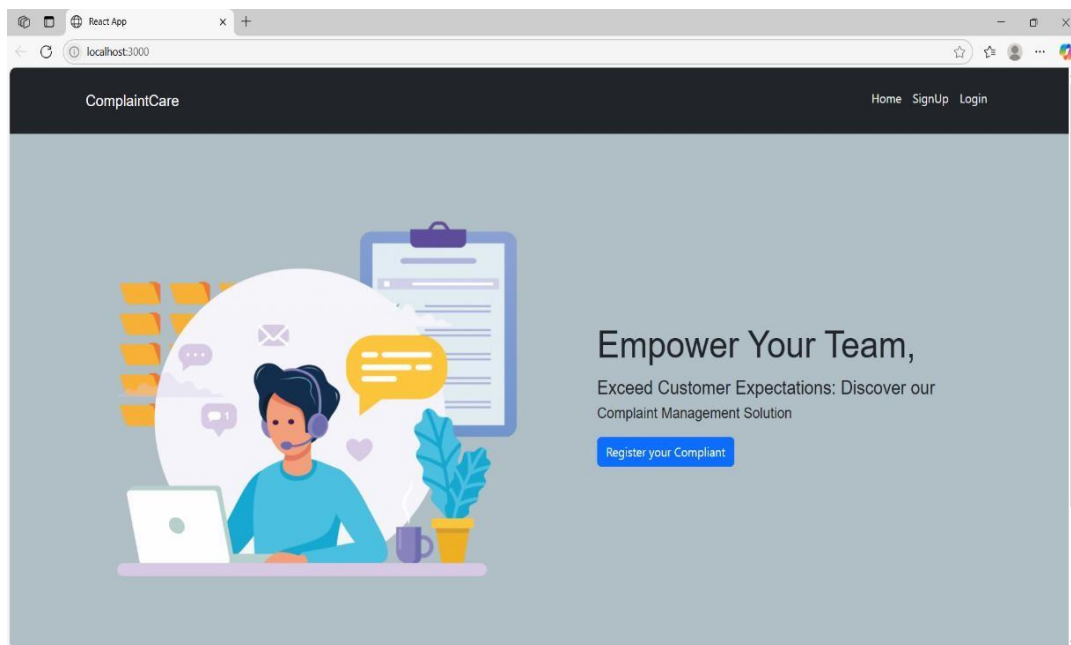
- cd backend
- npm install
- npm start

3. Frontend Setup

- cd frontend
- npm install
- npm start

4. Run Application

- Access at <http://localhost:3000>, with backend typically at <http://localhost:5000>. Once you accessed, you will be able to see the below web page



➤ Use Case Scenarios

1. Citizen Submitting Civic Complaints

- Residents can report local issues like potholes, water leakage, or noise complaints through the app.

2. E-Governance Support Center

- Government support desks can use this system to assign and track issue resolution by department agents.

3. Customer Service Department in a Company

- Companies can offer this as a helpdesk portal for handling customer product or service complaints.

4. University Grievance Redressal Cell

- Students and staff can submit grievances, which are routed to administrative departments for action.

➤ Future Enhancements

- **Mobile App Version:**

A mobile version for Android/iOS using React Native for better accessibility.

- **AI-Powered Ticket Classification:**

Use natural language processing (NLP) to auto-categorize complaints.

- **Multilingual Support:**

Include language translation APIs to support regional languages.

- **Analytics Dashboard:**

Add graphs for complaint trends, agent performance, and SLA compliance.

- **Email/SMS Notifications:**

Enable auto-alerts for complaint updates and actions via third-party APIs.

➤ Conclusion

ResolveNow is a robust, real-time, full-stack solution for managing complaints across various sectors. By integrating essential tools such as Socket.io, JWT authentication, and MongoDB, the platform delivers both performance and security. With scalability and modularity at its core, ResolveNow can evolve into a full-fledged grievance redressal system adaptable to public, corporate, and educational domains.