# Full Stack Development with MERN

# Project Documentation format

## 1. Introduction

• **Project Title:** ResolveNow – Online Complaint Registration & Management System

• **Team Members:**

1. Dwarampudi Dinesh Eswar Reddy- Backend Developer
2. Ragipindi Sailaja Reddy- Frontend Developer
3. Naga Prathimasri Kanuri- Database & Integration Developer
4. Endala Harshavardhan-Testing & Deployment Engineer

## 2. Project Overview

• **Purpose:** ResolveNow is a web-based complaint management system developed using the MERN stack. The purpose of the project is to provide a centralized digital platform where users can submit complaints, track their status, communicate with assigned agents, and receive notifications. It helps organizations manage complaints efficiently, improve transparency, and increase customer satisfaction.

• **Features:**

- User Registration & Login
- Email Verification
- Complaint Submission with Attachments
- Complaint Tracking Dashboard
- Admin Panel for Assignment
- Real-time Chat (Socket.io)
- Email Notifications
- Feedback System
- Role-Based Access (User, Agent, Admin)

## 3. Architecture

• **Frontend:** The frontend is built using React.js with Bootstrap for responsive UI design. Axios is used to communicate with backend REST APIs. The frontend consists of components such as Login, Registration, Dashboard, Complaint Form, Chat Window, and Admin Panel.

• **Backend**: The backend is developed using Node.js and Express.js. It handles authentication, complaint management logic, status updates,

assignment processing, and chat functionality. JWT (JSON Web Token) is used for secure authentication and authorization.

**Database:** MongoDB is used as the primary database to store:

- User details
- Complaint details
- Chat messages
- Feedback records

MongoDB Atlas is used for cloud deployment.

## 4. Setup Instructions

- **Prerequisites:**

-  Node.js (v16 or above)
- MongoDB (Local or MongoDB Atlas)
- Git
- VS Code

**Installation:**

1. Clone repository

git clone <repository-link>

2. Install frontend dependencies

cd client

npm install

3. Install backend dependencies

cd server

npm install

4. Create .env file in server folder

MONGO_URI=your_mongodb_connection

JWT_SECRET=your_secret_key

EMAIL_USER=your_email

EMAIL_PASS=your_password

## 5. Folder Structure

· **Client:**

client/

```
├── src/
│   ├── components/
│   ├── pages/
│   ├── services/
│   ├── App.js
│   └── index.js
├── public/
└── package.json
```

· **Server:**

```
server/
├── controllers/
├── models/
├── routes/
├── middleware/
├── config/
├── server.js
└── package.json
```

## 6. Running the Application

• **Frontend:**

```
cd client
npm start
```

• **Backend:**

```
cd server
npm start
```

## 7. API Documentation

| Method | Endpoint | Description |
|---|---|---|
| POST | /api/auth/register | Register new user |
| POST | /api/auth/login | Login user |
| GET | /api/auth/profile | Get user profile |

## 8. Authentication

Authentication is implemented using **JWT (JSON Web Tokens)**.

- User logs in
- Server generates JWT token
- Token stored in local storage
- Protected routes verified using middleware
- Passwords encrypted using bcrypt

Role-based access control is implemented for:

- User
- Agent
- Admin

## 9. User Interface

• The UI includes:

- Registration Page
- Login Page
- User Dashboard
- Complaint Submission Form
- Chat Interface
- Admin Monitoring Panel

Screenshots should include:

- Login Page
- Dashboard
- Complaint Form
- Admin Panel

## 10. Testing

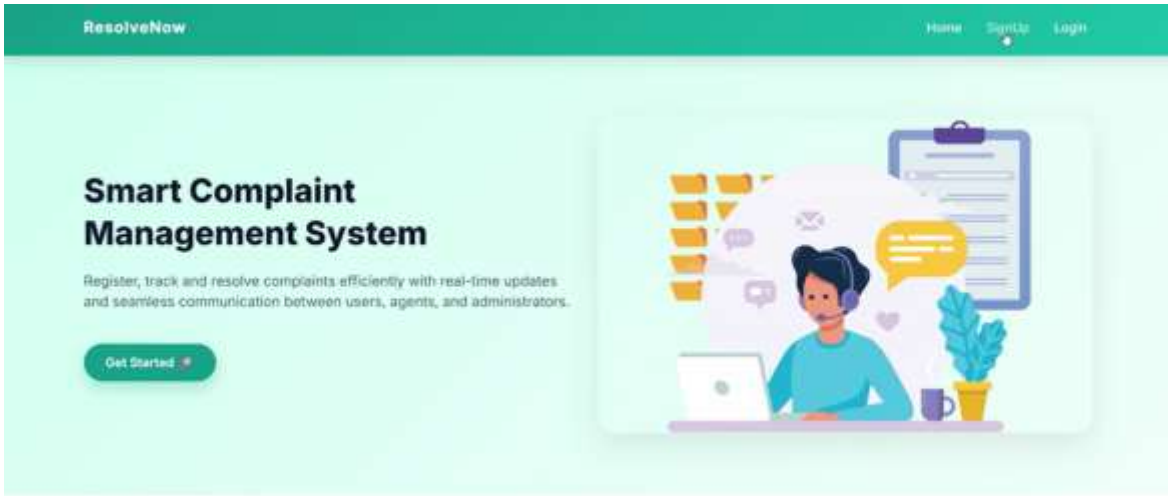
• Testing strategy includes:

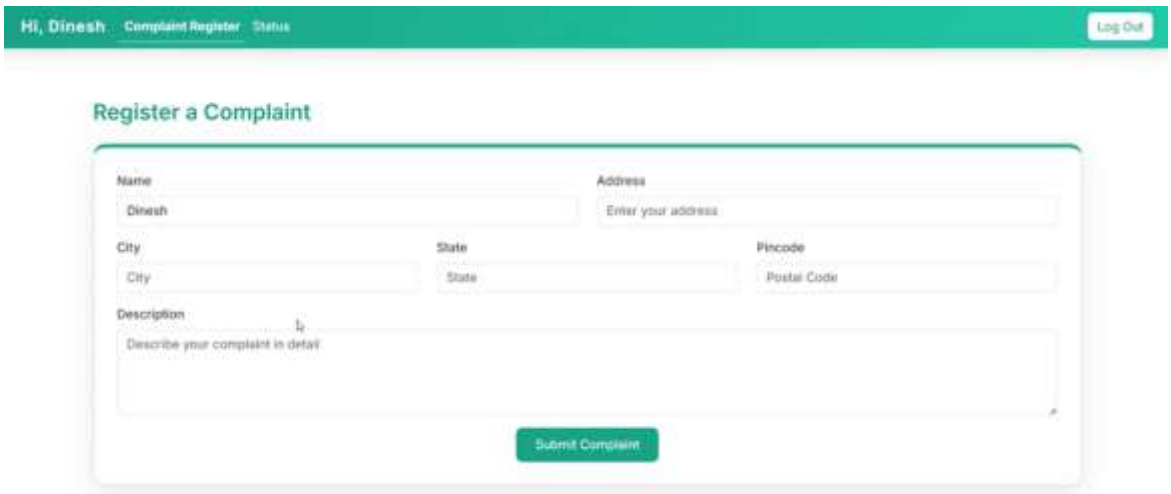
- Manual functional testing
- API testing using Postman
- Authentication testing
- Integration testing
- Error handling validation

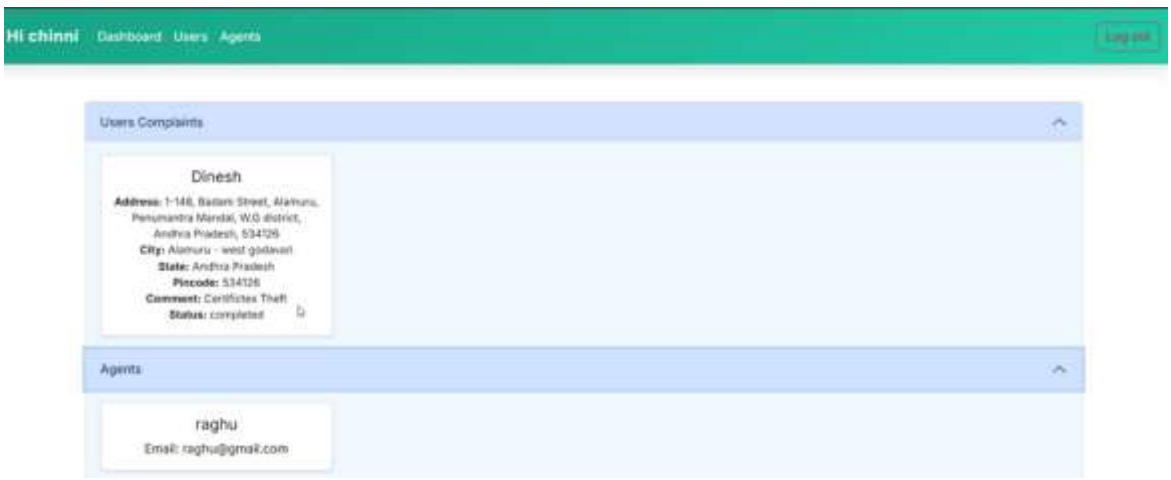
## 11. Screenshots or Demo

## GITHUB LINK:

https://github.com/sailaja-37/ResolveNoww.git



## 12. Known Issues

- Real-time chat may experience delay under heavy load
- Email notifications depend on SMTP configuration
- No AI-based complaint categorization implemented yet

## 13. Future Enhancements

- AI-based automatic complaint categorization
- Mobile application version
- SMS notification integration
- Analytics dashboard with graphical reports
- Multi-organization support
- Cloud auto-scaling implementation