PROJECT PLANNING PHASE DOCUMENT

Project Title: ResolveNow – Online Complaint Registration and Management System

1. Project Overview

ResolveNow is a web-based Online Complaint Registration and Management System designed to streamline the process of registering, tracking, and resolving customer complaints. The platform enables users to securely submit complaints, monitor their status in real time, and communicate with assigned service agents.

The system provides a centralized environment where administrators can monitor all complaints, assign them to appropriate agents, and ensure timely resolution. By digitizing the complaint handling process, the system improves transparency, efficiency, and customer satisfaction.

2. Problem Statement

In many organizations, complaint handling is performed manually through emails, phone calls, or paper-based systems. These traditional methods often lead to:

- Delayed response times
- Lack of tracking mechanisms
- Poor communication between users and service representatives
- Data mismanagement
- Low customer satisfaction

There is a need for a secure, centralized, and automated system that ensures efficient complaint registration, assignment, tracking, and resolution.

3. Project Objectives

The main objectives of the ResolveNow system are:

- To develop a secure online complaint registration platform
- To allow users to track complaint status in real time
- To automate complaint assignment to agents
- To enable communication between users and agents
- To maintain complaint records in a structured database
- To ensure data security and confidentiality
- To improve complaint resolution efficiency

4. Scope of the Project

The scope of the project includes:

- User registration and authentication
- Complaint submission with detailed description
- File/image attachment support
- Complaint tracking system
- Agent dashboard for handling assigned complaints
- Admin dashboard for monitoring and managing complaints
- Status updates and notifications
- Secure data storage using MongoDB

The system is designed for small to medium-scale organizations and can be extended further with additional features in future phases.

5. Project Modules

The system is divided into the following modules:

5.1 User Module

- Registration and login
- Submit complaint
- View complaint history
- Track complaint status
- Communicate with assigned agent

5.2 Agent Module

- View assigned complaints
- Update complaint status (Open / In Progress / Resolved)
- Communicate with users
- Provide resolution details

5.3 Admin Module

- View all complaints
- Assign complaints to agents
- Monitor complaint workflow
- Manage system settings

6. Feasibility Study

6.1 Technical Feasibility

The system is technically feasible as it uses widely adopted technologies such as:

- React.js (Frontend)
- Node.js and Express.js (Backend)
- MongoDB (Database)

These technologies are scalable, reliable, and suitable for full-stack web development.

6.2 Economic Feasibility

The project uses open-source technologies, which reduces development and operational costs. It can be deployed on affordable cloud platforms.

6.3 Operational Feasibility

The system is user-friendly and requires minimal training. Users can easily register complaints, and agents can manage them through intuitive dashboards.

7. Technical Architecture

The system follows a Client-Server Architecture.

Frontend:

- React.js
- Bootstrap
- Material UI
- Axios for API communication

Backend:

- Node.js
- Express.js
- REST APIs

Database:

- MongoDB (NoSQL database)

Architecture Flow:

User Interface → REST API → Express Server → MongoDB Database

8. Database Design

The system consists of the following entities:

User

- userId (Primary Key)
- name
- email
- passwordHash
- createdAt

Agent

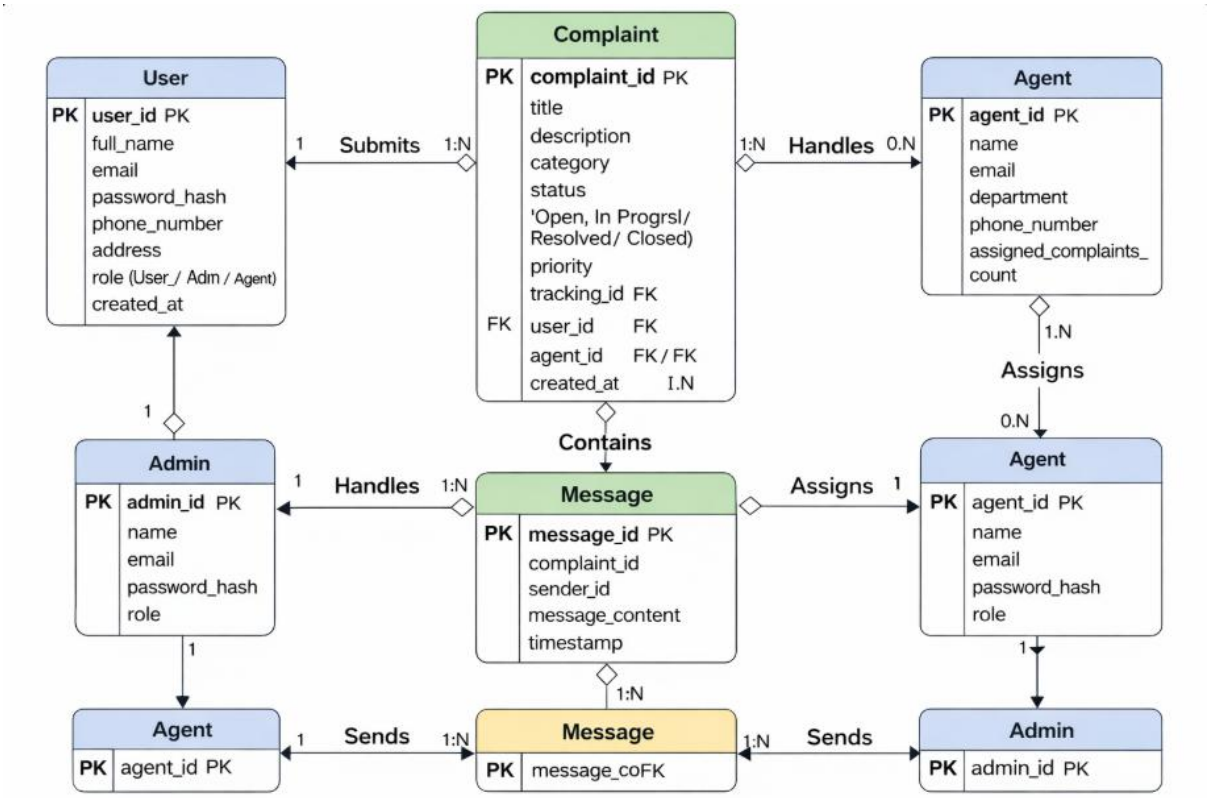
- agentId (Primary Key)
- name
- email
- department

Complaint

- complaintId (Primary Key)
- description
- status
- trackingId
- userId (Foreign Key)
- createdAt
- updatedAt

Message

- messageId (Primary Key)
- content
- timestamp
- senderId (Foreign Key)
- complaintId (Foreign Key)



9. Data Flow Description

The system workflow is as follows:

1. User registers and logs into the system.
2. User submits a complaint with details.

3. The system stores complaint information in the database.
4. Admin assigns complaint to an agent.
5. Agent reviews and updates complaint status.
6. User receives notifications regarding status updates.
7. Once resolved, complaint status is marked as "Resolved".

10. Project Development Plan

The project development is divided into the following phases:

1. Requirement Analysis
2. System Design (ER Diagram & DFD)
3. Frontend Development
4. Backend API Development
5. Database Integration
6. Testing and Debugging
7. Deployment

11. Tools and Technologies

- Programming Language: JavaScript
- Frontend Framework: React.js
- Backend Framework: Express.js
- Runtime Environment: Node.js
- Database: MongoDB
- Version Control: Git & GitHub
- Development Tool: Visual Studio Code

12. Testing Strategy

The system is tested using:

- Unit Testing for backend APIs
- Functional Testing for user modules
- Integration Testing between frontend and backend
- Manual Testing for UI and usability

All major functionalities are tested before deployment.

13. Risk Management

Potential risks include:

- Database connectivity issues
- Server downtime
- Security vulnerabilities
- Improper complaint assignment

Mitigation strategies include:

- Regular backups
- Input validation
- Secure authentication
- Role-based access control

14. Future Enhancements

- SMS notifications
- AI-based complaint categorization
- Complaint priority system
- Analytics dashboard
- Mobile application version
- Feedback rating system

15. Conclusion

ResolveNow is a structured, secure, and scalable complaint management system designed to simplify and automate the complaint handling process. It ensures efficient communication between users and service agents, reduces manual effort, and improves overall customer satisfaction.

The system demonstrates practical implementation of full-stack development using modern web technologies and provides a strong foundation for future expansion.