Project Design Phase
Solution Architecture

Date	26 June 2025
Team ID	LTVIP2025TMID53148
Project Name	ResolveNow: Your Platform for Online Complaints
Maximum Marks	4 Marks

Solution Architecture – ResolveNow

The solution architecture for **ResolveNow** bridges real-world complaint handling challenges with a scalable, tech-driven system. It ensures the platform is structured, user-centric, and capable of growth.

Goals of the Architecture:

- Deliver the **best-fit technology solution** for managing and resolving user complaints.
- **Visualize and describe** the system's components, interactions, and behaviors to all stakeholders.
- **Define core features**, development phases, and technical requirements for each module.
- Ensure the solution is **modular, scalable, and maintainable** for future upgrades or integrations.
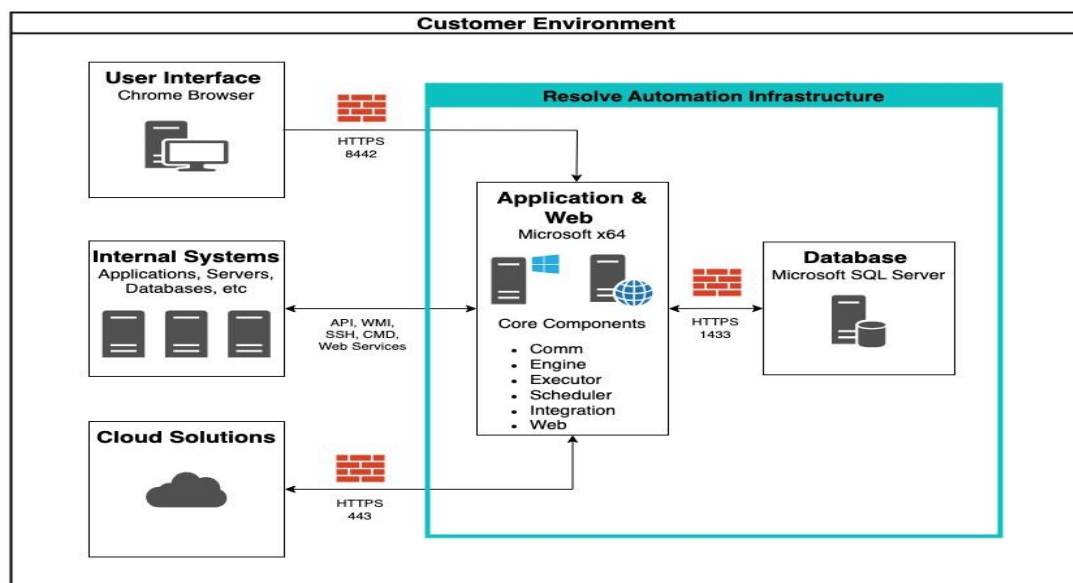
Solution Architecture Diagram:

Figure 1: Architecture and Data Flow of the ResolveNow Application

Key Architecture Components:

Layer	Technologies / Responsibilities
Frontend	Built using **React.js**, styled with **Material UI** and **Bootstrap** for responsive design.
Backend	Developed in **Node.js** with **Express.js**, responsible for APIs, routing, authentication, etc.
Database	**MongoDB** for storing users, complaints, chats, and feedback in structured collections.
Authentication	**JWT** based secure login for users, agents, and admins.
Real-time Chat	Enabled via **Socket.IO** to allow users and agents to communicate on complaint threads.
Email/SMS Alerts	Uses **Nodemailer** and optionally **Twilio** for notifications and updates.
Hosting	Frontend and backend can be deployed on **Vercel**, **Render**, or **MongoDB Atlas** (cloud DB).

Reference

AWS Blog – Voice Applications in Clinical Research (Architecture and Design Considerations)
https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-poweredby-ai-on-aws-part-1-architecture-and-design-considerations/