

## Project Design Phase Solution Architecture

Date	26 June 2025
Team ID	LTVIP2025TMID53123
Project Name	ResolveNow: Your Platform for Online Complaints
Maximum Marks	4 Marks

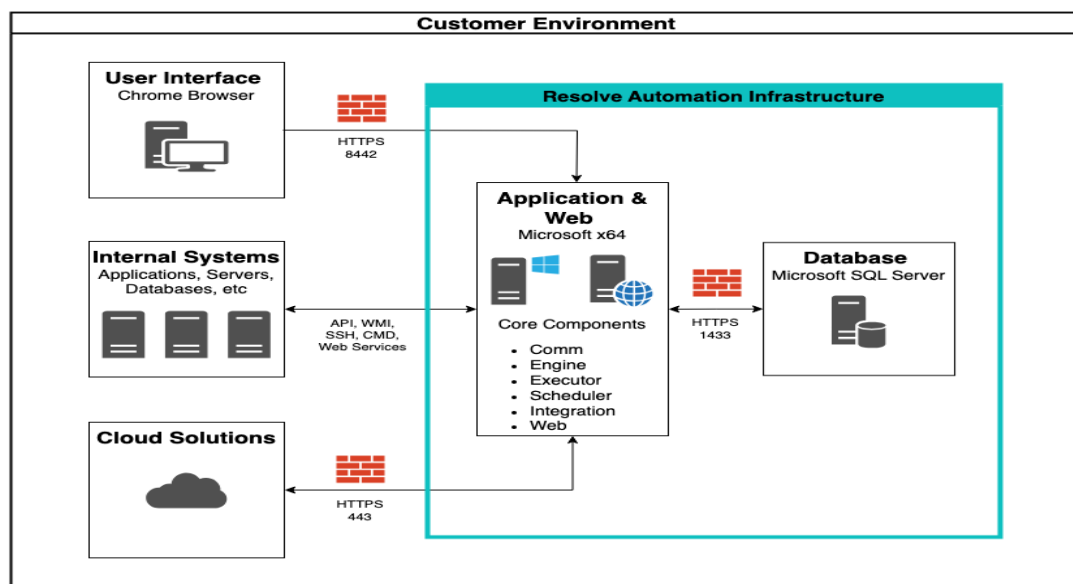
### Solution Architecture – ResolveNow

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 <b>React.js</b> , styled with <b>Material UI</b> and <b>Bootstrap</b> for responsive design.
Backend	Developed in <b>Node.js</b> with <b>Express.js</b> , responsible for APIs, routing, authentication, etc.
Database	<b>MongoDB</b> for storing users, complaints, chats, and feedback in structured collections.
Authentication	<b>JWT</b> based secure login for users, agents, and admins.
Real-time Chat	Enabled via <b>Socket.IO</b> to allow users and agents to communicate on complaint threads.
Email/SMS Alerts	Uses <b>Nodemailer</b> and optionally <b>Twilio</b> for notifications and updates.
Hosting	Frontend and backend can be deployed on <b>Vercel</b> , <b>Render</b> , or <b>MongoDB Atlas</b> (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-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/>