

Final Project Report: ONLINE COMPLAINTS REGISTRATION AND MANAGEMENT SYSTEM

1. INTRODUCTIONS

1.1 Project Overview

Resolve Now is an online complaint registration and management system is a software application or platform that allows individuals or organizations to submit and track complaints or issues they have encountered.

It can help optimize the complaint-handling process and empower organizations to develop a safety management system to efficiently resolve customer complaints while staying in line with industry guidelines and regulatory compliance obligations. It provides a centralized platform for managing complaints, streamlining the complaint resolution process, and improving customer satisfaction.

1.2 Purpose

The primary purpose of this project is to create a centralized, user-friendly complaint management system that:

- Allows users to register grievances online.
- Facilitates communication between users and service authorities.
- Automates categorization and routing of complaints.
- Provides analytics for tracking performance and satisfaction.
- Improves accountability and ensures timely redressal.

It consists of some key features which include:

1. User registration: Users can create accounts to submit complaints and track their progress.
2. Complaint submission: Users can enter details of their complaints, including relevant information such as name, description of the issue, address, etc.
3. Tracking and notifications: Users can track the progress of their complaints, view updates, and receive notifications via email or SMS when there are any changes or resolutions.
4. Users can interact with the agent who has assigned the complaint.
5. Assigning and routing complaints: The system assigns complaints to the appropriate department or personnel responsible for handling them. It may use intelligent routing algorithms to ensure efficient allocation of resources.
6. Security and confidentiality: The system ensures the security and confidentiality of user data and complaint information through measures such as user authentication, data encryption, access controls, and compliance with relevant data protection regulations.

2. Ideation Phase

2.1 Define the Problem Statements

Date	31 January 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	2 Marks

Customer Problem Statement Template:

Create a problem statement to understand your customer's point of view. The Customer Problem Statement template helps you focus on what matters to create experiences people will love.

A well-articulated customer problem statement allows you and your team to find the ideal solution for the challenges your customers face. Throughout the process, you'll also be able to empathize with your customers, which helps you better understand how they perceive your product or service.

I am	Describe customer with 3-4 key characteristics - who are they?	Describe the customer and their attributes here
I'm trying to	List their outcome or "job" the care about - what are they trying to achieve?	List the thing they are trying to achieve here
but	Describe what problems or barriers stand in the way - what bothers them most?	Describe the problems or barriers that get in the way here
because	Enter the "root cause" of why the problem or barrier exists - what needs to be solved?	Describe the reason the problems or barriers exist
which makes me feel	Describe the emotions from the customer's point of view - how does it impact them emotionally?	Describe the emotions the result from experiencing the problems or barriers

Reference: <https://miro.com/templates/customer-problem-statement/>

Example:



2.2 Empathy Map Canvas

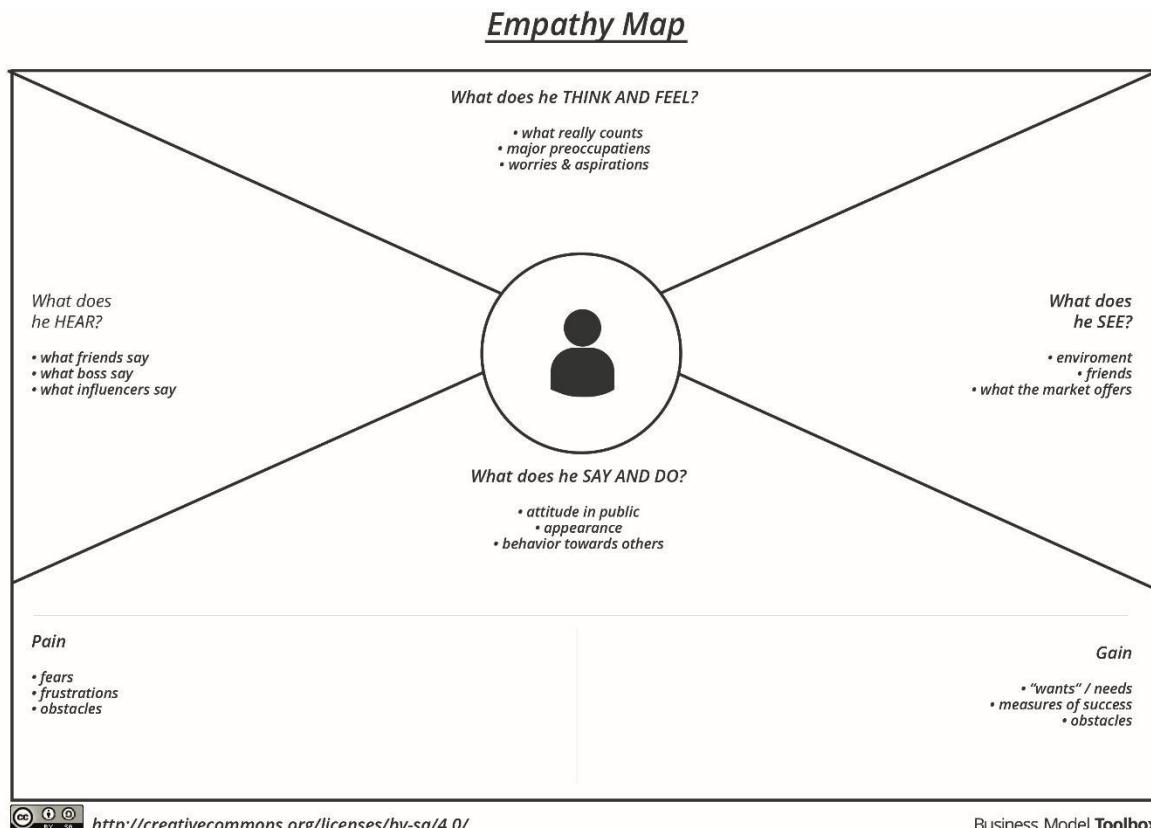
Date	31 January 2025
Team ID	LTVIP2025TMID53637
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Maximum Marks	4 Marks

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.

It is a useful tool to help teams better understand their users.

Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.

Example:



Business Model Toolbox

Reference: <https://www.mural.co/templates/empathy-map-canvas>

2.3 Brainstorm & Idea Prioritization

Date	31 January 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	4 Marks

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Reference: <https://www.mural.co/templates/brainstorm-and-idea-prioritization>

Step-1: Team Gathering, Collaboration and Select the Problem Statement

The screenshot shows the 'Brainstorm & idea prioritization' template from Mural. It's divided into three main sections: 'Before you collaborate', 'Define your problem statement', and 'Key rules of brainstorming'.

- Before you collaborate:** Includes a lightbulb icon, a timer icon (10 minutes), and a text box for 'Team gathering' which says "Define who should participate in the session and send an invite. Share relevant information or pre-work ahead." There's also a link to "Open article".
- Define your problem statement:** Includes a timer icon (5 minutes) and a text box labeled "PROBLEM" containing "How might we [your problem statement]?".
- Key rules of brainstorming:** A summary of six rules with icons:
 - Stay in topic.
 - Encourage wild ideas.
 - Defer judgment.
 - Listen to others.
 - Go for volume.
 - If possible, be visual.

At the bottom left, there's a sidebar with a lightbulb icon and a text box: "Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room." It also lists preparation time: "10 minutes to prepare", "1 hour to collaborate", and "2-8 people recommended".

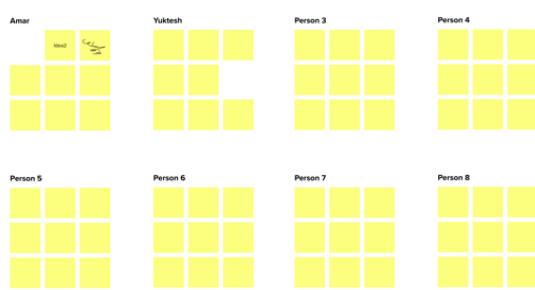
Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes



3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and break it up into smaller sub-groups.

⌚ 20 minutes

Person 4

TIP
Add customizable tags to sticky notes to make it easier to find, browse, and filter. You can also categorize important ideas as themes within your mural.

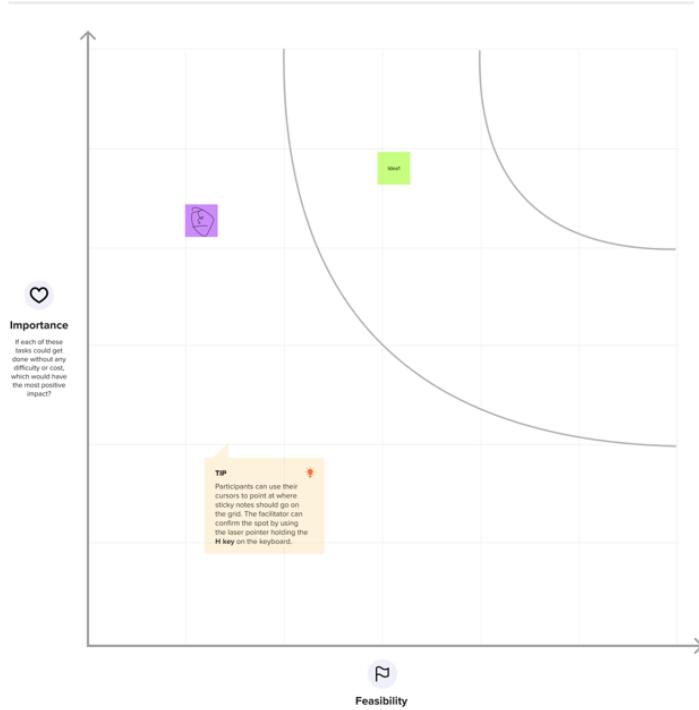
Step-3: Idea Prioritization

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes



3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

Date	31 January 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	4 Marks

Customer Journey:

Stage	Action	Experience	Pain Points
Awareness	Learns about Resolve Now via search/social	Curious but unsure of legitimacy	Limited trust in new platforms
Registration	Signs up and logs in	Smooth and intuitive	Possible hesitation sharing data
Complaint Filing	Fills out complaint form	Easy to use, uploads proof/documents	May not know correct category
Tracking Progress	Views dashboard/status updates	Feels informed	Delays in resolution
Resolution/Closure	Receives final response	Satisfied or can escalate further	No satisfaction = frustration

3.2 Solution Requirement

Date	31 January 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	4 Marks

- **Functional Requirements:**

- User Registration/Login
- Complaint Filing Module
- Category & Department Auto-routing
- Status Tracker
- Admin Dashboard
- Feedback and Rating System

- **Non-Functional Requirements:**

- Responsive UI
- Secure Authentication
- Scalable Database
- Timely Notifications
- Uptime > 99%

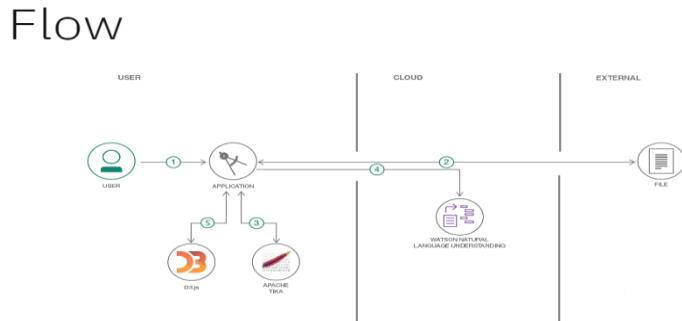
3.3 Data Flow Diagram (DFD) – Level 1

Date	31 January 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	4 Marks

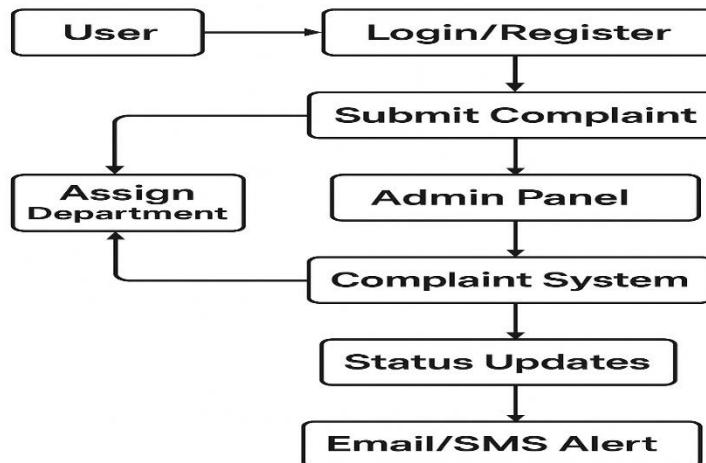
Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Example:



1. User configures credentials for the Watson Natural Language Understanding service and starts the app.
2. User selects data file to process and load.
3. Apache Tika extracts text from the data file.
4. Extracted text is passed to Watson NLU for enrichment.
5. Enriched data is visualized in the UI using the D3.js library.



3.4 Technology Stack

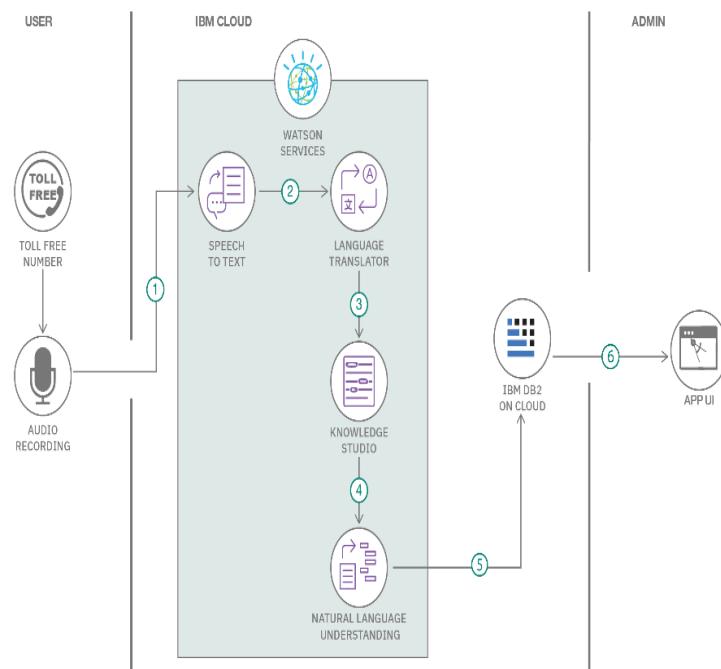
Date	31 January 3035
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Logic for a process in the application	Java / Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used

Table-2: Application Characteristics:

References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>

4. PROJECT DESIGN

4.1 Problem-Solution Fit

Date	15 February 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	2 Marks

Problem – Solution Fit Template:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioural patterns and recognize what would work and why

Purpose:

- Solve complex problems in a way that fits the state of your customers.
- Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behaviour.
- Sharpen your communication and marketing strategy with the right triggers and messaging.
- Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
- Understand the existing situation in order to improve it for your target group.

Template:

<p>1. CUSTOMER SEGMENT(S) Who is your customer? I.e. working parents of 0-5 y.o. kids</p>	<p>6. CUSTOMER CONSTRAINTS What constraints prevent your customers from taking action or limit their choices of solutions? I.e. spending power, budget, no cash, network connection, available devices.</p>	<p>5. AVAILABLE SOLUTIONS Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? I.e. pen and paper is an alternative to digital notetaking</p>
<p>2. JOBS-TO-BE-DONE / PROBLEMS Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</p>	<p>9. PROBLEM ROOT CAUSE What is the real reason that this problem exists? What is the back story behind the need to do this job? I.e. customers have to do it because of the change in regulations.</p>	<p>7. BEHAVIOUR What does your customer do to address the problem and get the job done? I.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)</p>
<p>3. TRIGGERS What triggers customers to act? I.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.</p>	<p>10. YOUR SOLUTION If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.</p>	<p>8. CHANNELS OF BEHAVIOUR 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7</p> <p>8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.</p>
<p>4. EMOTIONS: BEFORE / AFTER How do customers feel when they face a problem or a job and afterwards? I.e. lost, insecure > confident, in control - use it in your communication strategy & design.</p>		

References:

1. <https://www.ideahackers.network/problem-solution-fit-canvas/>
2. <https://medium.com/@epicantus/problem-solution-fit-canvas-aa3dd59cb4fe>

4.2 Proposed Solution

Date	15 February 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	2 Marks

To address the inefficiencies and lack of transparency in traditional complaint handling systems, our team proposes ResolveNow, a centralized, web-based platform for complaint registration and management. The solution is designed to empower users with real-time tracking, streamline the process for administrators, and ensure timely resolution of complaints through automated alerts and intelligent routing.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Existing complaint systems lack transparency, real-time tracking, and efficient routing, causing delays and dissatisfaction among users.
2.	Idea / Solution description	A fully functional web platform where users can file and track complaints, admins can manage and assign them via dashboards, and automated alerts ensure timely resolutions.
3.	Novelty / Uniqueness	Real-time complaint tracking, role-based dashboards (user, agent, admin), built-in chat feature with agents, and integration of email/SMS alerts.
4.	Social Impact / Customer Satisfaction	Improves citizen trust by enhancing transparency and response time in issue resolution. Allows users to stay informed and receive timely feedback.
5.	Business Model (Revenue Model)	The platform can be offered as a SaaS model to government bodies, institutions, or private companies for internal or public grievance redressal.
6.	Scalability of the Solution	Designed using modular architecture and cloud-ready tech stack (React, Node.js, MongoDB), making it scalable across cities, departments, or sectors.

4.3 Solution Architecture

Date	15 February 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.
- Provide specifications according to which the solution is defined, managed, and delivered.

Example - Solution Architecture Diagram:

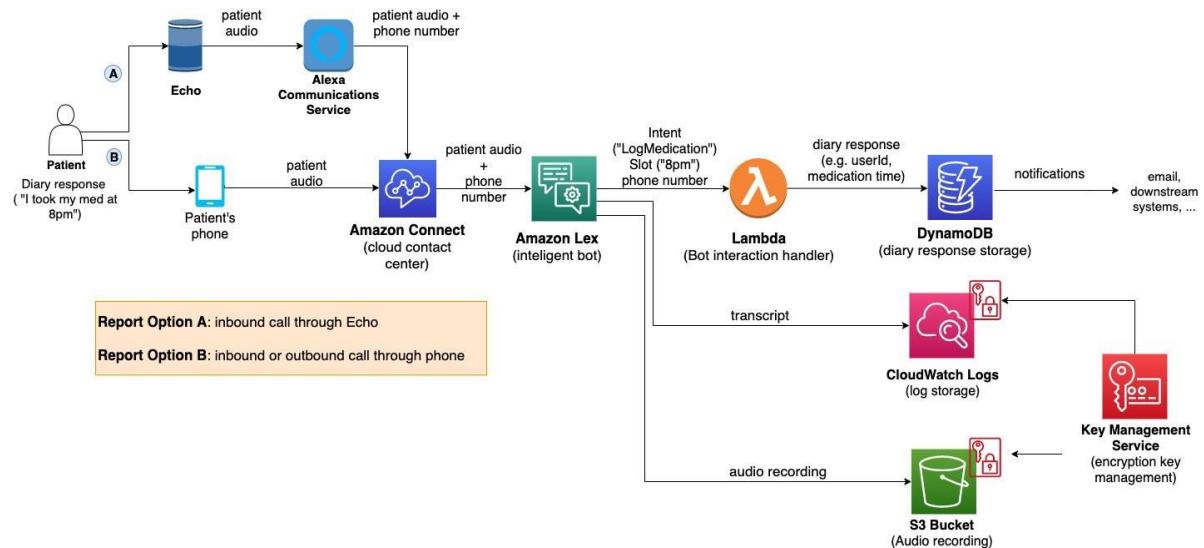


Figure 1: Architecture and data flow of the voice patient diary sample application

Reference: <https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/>

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Project Setup & Planning	USN-1	As a team, we gather requirements, define the problem, and brainstorm ideas.	2	High	All Members
Sprint-1	UI/UX Design	USN-2	As a designer, I will create wireframes, diagrams, and finalize the tech stack.	3	Medium	John Victor
Sprint-2	Frontend Development	USN-3	As a user, I can log in and access the complaint dashboard.	4	High	John Victor
Sprint-2	Frontend Development	USN-4	As a user, I can submit a complaint with attachments.	3	High	John Victor
Sprint-3	Backend APIs	USN-5	As a dev, I can build REST APIs for registration, login, and complaint handling.	4	High	Manikanta Raju
Sprint-3	Backend APIs	USN-6	As an admin, I can assign complaints to agents.	3	High	Manikanta Raju
Sprint-4	Integration	USN-7	As a system, I will connect frontend and backend and test flow.	4	High	Full Team
Sprint-5	Notifications & Messaging	USN-8	As a user, I receive SMS/Email alerts and chat with agents.	3	Medium	Leeladhar, Sasi Kumar
Sprint-6	Testing and Documentation	USN-9	As a team, we test all modules and prepare the final report/demo setup.	4	High	Full Team

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

Date	26 Jun 2025
Team ID	LTVIP2025TMID53637
Project Name	ResolveNow – Online Complaint Registration and Management System
Maximum Marks	4 Marks

Project Overview:

Project Name: ResolveNow – Online Complaint Registration and Management System

Project Version: 1.0

Testing Period: 26 Jun 2025 – 27 Jun 2025

Testing Scope

- User Registration and Login
- Complaint Submission
- Complaint Tracking and Status Updates
- Agent and Admin Interactions
- Notification System
- System Performance under Load
- UI Responsiveness across devices

Testing Environment

- URL: <http://localhost:3000>
- Credentials:
 - User: di@123.com / di123
 - Admin: johnvictordabbakuti@gmail.com / john123
 - Agent: j@123.com / j123

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Load Testing	Simulate 100 users via JMeter/Postman	Average response time \leq 2s	Average 1.2s response time	Pass
TC-002	Stress Testing	Increase concurrent users up to 300 via JMeter	Acceptable degradation or timeout above 250+	Degradation observed at 250+	Pass
TC-003	Functional Testing	Manually test all core functionalities (Login, Submit Complaint, Track, Chat)	All features functional	All passed	Pass
TC-004	UI Responsiveness	Resize browser, check on mobile/tablet using Chrome Dev Tools	UI adapts without distortion	Fully responsive	Pass
TC-005	API Performance	Measure API response times via Postman	API response time $<$ 1.5 sec	Avg 1.2 sec	Pass

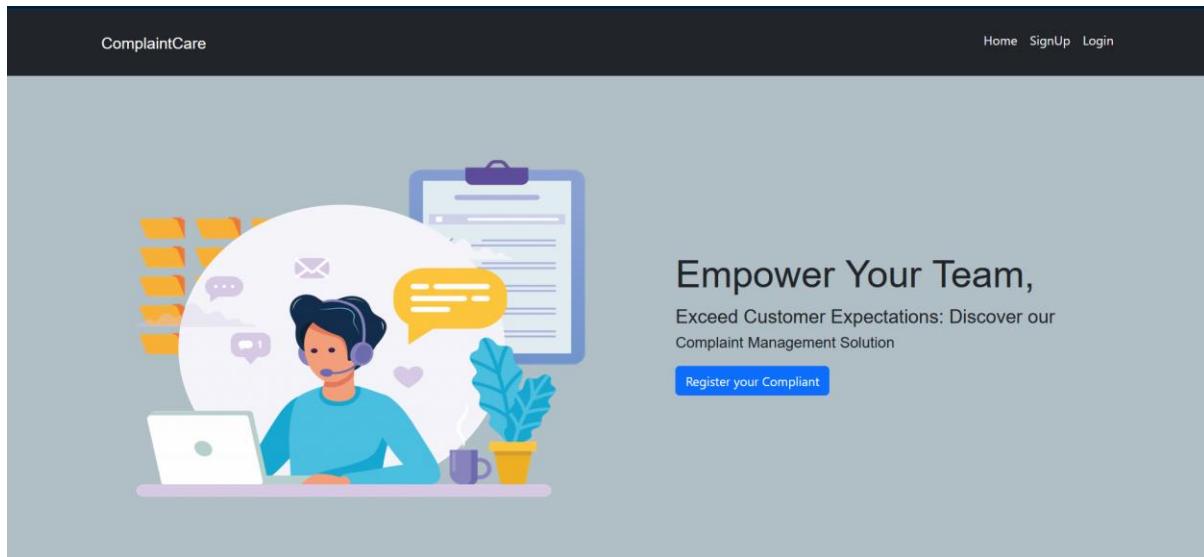
Bug Tracking:

Bug ID	Bug Description	Steps to reproduce	Severity	Status	Additional feedback
BG-001	No critical bugs reported	NA	NA	NA	System stable during tests

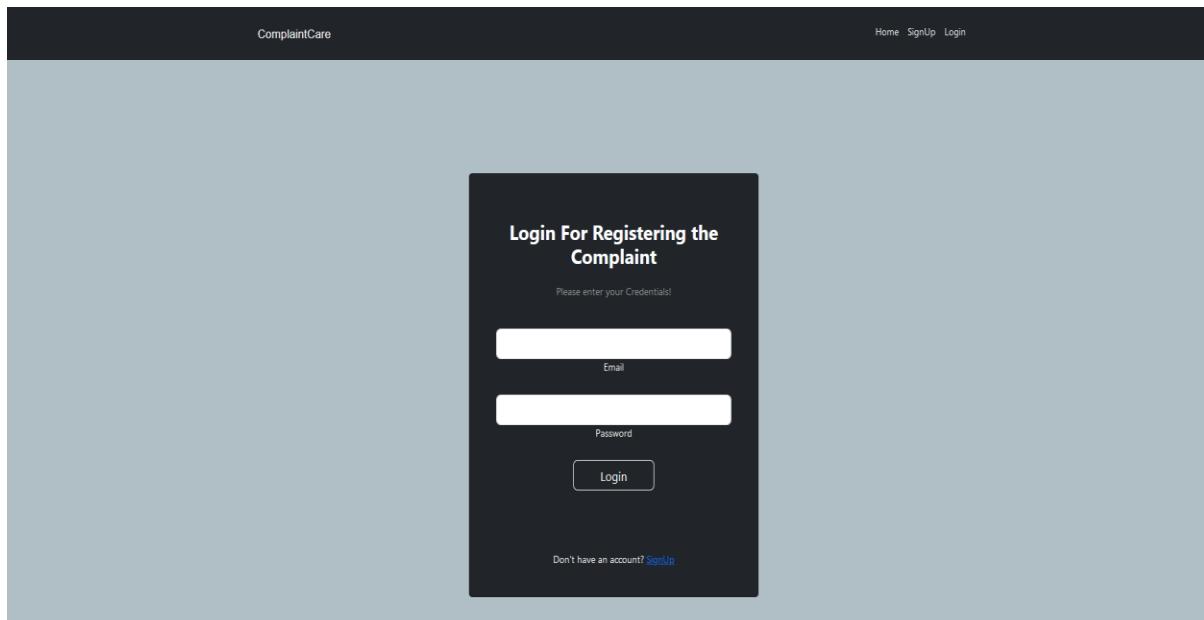
7. RESULTS

7.1 Output Screenshots

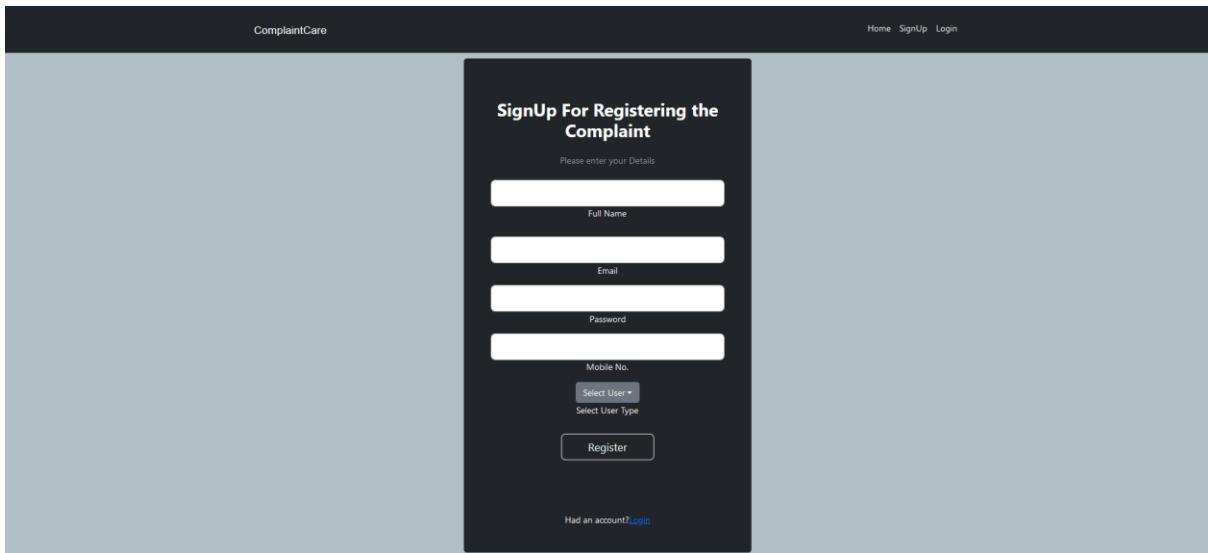
- **Landing Page**



- **Login Page**



- **Registration Page**



The screenshot shows the registration page for 'ComplaintCare'. At the top, there's a navigation bar with links for 'Home', 'SignUp', and 'Login'. The main content area has a dark background with white text and input fields. It features a title 'SignUp For Registering the Complaint' and a subtitle 'Please enter your Details'. There are four input fields labeled 'Full Name', 'Email', 'Password', and 'Mobile No.'. Below these is a dropdown menu labeled 'Select User' with an option 'Select User type'. A 'Register' button is at the bottom, and a link 'Had an account? [Login](#)' is at the very bottom.

- **Common Dashboard for Complaint**



The screenshot shows a common dashboard for complaints. At the top, it displays 'Hi, shadeel' and links for 'Complaint Register' and 'Status'. On the right, there's a red 'LogOut' button. The main area contains a form with several input fields: 'Name' and 'Address' (both with placeholder text), 'City' and 'State' (both with placeholder text), 'Pincode' and 'Status' (with 'Status' having placeholder text 'type pending'), and a large 'Description' field with a placeholder text 'Type your complaint here...'. A 'Register' button is located at the bottom of the form. At the bottom of the page, there's a footer with the text 'ComplaintCare © 2024'.

● Admin Dashboard

Hi Admin John Victor [Dashboard](#) [User](#) [Agent](#)

Users Complaints

Name: Dinesh Address: chirala City: Bapatla State: Ap Pincode: 523155 Comment: My account is not working Status: completed	Name: leela Address: chirala City: bapatla State: ap Pincode: 523155 Comment: my acc is not working Status: completed	Name: Dinesh Address: chirala City: bapatla State: ap Pincode: 523155 Comment: My accounting is not working properly. can you please go through it. Status: completed
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Agents

Name: j Email: j@123.com
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● Agent Dashboard

Hi Agent j [View Complaints](#) [Log out](#)

Name: Dinesh Address: chirala City: Bapatla State: Ap Pincode: 523155 Comment: My account is not working Status: completed	Name: Dinesh Address: chirala City: Bapatla State: Ap Pincode: 523155 Comment: My account is not working Status: pending	Name: leela Address: chirala City: bapatla State: ap Pincode: 523155 Comment: my acc is not working Status: completed	Name: Dinesh Address: chirala City: bapatla State: ap Pincode: 523155 Comment: My accounting is not working properly. can you please go through it. Status: completed
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8. ADVANTAGES & DISADVANTAGES

Advantages

- **User-Friendly Interface:** Simple layout and form-based design make it accessible for all users.
- **Time-Efficient:** Drastically reduces the time taken to register and resolve complaints.
- **Transparency & Tracking:** Real-time complaint status increases trust and accountability.
- **Data-Driven:** Complaint patterns can be analysed to improve services.
- **Scalable System:** Can support government bodies, corporations, or educational institutions.
- **Multi-Platform Accessibility:** Responsive design works on mobile and desktop.
- **Security:** User authentication and data protection through secure APIs.

Disadvantages

- **Internet Dependence:** Requires stable internet for access.
- **Initial Learning Curve:** Some non-tech-savvy users may need assistance initially.
- **Resource Intensive:** Requires backend and server management.
- **Delayed Human Responses:** If teams do not act quickly, it still affects resolution time despite a good system.

9. CONCLUSION

The Resolve Now project successfully demonstrates how technology can streamline the grievance redressal process. It provides a centralized, transparent, and efficient method for users to file complaints, track progress, and receive resolution updates.

By integrating a structured backend with a user-friendly frontend and automated notification systems, the platform offers a full-cycle complaint handling solution. It addresses the key challenges of traditional systems and can easily be adapted for various sectors.

This project reflects how digital tools can be leveraged to enhance accountability and build trust between service providers and end-users.

10. FUTURE SCOPE

- **Mobile App Development:** Launching dedicated Android/iOS apps for easier access.
- **AI-Based Triage:** Automating complaint categorization and priority tagging.
- **Advanced Analytics:** Integrating dashboards for department-wise performance and trend monitoring.

- **Multi-Language Support:** Adding regional languages for better accessibility.
- **Third-Party Integrations:** Integration with email clients, WhatsApp bots, and CRM tools.
- **Blockchain for Immutable Logs:** For legal or audit-proof complaint records.
- **Online Mediation System:** Real-time dispute resolution via video conferencing.

11. APPENDIX

GitHub & Project Demo Link

GitHub Repo:

<https://github.com/john-victor-000/ResolveNow-Your-Platform-for-Online-Complaints.git>

Project Demo:

https://drive.google.com/file/d/1iPDH_J_8h_3gdYc0lINFU5MFcB2LgbIT/view?usp=drive_link

Final Checklist for Submission:

- Full report written in sections
- UI screenshots included
- Code uploaded to GitHub
- Demo recorded or presented live
- Appendix with references and links