



# AWAZE-E-JANATA- VOICE OF THE PEOPLE

Rajveer Pratap Singh<sup>1</sup>, Aman Tiwari<sup>2</sup>, Raj Yadav<sup>3</sup>, Mr. Dileep Kumar Gupta<sup>4</sup>

CSE, Goel Institute of Technology and Management, Lucknow, India<sup>1-3</sup>

Assistant Professor, CSE, Goel Institute of Technology and Management, Lucknow, India<sup>4</sup>

**Abstract:** Awaze-e-Janata – Voice of the People is a digital platform designed to bridge the communication gap between citizens and government authorities. The primary objective of this system is to provide a simple, accessible, and transparent medium through which people can raise their complaints, issues, and suggestions related to public services. This platform enables users to submit complaints manually or with the assistance of Artificial Intelligence, making the process faster and more efficient. The system categorizes and forwards the complaints to the relevant authorities, ensuring that the issues reach the correct department without delay. Additionally, it allows users to track the status of their complaints, promoting transparency and accountability. The project focuses on solving real-world societal problems by empowering citizens and enhancing public participation in governance. By integrating modern technologies such as web development and AI-based assistance, the system aims to improve communication, reduce response time, and build trust between the public and government institutions.

Overall, Awaze-e-Janata serves as an effective tool for digital governance, ensuring that every voice is heard and every issue is addressed efficiently.

## 1 INTRODUCTION

In today's rapidly advancing digital world, establishing an effective communication channel between citizens and government authorities remains a major challenge. Traditional methods of lodging complaints are often time-consuming, unclear, and lack proper guidance, which discourages many citizens from reporting their issues. As a result, several public problems remain unresolved due to improper communication and lack of awareness about the complaint process. To overcome these limitations, the project "AwazeeJanata – Voice of the People" is proposed as an intelligent digital platform that empowers citizens to raise their concerns efficiently. The system provides a user-friendly interface where individuals can submit complaints, track their status, and ensure that their issues reach the appropriate authorities.

A key highlight of this project is the integration of an Artificial Intelligence-based chatbot that assists users in drafting complaint applications. Many citizens are often unaware of how to properly write a complaint or which department to address it to. To solve this, the chatbot allows users to simply describe their issue in natural language— for example, "*dirty water flow on the road*"—and automatically generates a well-structured complaint application. The AI not only formats the complaint professionally but also suggests the appropriate department to which the complaint should be sent. This intelligent assistance reduces user effort, eliminates confusion, and ensures that complaints are written in a clear and effective manner. Furthermore, the system categorizes and forwards complaints to relevant authorities, improving efficiency and reducing delays in the grievance redressal process.

By combining web technologies with AI-driven assistance, **Awaze-e-Janata** enhances transparency, promotes accountability, and encourages greater public participation in governance. The platform aims to bridge the gap between citizens and authorities, ensuring that every individual—regardless of their technical or writing skills—can effectively raise their voice.

## 2 PROBLEM STATEMENTS

In many regions, citizens face significant difficulties in reporting public issues such as poor sanitation, water leakage, road damage, and other civic problems. Existing complaint systems are often inefficient, time-consuming, and lack proper guidance for users. Many people are unaware of how to write a formal complaint or which government department is responsible for addressing their issue. As a result, complaints are either not filed or are submitted incorrectly, leading to delays or complete inaction.

Additionally, traditional grievance redressal systems lack transparency and proper tracking mechanisms, making it difficult for citizens to monitor the status of their complaints. This creates a communication gap between the public and authorities, reduces accountability, and leads to dissatisfaction among citizens. Another major challenge is the absence of intelligent assistance in current systems. Users, especially those with limited education or technical knowledge, struggle to draft proper complaint applications and often feel discouraged from raising their concerns. Therefore, there is



a need for a smart, userfriendly, and efficient digital platform that not only allows citizens to register complaints easily but also guides them in drafting well-structured applications and directs them to the appropriate authorities. The system should also ensure transparency, provide real-time tracking, and leverage modern technologies such as Artificial Intelligence to simplify the entire process.

### 3 OBJECTIVES OF THE STUDY

#### 3.1 To develop a user-friendly digital platform

The primary objective of this project is to design and develop an intuitive and easy-to-use digital platform that allows citizens to register and submit their complaints without any technical difficulty. The system is designed in such a way that even users with minimal technical knowledge can easily navigate, understand, and use the platform to report their issues effectively.

#### 3.2 To integrate an AI-based chatbot system

A major objective of this project is to incorporate an Artificial Intelligence-based chatbot that can assist users in drafting complaint applications. The chatbot interacts with users in natural language and automatically generates well-structured, formal complaint letters based on the user's input, reducing the effort required from the user.

#### 3.3 To provide proper guidance to users

Many users are unaware of the correct department responsible for handling their issues. This system aims to guide users by analyzing their complaint and suggesting the appropriate government department, ensuring that complaints are directed to the right authority for faster resolution.

#### 3.4 To enable location-based complaint reporting

The system allows users to share their current geographical location along with their complaint. This helps authorities to accurately identify the problem area and respond more quickly and efficiently. Location-based reporting also improves the precision and effectiveness of issue resolution.

#### 3.5 To ensure transparency in the grievance redressal process

The project aims to provide a transparent system where users can track the real-time status of their complaints. This feature ensures that users remain informed about the progress of their issues and builds trust in the system.

#### 3.6 To reduce the communication gap between citizens and authorities

One of the key objectives is to bridge the gap between citizens and government bodies by providing a direct and digital communication channel. This eliminates delays and miscommunication, enabling smoother interaction between both parties.

#### 3.7 To improve the efficiency of complaint handling systems

The system automatically categorizes complaints based on their type and forwards them to the relevant departments. This reduces manual effort, avoids misrouting, and speeds up the overall complaint handling process.

#### 3.8 To encourage public participation in governance

By simplifying the complaint submission process and making it accessible to everyone, the project aims to motivate more citizens to actively participate in governance and raise their concerns without hesitation.

**3.9 To minimize errors in complaint submission** The AI chatbot ensures that complaints are written in a proper format with all necessary details included. This reduces the chances of incomplete or incorrect submissions and increases the effectiveness of communication.

#### 3.10 To build a scalable and reliable system

The system is designed using modern web technologies to ensure scalability, reliability, and performance. It can handle a large number of users and complaints efficiently, making it suitable for real-world implementation.

### 4 LITERATURE REVIEW

In recent years, significant research has been conducted in the areas of e-governance, online complaint management systems, and Artificial Intelligence-based chatbots to improve communication between citizens and government authorities. These studies aim to enhance transparency, efficiency, and accessibility in public service delivery.

#### 4.1 Digital Access to Government Services

E-Governance systems provide citizens with online access to government services, reducing the need for physical visits and making services more convenient and accessible.

#### 4.2 Improvement in Service Delivery

According to **Richard Heeks (2006)**, e-governance significantly improves service delivery by reducing administrative inefficiencies and speeding up processes.



#### 4.3 Reduction in Administrative Workload

These systems help minimize manual effort and paperwork through automation, leading to more efficient and streamlined operations within government departments.

#### 4.4 Enhanced Transparency and Citizen Engagement

The **United Nations (2020)** highlights that e-governance increases transparency and encourages active participation of citizens in governance.

4.5 **Efficient Complaint Handling** Research by **S. K. Sharma and A. Gupta (2015)** shows that online complaint management systems improve efficiency by organizing and managing complaints in a structured manner.

#### 4.6 Structured Workflow for Issue Resolution

These systems follow a defined workflow where complaints are registered, processed, and resolved step-by-step, ensuring systematic handling of public grievances.

#### 4.7 Complaint Tracking and Better Communication

Studies from the International Journal of Computer Applications highlight that web-based systems allow users to track the status of their complaints and improve communication between citizens and authorities.

#### 4.8 Limitations in Intelligence and User Support

Despite their advantages, most systems lack intelligent routing mechanisms and do not assist users in drafting proper complaint applications, leading to incorrect or incomplete submissions.

#### 4.9 Automation of User Interaction

AI-based chatbots automate communication between users and systems by providing instant responses and assistance, reducing the need for human intervention.

#### 4.10 Natural Language Communication

The early work of **Joseph Weizenbaum (1966)** introduced the concept of natural language interaction, enabling users to communicate with machines in a human-like manner.

#### 4.11 Real-Time Assistance and Improved User Experience

Modern studies, including those from IEEE, show that AI chatbots enhance user experience by offering real-time guidance, quick responses, and interactive support.

#### 4.11 Limited Use in Public Grievance Systems

Despite their advantages, most existing chatbot systems in governance platforms are limited in functionality and do not generate complete complaint applications or provide departmentspecific suggestions.

## 5 METHODOLOGY

The proposed system “Awaze-e-Janata – Voice of the People” is designed as an intelligent digital platform that enables citizens to register complaints efficiently with the help of AI and modern web technologies. The working of the system can be explained as follows:

### 5.1 USER FLOW

The user flow of the proposed system “Awaze-E-Janata – Voice of the People” is designed to ensure a smooth, secure, and user-friendly experience for citizens while submitting and managing complaints.

#### 5.1.1 User Registration

The process begins with user registration. The user fills out a registration form by providing essential details such as name, email address, mobile number, and password. This step ensures that only authenticated users can access the system.

#### 5.1.2 Email Verification

After registration, the user is redirected to an email verification page. A verification code (OTP) is sent to the registered email address. The user enters the code to verify their identity, ensuring security and preventing fake registrations.

#### 5.1.3 User Authentication and Access

Once the email is successfully verified, the user is authorized to log in to the system. After login, the user gains access to the main dashboard, where they can perform various actions such as submitting complaints, interacting with the AI chatbot, and viewing complaint history.

#### 5.1.4 Complaint Submission

The user can navigate to the complaint registration page and manually fill out the complaint form. The form includes fields such as:

- Name
- Mobile Number
- Email
- Complaint Title



- Description of the Issue
- Department Selection
- Address (Manual Entry) or Location Capture

This ensures that all necessary details are collected for effective complaint processing.

#### 5.1.5 User Dashboard and Complaint Tracking

After logging in, users can access their personal dashboard where they can:

- View all submitted complaints
- Check the status of each complaint (e.g., pending, in progress, resolved)
- Track the progress of their issues

#### 5.1.6 User Dashboard and Complaint Tracking

After logging in, users can access their personal dashboard where they can:

- View all submitted complaints
- Check the status of each complaint (e.g., pending, in progress, resolved)
- Track the progress of their issues

#### 5.1.7 Profile Management

The system allows users to edit and update their account details such as name, email, and mobile number. This ensures that user information remains accurate and up-to-date.

## 5.2 Complaint Submission

### 5.2.1 Manual Form Filling

The user fills out the complaint form by providing required details such as name, mobile number, email, complaint title, description, and department selection, ensuring that the complaint is complete and informative.

### 5.2.2 Address and Location Input

The system allows users to either manually enter their address or capture their current location. This helps in accurately identifying the problem area for faster resolution.

### 5.2.3 Review of Complaint Application

Before final submission, the user is given an option to review the entered details. This step helps in verifying accuracy and making necessary corrections, reducing errors in submission.

### 5.2.4 Final Submission and Data Storage

Once the user confirms the details, the complaint is submitted and stored in the database. The system then processes the complaint and makes it available for further actions such as tracking and resolution.

## 5.3 AI Chatbot Working

### 5.3.1 User Input in Natural Language

The user interacts with the chatbot by describing their issue in simple, everyday language (e.g., “dirty water flowing on the road”), making the system easy to use for all users.

### 5.3.2 Input Analysis and Understanding

The AI chatbot processes and analyzes the user’s input using natural language processing techniques to understand the problem accurately.

### 5.3.3 Automatic Complaint Generation

Based on the input, the chatbot generates a wellstructured and properly formatted complaint application, reducing the need for manual writing.

### 5.3.4 Department Suggestion

The chatbot intelligently identifies the nature of the issue and suggests the appropriate government department for submitting the complaint.

### 5.3.5 Improved User Experience and Efficiency

This feature minimizes user effort, reduces errors, and ensures that complaints are clear, professional, and directed to the correct authority.



## 6 SYSTEM ARCHITECTURE

The system architecture of “Awaze-e-Janata – Voice of the People” follows a modular and scalable design, consisting of three main layers: Frontend (Client Side), Backend (Server Side), and Database, along with external services such as email verification and AI chatbot integration.

### 6.1 Frontend Layer (Client Side)

The frontend of the system is developed using React.js, styled with Tailwind CSS, and enhanced with UI effects using Three.js.

- Provides an interactive and user-friendly interface
- Handles user registration, login, and complaint submission
- Displays chatbot interface for AI interaction
- Allows users to track complaint status and manage profile
- Communicates with backend APIs using HTTP requests

### 6.2 Backend Layer (Server Side)

The backend is built using Node.js and Express.js.

- Handles API requests from frontend
- Manages authentication and authorization
- Processes complaint data and user inputs
- Integrates AI chatbot API for generating complaints
- Sends verification emails using SendGrid
- Implements business logic such as department mapping and complaint routing

### 6.3 Database Layer

The system uses MongoDB as the database.

- Stores user data (name, email, password, etc.)
- Stores complaint details (title, description, department, location)
- Maintains complaint status and history
- Ensures fast data retrieval and scalability

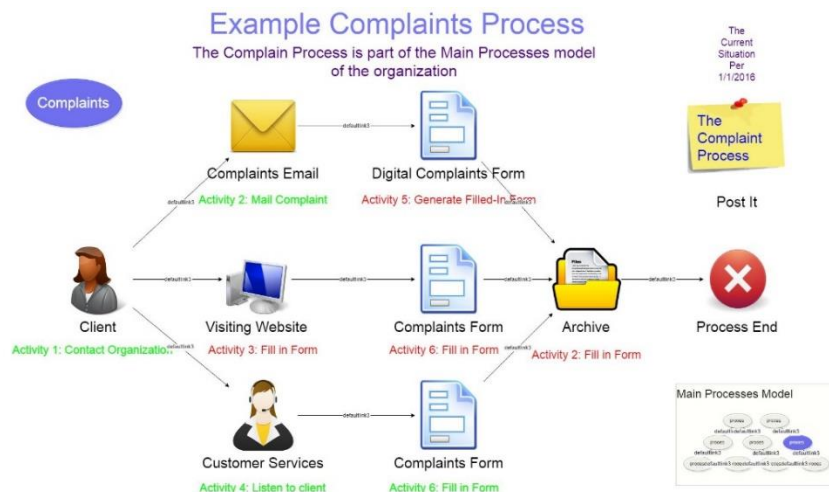
### 6.4 AI Chatbot Integration

The system integrates AI capabilities using Google Gemini API.

- Accepts user input in natural language
- Generates structured complaint applications automatically
- Suggests appropriate departments based on the issue
- Enhances user experience with intelligent assistance

### 6.5 Email Verification System

- Uses SendGrid to send OTP/verification codes
- Ensures secure user registration
- Prevents fake or invalid accounts





## 7 IMPLEMENTATION

The implementation of the proposed system “Awaze-e-Janata – Voice of the People” is carried out using modern web technologies, ensuring scalability, efficiency, and user-friendly interaction. The system is divided into three main components: Frontend, Backend, and Database, along with integration of external services such as AI chatbot and email verification.

### 7.1 Frontend Implementation

The frontend of the system is developed using React.js, which provides a dynamic and responsive user interface. Styling is implemented using Tailwind CSS, enabling a clean and modern design with minimal effort. Additionally, **Three.js** is used to create interactive and visually appealing UI effects.

- Developed responsive UI using React.js
- Styled components using Tailwind CSS
- Integrated 3D UI effects using Three.js
- Built chatbot interface using React components
- Implemented forms for registration, login, and complaint submission
- Connected frontend with backend using REST APIs (HTTP/HTTPS)

### 7.2 Backend Implementation

The backend is developed using **Node.js** with **Express.js**, which handles all server-side logic and API management.

- Created RESTful APIs for user and complaint management
- Implemented authentication and authorization (JWT-based)
- Handled complaint processing and department mapping
- Integrated **Gemini API** for AI chatbot functionality
- Managed location data and request processing
- Integrated email services for OTP verification

## GETTING STARTED

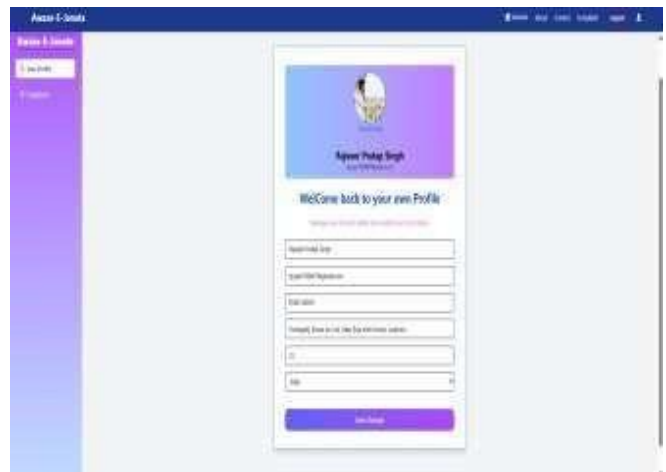




SIGNUP PAGE



LOGIN PAGE



USER PROFILE

REGISTER COMPLAINTS  
DETAIL PAGE

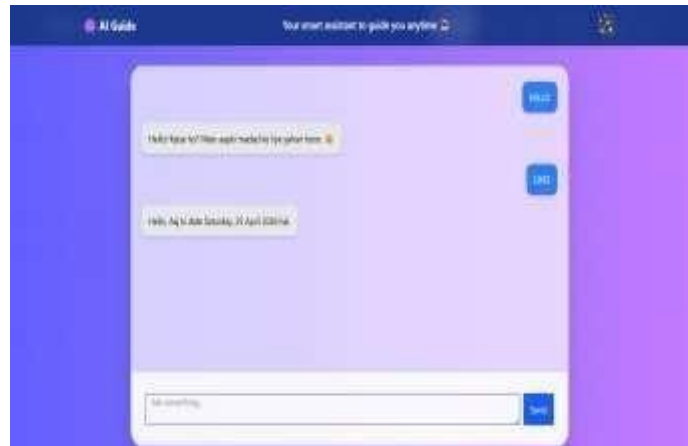


COMPLAINTS





## COMPLAINTS PAGE



## Complaints manual page

## 8 RESULTS AND DESCUSIONS

The implementation of the proposed system demonstrates significant improvements over traditional complaint management methods. The key outcomes and observations are as follows:

**8.1 Improved Ease of Complaint Submission**

The system simplifies the complaint submission process through a user-friendly interface and AI assistance.

- Users can easily submit complaints without technical knowledge
- AI chatbot helps in writing structured applications
- Reduces confusion and effort for users

**8.2 Reduction in Errors and Incomplete Complaints**

The integration of AI ensures that complaints are properly formatted and complete.

- Automatically generated complaints include all necessary details
- Minimizes chances of incorrect or incomplete submissions
- Improves quality of communication with authorities

**8.3 Accurate Department Routing**

The system intelligently maps complaints to the correct department.

- Reduces misrouting of complaints
- Ensures faster processing and resolution
- Saves time for both users and authorities

**8.4 Enhanced Transparency through Tracking**

The complaint tracking feature increases system transparency.

- Users can monitor complaint status in real time
- Provides clear updates (Submitted, In Progress, Resolved)
- Builds trust between citizens and authorities

**8.5 Faster Issue Resolution with Location Support**

Location-based reporting improves the efficiency of handling complaints.

- Authorities can identify exact problem location
- Reduces delay in locating issues
- Enables quicker response and action

**8.6 Improved User Experience with AI Integration**

The AI chatbot significantly enhances user interaction.



- Provides instant assistance and guidance
- Makes system accessible to non-technical users
- Encourages more people to raise complaints

### 8.7 Increased Citizen Participation

The system motivates citizens to actively report issues.

- Easy-to-use interface increases engagement
- Reduces hesitation in complaint submission
- Promotes digital participation in governance

### 8.8 Overall System Efficiency and Automation

Automation reduces manual workload and improves performance.

- Backend processing is faster and more organized
- Reduces dependency on manual handling
- Scalable system for handling large number of users

## 9 ADVANTAGES OF SYSTEMS

The proposed system offers several advantages over traditional and existing complaint management systems. These are described as follows:

### 9.1 AI-Based Smart Assistance

Unlike traditional systems, this platform integrates an AI chatbot that helps users in drafting complaints.

- Automatically generates well-structured complaint applications
- Reduces dependency on user writing skills
- Makes the system accessible to all types of users

### 9.2 User-Friendly Interface

The system is designed with simplicity and ease of use in mind.

- Easy navigation for non-technical users
- Clean and responsive UI using modern technologies
- Reduces confusion during complaint submission

### 9.3 Accurate Department Mapping

The system intelligently suggests the correct department.

- Eliminates wrong complaint submissions
- Ensures faster issue resolution
- Saves time for both users and authorities

### 9.4 Location-Based Complaint Reporting

Provides precise location details along with complaints.

- Helps authorities identify exact problem area
- Speeds up action and resolution process
- Improves accuracy in handling issues

### 9.5 Reduced Errors and Improved Accuracy

AI integration minimizes mistakes in complaint submission.

- Ensures proper format and complete details
- Reduces incomplete or incorrect complaints
- Improves communication quality

### 9.6 Secure User Authentication

Provides safe and verified access to the system.

- OTP-based email verification
- Prevents fake or duplicate accounts
- Ensures data security

### 9.7 Scalable and Modern Technology Stack

Built using modern technologies like React, Node.js, and MongoDB.

- Handles large number of users efficiently
- Easy to maintain and upgrade
- Suitable for real-world deployment

### 9.8 Encourages Citizen Participation



The system motivates more people to raise their voice.

- Simplifies complaint process
- Reduces hesitation among users
- Promotes digital governance

## 10 LIMITATIONS OF THE SYSTEMS

### 1 AI Accuracy Limitations

The AI chatbot may not always provide perfectly accurate results.

- It may generate incorrect or incomplete complaints
- Department suggestions may sometimes be inaccurate
- Complex or unclear inputs can confuse the AI

### 2 Data Privacy and Security Concerns

The system stores user data such as email, location, and complaints.

- There is a risk of data breaches if not properly secured
- Strong security measures are required to protect user information

### 3 Dependence on Third-Party Services

The system relies on external services such as:

- SendGrid for email verification
  - Gemini API for AI chatbot functionality
- If these services fail or experience downtime, system functionality may be affected

### 4 Limited User Awareness

Not all users are familiar with digital platforms.

- Some users may find it difficult to use the system
- Additional awareness or guidance may be required

### 5 Scalability Challenges

If the number of users increases significantly:

- System performance may slow down
- Server load may increase without proper optimization

### 6 Language Limitations

If the system supports only one language (e.g., English):

- It may not be accessible to users who prefer regional languages
- Multi-language support is needed for wider accessibility

## 11 FUTURE SCOPE

The proposed system has strong potential for further enhancement and real-world deployment. The following improvements can be implemented in the future:

### 1 Mobile Application Development

To increase accessibility and usability, a dedicated mobile application can be developed.

- Native apps for Android and iOS platforms
- Push notifications for complaint updates
- Better user engagement through mobilefriendly UI
- Offline support for drafting complaints

### 2 Voice-Based Complaint System

The system can be enhanced with voice input features.

- Users can speak their complaints instead of typing
- Speech-to-text conversion for automatic complaint generation
- Useful for illiterate or non-technical users
- Faster and more convenient complaint submission

### 3 Multi-Language Support

To make the system accessible to a wider audience, multiple language support can be added.

- Support for regional languages (Hindi, etc.)
- Language selection option for users
- AI chatbot responses in different languages
- Improves usability for non-English users



### 3 Advanced AI Improvements

The AI chatbot can be further enhanced with advanced capabilities.

- More accurate complaint generation
- Better understanding of complex user queries
- Personalized suggestions based on user history
- Integration with machine learning for continuous improvement

### 5 Government System Integration

The platform can be integrated with official government systems.

- Direct connection with municipal and government databases
- Faster complaint processing and resolution
- Real-time updates from authorities
- Improved authenticity and reliability

### 6 Real-Time Notifications

Adding notification systems for better communication.

- SMS and email alerts for status updates
- In-app notifications
- Instant updates on complaint progress

### 7 Data Analytics and Dashboard

Advanced analytics can be added for better decision-making.

- Reports on common issues and trends
- Department performance analysis
- Data visualization for authorities
- Helps in improving governance strategies

## 12 CONCLUSIONS

The project “Awaze-e-Janata – Voice of the People” successfully presents an intelligent and usercentric solution to improve the public grievance redressal system. The key conclusions are as follows:

**1 Effective Digital Platform for Citizens** The system provides a simple and accessible digital platform that allows citizens to easily register and manage their complaints.

### 2 Integration of AI for Smart Assistance

The use of an AI-based chatbot significantly improves the complaint submission process by automatically generating structured applications and guiding users.

### 3 Improved Transparency and Accountability

The complaint tracking feature ensures transparency by allowing users to monitor the status of their complaints in real time.

### 4 Accurate and Efficient Complaint Routing

The system intelligently maps complaints to the appropriate departments, reducing delays and improving efficiency in issue resolution.

### 5 Enhanced User Experience

With a user-friendly interface and AI assistance, the system becomes accessible even to nontechnical users, increasing usability and satisfaction.

### 6 Location-Based Problem Identification

The integration of location services helps authorities quickly identify the exact issue area, leading to faster and more accurate responses.

### 7 Encouragement of Citizen Participation

By simplifying the complaint process, the system motivates more citizens to actively participate in governance and raise their concerns.

### 8 Scalable and Future-Ready Solution

Built using modern technologies, the system is scalable and can be further enhanced with features like mobile apps, voice support, and advanced AI integration.

**REFERENCES**

- [1]. Richard Heeks, "Implementing and
- [2]. Managing e-Government: An International Text", SAGE Publications, 2006.
- [3]. United Nations, E-Government Survey 2020: Digital Government in the Decade of Action", United Nations, 2020.
- [4]. S. K. Sharma and A. Gupta, "Online Complaint Management System", International Journal of Computer Applications, 2015.
- [5]. International Journal of Computer Applications, "Web-Based Complaint Management System", IJCA Publications.
- [6]. Joseph Weizenbaum, "ELIZA – A Computer Program for the Study of Natural Language
- [7]. Communication Between Man and Machine", Communications of the ACM, 1966.
- [8]. Layne, Karen and Lee, Jungwoo, "Developing Fully Functional E-Government: A Four Stage Model", Government Information Quarterly, 2001.
- [9]. Jaeger, Paul T., "Deliberative Democracy and the Conceptual Foundations of Electronic Government", Government Information Quarterly, 2005.
- [10]. Alan Turing, "Computing Machinery and Intelligence", Mind Journal, 1950.
- [11]. Jurafsky, Daniel and Martin, James H., "Speech and Language Processing", Pearson, 2008.
- [12]. IEEE, "Chatbot Applications in Customer Service and E-Governance", IEEE Papers.