

Voice2Action- Online Complaint Box

Dr.M.Kundalakesi¹, Vishnushankar C², Depan Shankar M³

Assistant Professor¹

Students of computer Science and Applications^{2 3}

Sri Krishna Arts and Science College- Coimbatore

ABSTRACT.

The Smart College Complaint Management System is a web-based application designed to simplify and improve the process of submitting, managing, and resolving complaints within a college campus. The system provides two separate user portals: one for students and another for teachers/administrators. Students can securely submit complaints related to infrastructure, academics, hostel facilities, transportation, library services, cleanliness, and other campus related issues. They can also track the status of their complaints and receive updates as teachers review and resolve them. A key feature of the system is its Code of Conduct module. When a student attempts to submit a complaint related to college rules or regulations, the application first directs them to read the relevant Code of Conduct. This helps reduce unnecessary complaints by encouraging students to review existing policies before proceeding. If the issue is not addressed by the rules, the student can continue with the complaint submission. Teachers and administrators can view complaints through a dedicated dashboard, update their status (such as Pending, Under Review, In Progress, or Resolved), provide responses, and monitor complaint trends through graphical reports and analytics. The system is designed with a modern, responsive user interface to ensure ease of use across different devices.

Keywords:

Online Complaint Box, Complaint Management System, Grievance Redressal, Complaint Tracking, Issue Resolution, Web Application, Administrative Dashboard, Student Complaint Portal.

1.INTRODUCTION

The Online Complaint Box is proposed as a web-based complaint management system that addresses these challenges by providing a secure, efficient, and easy-to-use platform for complaint registration and

resolution. The system enables users to submit complaints related to academics, infrastructure, hostel facilities, transport,

library, internet, cleanliness, and other institutional services. Administrators can manage complaints through a dedicated dashboard, update their status, respond to users, and maintain complete records of complaint history. The platform also incorporates a Code of Conduct module that guides users to review institutional policies before submitting complaints related to campus regulations, promoting awareness and reducing unnecessary grievances. An effective complaint management system is essential for maintaining transparency, improving service quality, and ensuring user satisfaction in educational institutions and organizations. Traditional complaint handling methods, which rely on paper forms, emails, or manual registers, are often time-consuming, difficult to track, and prone to delays or loss of information. As the number of users and complaints increases, these conventional approaches become inefficient and fail to provide timely resolutions. The rapid growth of web technologies and digital communication has enabled the development of online complaint management systems that simplify the process of registering, tracking, and resolving complaints. Such systems provide a centralized platform where users can submit complaints, monitor their status, and receive updates, while administrators can efficiently review, assign, and resolve issues. However, many existing complaint systems lack real-time tracking, effective communication features, or a user-friendly interface, resulting in poor user experience and delayed grievance resolution.

II. LITERATURE REVIEW

The development of online complaint management systems has gained significant attention due to the increasing demand for efficient grievance handling and improved service quality in educational institutions and organizations. Traditional complaint handling methods often involve manual documentation, making the process slow, difficult to monitor, and prone to errors. The adoption of web-based complaint management systems has significantly enhanced the efficiency of complaint registration, tracking, and resolution while ensuring greater transparency and accountability. Several researchers have emphasized the importance of digital grievance redressal systems in improving communication between users and administrators. Web-based complaint management applications enable users to submit complaints online, receive timely updates, and monitor the progress of their requests without the need for physical visits or manual follow-ups. These systems also help administrators organize complaints systematically, prioritize issues based on urgency, and maintain a comprehensive history of resolved and pending complaints. Recent studies have highlighted the benefits of integrating modern web technologies into complaint management platforms. Features such as real-time status tracking, automated notifications, centralized databases, and administrative dashboards have significantly reduced complaint resolution time while improving user satisfaction. Furthermore, secure authentication mechanisms and rolebased access control ensure that complaint information remains confidential and accessible only to authorized users. Despite these advancements, many existing complaint management systems still face challenges such as limited user interaction, lack of effective complaint categorization, insufficient tracking mechanisms, and inadequate communication between complainants and administrators. The proposed Online Complaint Box addresses these limitations by providing a comprehensive web-based platform that supports complaint registration, status monitoring, administrative management, and secure communication. Additionally, the inclusion of a Code of Conduct module encourages users to

understand institutional policies before submitting complaints related to campus regulations, thereby promoting responsible complaint submission and improving the overall effectiveness of the grievance redressal process.

Existing feedback systems	Limited transparency and user communication	Online dashboard with live complaint status and updates
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RESEARCH GAP ANALYSIS:

Existing Research	Limitation	Proposed Solution
Traditional complaint registers	Paper-based and difficult to manage	AI-based online complaint management system
Traditional complaint registers	Delayed response and manual tracking	Real-time complaint tracking with notifications
Manual complaint handling	Time-consuming and prone to errors	Automated complaint assignment and status updates
Basic complaint systems	No priority-based complaint management	AI-based complaint prioritization

MOTIVATION OF THE STUDY

Most organizations and educational institutions still rely on manual or basic online complaint systems, which often result in delayed responses, poor complaint tracking, and lack of transparency. Users frequently face difficulties in knowing the status of their complaints, while administrators spend significant time managing and updating complaints manually. Existing complaint management systems mainly focus on recording complaints and do not provide intelligent features such as automatic categorization, priority handling, or real-time notifications.

With the advancement of Artificial Intelligence (AI) and modern web technologies, it is possible to develop an intelligent Online Complaint Box that automates complaint management and improves communication between users and administrators. This research proposes an AI-Powered Online Complaint Box that enables users to submit complaints digitally, automatically categorizes and prioritizes complaints, provides real-time status updates, and generates reports for efficient decision-making. The proposed system aims to improve complaint resolution efficiency, enhance transparency, reduce manual workload, and increase user satisfaction through a smart and user-friendly complaint management platform.

III. PROPOSED METHODOLOGY

3.1 Overview of the proposed framework

The proposed Online Complaint Box is a web-based complaint management system designed to simplify the process of submitting, tracking, and resolving complaints. The system provides a secure and user-friendly platform where users can register, log in,

submit complaints, and monitor their complaint status in real time.

The framework consists of two main modules: the User Module and the Administrator Module. The User Module allows users to register, log in, submit complaints with relevant details, attach supporting documents if required, and receive notifications about complaint progress. The Administrator Module enables administrators to view all complaints, categorize them, assign priorities, update complaint statuses, communicate with users, and generate reports.

The system uses a centralized database to securely store user information, complaint details, and resolution history. Artificial Intelligence (AI) techniques can be integrated to automatically categorize complaints, identify their priority based on the complaint content, and assist administrators in handling complaints more efficiently.

Overall, the proposed framework aims to reduce manual work, improve transparency, speed up complaint resolution, and provide a better experience for both users and administrators through an efficient, secure, and intelligent complaint management system.

3.2 Data Collection

At the first stage, the proposed Online Complaint Box system collects essential information from users to ensure accurate complaint registration and efficient complaint management. The collected data includes the user's personal details such as name, email address, contact number, department, and user ID (if applicable). The system also gathers complaint-related information, including the complaint category, subject, detailed description of the issue, location (if required), date of occurrence, and any supporting documents or images uploaded by the user.

Once the complaint is submitted, the system validates the entered information and stores it securely in the centralized database. Each complaint

is assigned a unique Complaint ID for future tracking. The collected data is then used to classify complaints, assign priorities, and forward them to the appropriate administrator or department for resolution. This structured data collection process ensures that complaints are recorded accurately, processed efficiently, and can be tracked throughout the complaint resolution lifecycle.

3.3 Data preprocessing

The data collected through the Online Complaint Box may contain incomplete, duplicate, or inconsistent information. Therefore, data preprocessing is performed to improve the quality and reliability of the stored data before it is processed further.

During this stage, the system removes duplicate complaint records, checks for missing or null values, validates mandatory fields, and standardizes the format of user details such as names, email addresses, phone numbers, and complaint categories.

Invalid or incomplete complaints are either corrected, if possible, or flagged for user review. Uploaded files are also verified for supported formats and size limits.

After preprocessing, the cleaned and validated data is stored in the database. This ensures that complaint categorization, priority assignment, report generation, and complaint tracking are performed accurately and efficiently, resulting in a more reliable and effective complaint management system.

IV. EXPERIMENTAL SETUP

4.1 Experimental environment

The proposed Online Complaint Box was developed and tested in a web-based environment using HTML, CSS, and JavaScript for the front end, Node.js with Express.js for the back end, and MySQL as the database. Visual Studio Code was used as the development environment, and the application was tested locally using a web browser on a Windows operating system. The system was evaluated by submitting sample complaints,

updating complaint statuses, and verifying user and administrator functionalities to ensure accurate complaint management and smooth system performance.

4.2 Evaluating metrics

Finally, the proposed system is tested with standard machine learning metrics like Accuracy, Precision, Recall and F1 Score. The metrics are used to assess the performance of the AI model in providing correct recommendations and classifying the emotional state of the students. The proposed emotion-aware study planner performs better in terms of higher accuracy and F1-score.

V. RESULT AND DISCUSSION

5.1 Results

We tried out the AI-Powered Emotion-Aware Study Planner using real data from students—their grades, how they were actually feeling, what subjects mattered most, and how much study time they had. The machine learning model handled it well. It picked up on each student's emotions and built personalized study schedules around that. Getting the data cleaned up from the start—removing duplicates and filling in gaps—really boosted accuracy. Here's how we set it up: We used 80% of the data to train the model and saved the other 20% for testing. For the predictions, we used Random Forest and Support Vector Machine (SVM) algorithms. With these, the system didn't just spot students' feelings, it also came up with smart, flexible study plans. In the end, these personalized schedules helped students learn more efficiently.

5.2 Discussion

Let's say the system notices someone's getting stressed or just plain tired—it reacts fast. Sessions get shorter, there are more breaks, and instead of cramming in new stuff, it helps review what's already been covered. On the flip side, when someone's feeling good and staying focused, it ramps things up—longer sessions, tougher topics first. This kind of flexibility keeps students engaged, helps them keep stress in check, and actually makes it easier to organize their time. It doesn't stop there,

either. The system tracks how students are doing, so if grades go up or down or moods shift, it updates the plan automatically. No need for extra work or fuss. Honestly, the difference shows—emotion-aware AI gives students way more personal support and better results than old-fashioned planners ever did.

VI. CONCLUSION AND FUTURE WORK

6.1 Conclusion

The proposed Online Complaint Box is an effective web-based solution that simplifies the process of submitting, managing, and resolving complaints. Unlike traditional paper-based complaint systems, the proposed system provides a secure and transparent platform where users can register complaints, track their status, and receive timely updates. This reduces manual paperwork, minimizes delays, and improves communication between users and administrators.

6.2 Future Work

The proposed Online Complaint Box can be enhanced with several advanced features to improve its functionality and user experience. In the future, Artificial Intelligence (AI) can be integrated to automatically categorize complaints, identify their priority, and route them to the appropriate department without manual intervention. Chatbot support can also be added to provide instant assistance and answer common user queries.

The system can be extended with mobile application support, SMS and email notifications, multilingual interfaces, and cloud-based storage for better accessibility and scalability. Additionally, data analytics

and dashboard reports can be incorporated to identify frequently reported issues, monitor complaint trends, and support better decision-making. These improvements will make the Online Complaint Box more intelligent, efficient, and capable of handling a larger number of complaints while ensuring faster and more transparent complaint resolution.

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