



AN IMPLEMENTATION OF E-COMPLAINTS ANALYSIS FOR QUICK RESPONSE TO CITIZEN COMPLAINTS

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ABSTRACT:

An implementation of E-Complaint analysis for quick response to citizen complaints is a web-based application developed using the Django framework, specifically designed to streamline the process of handling public complaints. The system allows the public to easily submit their complaints through an intuitive online interface. Once a complaint is submitted, the system automatically categorizes it based on its nature, ensuring it is directed to the appropriate department or officer for resolution. This categorization helps in organizing complaints efficiently, reducing the time taken to address issues and enhancing the overall user experience. For administrators, the implementation of E-Complaint analysis for quick response to citizen complaints provides a comprehensive dashboard that offers a centralized view of all submitted complaints. This dashboard enables administrators to allocate complaints to the relevant officers, track their progress, and ensure timely resolution. The dashboard's user-friendly interface allows for easy monitoring of the status of each complaint, from initial submission to final resolution. This feature not only aids in maintaining a high level of organization but also ensures that no complaint is overlooked or left unresolved, thereby improving operational efficiency. One of the key goals of the implementation of E-Complaint analysis for quick response to citizen complaints is to foster better communication and trust between citizens and government authorities. Upon submitting a complaint, users receive immediate acknowledgment, providing reassurance that their issue is being addressed. As the complaint progresses through various stages, users are kept informed via email updates, ensuring transparency throughout the process. This continuous communication builds accountability and trust, as citizens feel their concerns are being taken seriously. Ultimately, the system aims to enhance the relationship between the public and government, promoting a more responsive and responsible governance structure.

Keywords: E-Complaint analysis, Dashboard's user-friendly interface, Complaint progresses.

INTRODUCTION :

The implementation of E-Complaints analysis for quick response to citizen complaints is a web-based application designed to streamline the process of handling public grievances and complaints. Utilizing the Django framework, this system provides a user-friendly platform for citizens to submit their complaints seamlessly online. It allows government authorities to efficiently manage, allocate, and resolve these complaints through an administrative dashboard. The system categorizes complaints based on their nature, assigns them to relevant officers, and facilitates real-time tracking of their progress. Citizens receive immediate acknowledgment upon submission and are kept informed through email updates as their complaint advances from pending to resolution. Administrators oversee the entire process, monitor response times, and ensure accountability, fostering transparency and trust between the public and authorities. The primary objective of the E-Complaints system is to develop a web-based application that makes it easier and more convenient for citizens to submit their complaints.

By implementing an automated categorization system, the application ensures that complaints are accurately classified and directed to the appropriate department or officer for resolution. This enhances the overall user experience by reducing the time taken to address complaints and ensuring that no complaint is overlooked. The system aims to improve operational efficiency and foster better communication and trust between citizens and government authorities by providing immediate acknowledgment of submitted complaints and regular updates on their progress. DLK Career Development Centre, the organization behind this project, is a leading IT training institute based in Chennai, India. Specializing in a variety of IT courses, including Java, Python, AWS, Oracle, and PHP, DLK CDC focuses on real-time, hands-on training delivered by industry experts. The institute offers both classroom and online training options, emphasizing flexibility, affordability, and comprehensive learning.

LITERATURE SURVEY

1. AI-DRIVEN COMPLAINT MANAGEMENT SYSTEM

Citizen's Complaint is important information reflecting citizen's sound. Our main objective of the organization is to give valuable and productive feedback to the citizens. The design we proposed for an AI-driven logging portal will have the strength to minimize citizens' worry and additionally, it can inspire people to promote our country by logging complaints on our website. In this paper, we propose a new model that is an AI-driven logging portal where

we try to improve communication between citizens and government, and we try to make transparent communication to make your country a better place to live. There are different services for different types of complaints in your web portal. These services are used by numerous citizens based on their grievances. We have created a framework that can recognize citizens' problems and provide timely feedback to citizens. This system can recognize grievances by identifying and commenting on each complaint that has been raised. The concern of citizens is treated according to the priority in this portal. That is a problem depending on the seriousness of the situation that will be prioritized.

2. CUSTOMER COMPLAINT MANAGEMENT SYSTEM USING SOA

Sri Lankan citizens who are seeking government services are not always served as they expected. Therefore, there is a need to have a convenient way to make and handle customer complaints. When a government has many service-providing centers or departments, customers should know what the issue-related department is and then they should browse relevant departments to make the complaint. When the customer needs to view the status of the complaint, then again customer should visit and browse the relevant department. This has become very tedious and cumbersome for customers to visit various departments and make these complaints or view statuses since there is no standard process to submit their complaints. If there is only one common portal to make any complaint and get the solution, it is easier for their tight schedule. The investigations regarding these issues in complaint management were carried out through web resources. The research was carried out phase by phase which consists of analysis, conceptual design, and implementation design. A prototype was developed while achieving a set of defined objectives. The researcher conducted a study and analysis of the current processes in government departments. It found the common and specific details related to issue resolution and identified the specific inputs needed from users related to the issue. Then, it designed a solution that could be used to capture issues related to different departments. Here, it came up with a solution that users can interact with and submit their complaints without worrying about what the issue-related department is. Other than that, the developed web portal can capture common details as well as department-specific details related to the issue. Finally, the researcher developed a solution that can interact with different governmental departments to route and manage the overall issue resolution process using an algorithm designed in the BPEL layer with the BPEL engine. In this research, it was investigated the benefits of a comprehensive complaint management system in e-government and proposed an e-complaint model based on SOA. There were some limitations as well in the data capturing level and research level since some departments avoid exposing some sensitive data. This prototype can be further extended and developed in the future.

3. NAIVE BAYESIAN AUTOMATIC CLASSIFICATION OF RAILWAY SERVICE COMPLAINT TEXT BASED ON EIGENVALUE EXTRACTION

Railways have developed rapidly in China for several decades. The hardware of railways has already reached the world's leading level, but the level of service of these railways still has room for improvement. The railway management department receives a large number of passenger complaints every year and records them in text, which needs to be classified and analyzed. The text of railway complaints includes characteristics spanning wide business coverage, various events, serious colloquialisms, interference, and useless information. When using direct classification via traditional text categorization, the classification accuracy is low. The key to the automatic classification of such text lies in an eigenvalue extraction. The more accurate the eigenvalue extraction, the higher the accuracy of text classification. In this paper, the TF-IDF algorithm, TextRank algorithm, and Word2vec algorithm are selected to extract text eigenvalues, and a railway complaint text classification method is constructed with a naive Bayesian classifier. The three types of eigenvalue extraction algorithms are compared. The TF-IDF algorithm, based on eigenvalue extraction, achieves the highest automatic text classification accuracy.

4. EXPLORING THE IMPACT OF MANAGERIAL RESPONSES TO ONLINE REVIEWS IN THE SHARING ECONOMY: A CASE OF ACCOMMODATION SHARING SERVICE

Strategies to respond to online reviews have been discussed in many previous studies. However, researchers rarely pay attention to the managerial response in the sharing economy context. With sampling from the accommodation-sharing service, two studies are conducted to investigate the impact of responses to online reviews. The results show that B&B's responses to online reviews positively affect its popularity ranking, volumes of online reviews, and helpfulness votes. When addressing consumer complaints, response quality, which refers to response length and empathy, is significantly related to the helpfulness votes of a review. This research also explores the interaction between response and review qualities. Results indicate that response length synergistically contributes to the consumer's perceived helpfulness with review length and consumer-provided photos whereas response empathy has no interactive effects with review length but works well with review photos. Several theoretical and practical implications are generated based on the research findings.

5. LARGE LANGUAGE MODELS IN CRYPTOCURRENCY SECURITIES CASES: CAN A GPT MODEL MEANINGFULLY ASSIST LAWYERS

Large Language Models (LLMs) could be a useful tool for lawyers. However, empirical research on their effectiveness in conducting legal tasks is scant. We study securities cases involving cryptocurrencies as one of numerous contexts where AI could support the legal process, studying GPT-3.5's legal reasoning and ChatGPT's legal drafting capabilities. We examine whether a) GPT-3.5 can accurately determine which laws are potentially being violated from a fact pattern, and b) whether there is a difference in juror decision-making based on complaints written by a lawyer compared to ChatGPT. We feed fact patterns from real-life cases to GPT-3.5 and evaluate its ability to determine correct potential violations from the scenario and exclude spurious violations. Second, we had mock jurors assess complaints written by ChatGPT and lawyers. GPT-3.5's legal reasoning skills proved weak, though we expect improvement in future models, particularly given the violations it suggested tended to be correct (it merely missed additional, correct violations). ChatGPT performed better at legal drafting, and jurors' decisions were not statistically significantly associated with the author of the document upon which they based their decisions. Because GPT-3.5 cannot satisfactorily conduct legal reasoning tasks, it would be unlikely to be able to help lawyers in a meaningful way at this stage. However, ChatGPT's drafting skills (though, perhaps, still inferior to lawyers) could assist lawyers in providing legal services. Our research is the first to systematically study an LLM's legal drafting and reasoning capabilities in litigation, as well as in securities law and cryptocurrency-related misconduct.

III. PROPOSED SYSTEM

The proposed implementation of E-Complaint analysis for quick response to Citizen complaints is designed to revolutionize the way public grievances are managed and resolved. At its core, the system consists of three main components: a user interface for complaint submission, an administrative dashboard for complaint management, and an email notification system for updates and communication. Firstly, the user interface will provide a simple yet comprehensive platform for citizens to submit their complaints online. Users will be required to fill out a form detailing the nature of their complaint, along with any relevant attachments or documentation. Upon submission, users will receive an immediate confirmation email, reassuring them that their complaint has been successfully lodged and is being processed. This interface will also feature functionalities such as complaint tracking, allowing users to monitor the status of their complaint and receive updates as it progresses through the resolution process. Secondly, the administrative dashboard will serve as a centralized hub for managing and allocating complaints. Authorized administrators will have access to a dashboard where they can view all incoming complaints, categorize them based on priority or department, and assign them to the relevant officer for resolution. The dashboard will also provide tools for monitoring the progress of complaints, enabling administrators to track response times, identify bottlenecks, and ensure timely resolution. Additionally, the dashboard will support communication between administrators and officers, facilitating collaboration and information sharing to expedite the resolution process.

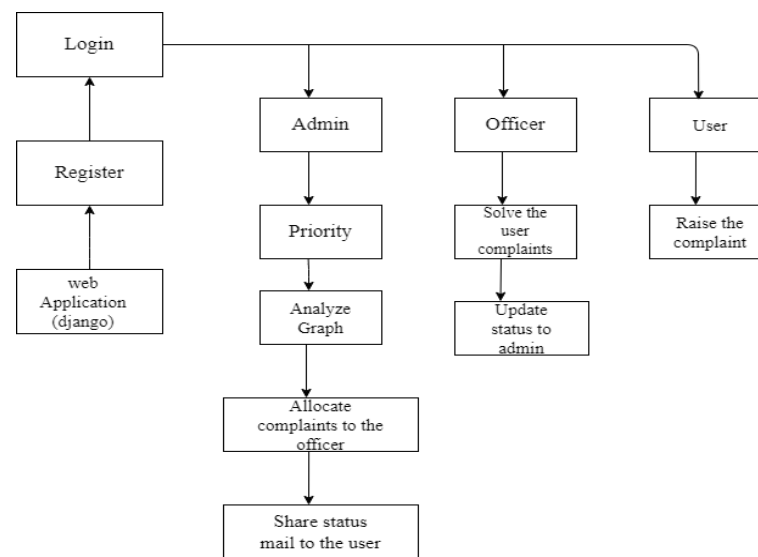


Figure 1: System Architecture of the proposed system

3.1 IMPLEMENTATION

Our project constituted of the below modules,

- AUTHENTICATION AND AUTHORIZATION MODULE
- ADMIN MODULE
- OFFICER MODULE
- PUBLIC MODULE
- STATISTICS MODULE

1.AUTHENTICATION AND AUTHORIZATION MODULE

Authentication: Authentication is the process of verifying the identity of users accessing the system. In this project, Django's built-in authentication system can be utilized, which includes features like login/logout functionality, password management, and user registration. Users, including administrators, officers, and the public, will be required to authenticate themselves before accessing the system's functionalities. Upon successful authentication, users will be granted access to their respective roles and permissions within the system. **Authorization:** Authorization controls what actions authenticated users are allowed to perform within the system. In this project, authorization will be implemented to ensure that each user role (admin, officer, public) has appropriate permissions to perform specific tasks.

2.ADMIN MODULE

In the "An Implementation of E-Complaints Analysis for Quick Response to Citizen Complaints," the admin module serves as the backbone for managing the entire complaint resolution process. Administrators are granted privileged access to a comprehensive dashboard where they can oversee all aspects of the system. This includes viewing all incoming complaints submitted by the public, categorizing them based on priority or department, and assigning them to the appropriate officer for resolution. The admin module provides tools for efficient complaint management, allowing administrators to track the progress of each complaint, monitor response times, and ensure timely resolution. Additionally, administrators have the authority to manage user accounts, including creating new accounts for officers, updating user permissions, and handling any administrative tasks related to the system configuration. The

admin module is essential for maintaining transparency, accountability, and effective communication within the system, ultimately facilitating the swift and satisfactory resolution of public grievances.

3.OFFICER MODULE

In the " An Implementation of E-Complaints Analysis for Quick Response to Citizen Complaints," the officer module empowers designated officers with the responsibility of addressing and resolving complaints efficiently. Officers have access to a specialized dashboard where they can view complaints assigned to them by administrators, categorized based on priority or department. The officer module facilitates effective complaint management by allowing officers to update the status of each complaint, indicating whether it is pending, in progress, or resolved. Additionally, officers can communicate with administrators regarding specific cases, providing updates or requesting assistance as needed. This module streamlines the resolution process, enabling officers to prioritize and address complaints promptly while maintaining transparency and accountability throughout the system.

4.PUBLIC MODULE

In the " An Implementation of E-Complaints Analysis for Quick Response to Citizen Complaints," the public module provides a user-friendly interface for citizens to submit complaints and track their resolution status. Through this module, members of the public can easily lodge complaints by filling out a form detailing the nature of their grievance and attaching any relevant documentation. Upon submission, users receive immediate confirmation via email, ensuring that their complaint has been successfully registered in the system. Furthermore, the public module allows users to track the progress of their complaints in real time, providing updates as the complaint moves through various stages of resolution, from submission to allocation and ultimately to resolution. This module enhances accessibility and transparency, empowering citizens to actively participate in the complaint resolution process and fostering greater trust and accountability between the government and its constituents.

5.STATISTICS MODULE

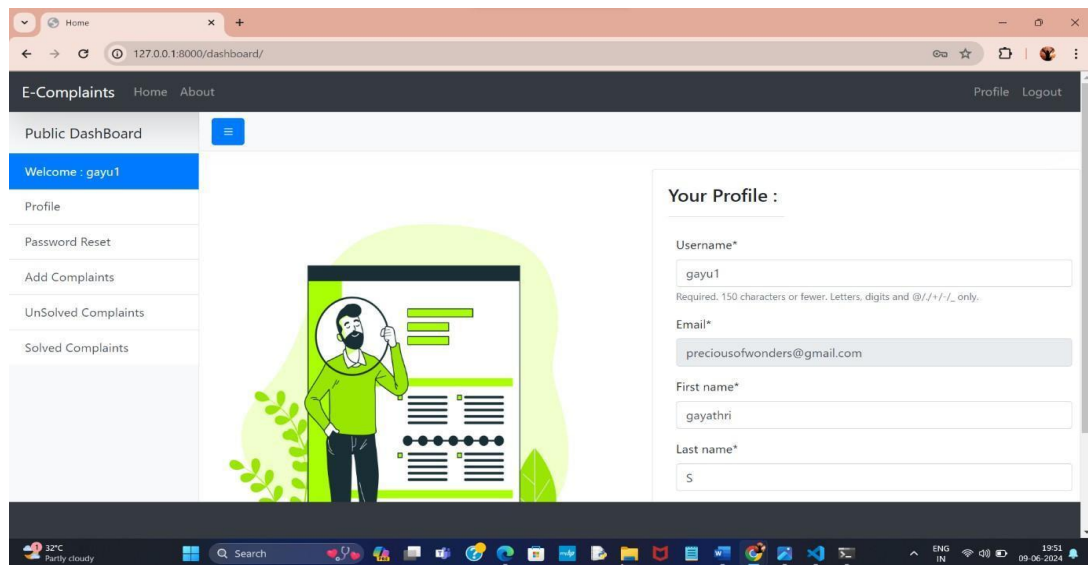
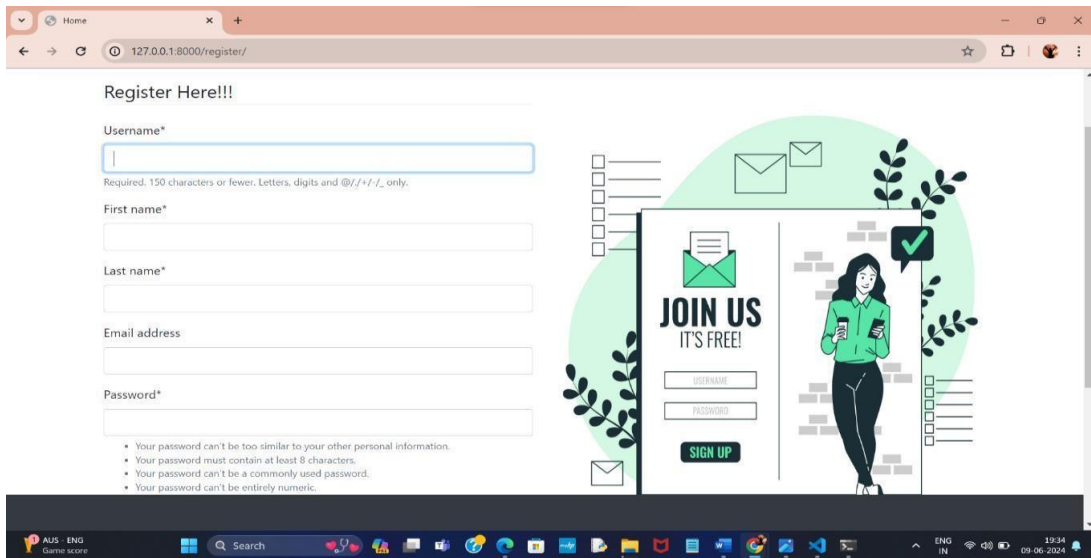
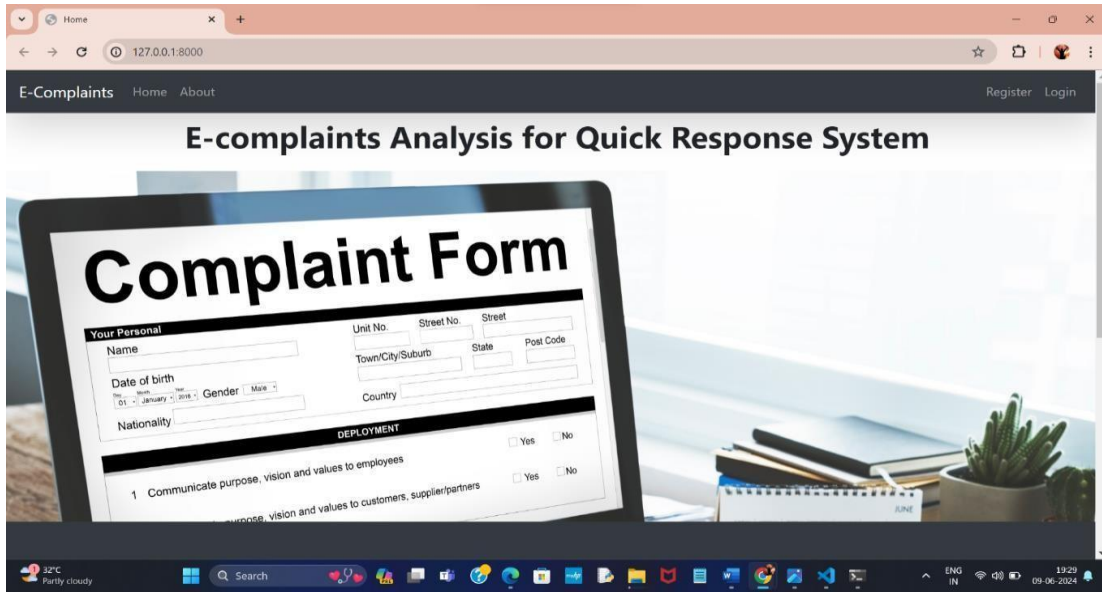
In the " An Implementation of E-Complaints Analysis for Quick Response to Citizen Complaints," the statistics module plays a pivotal role in providing valuable insights and analytics regarding the complaint resolution process. This module collects and analyzes data from various aspects of the system, including the number of complaints received, their distribution across different categories or departments, average resolution times, and officer performance metrics. By visualizing this data through interactive charts and graphs, administrators gain a comprehensive understanding of system performance, identify areas for improvement, and make data-driven decisions to optimize the complaint resolution process. The statistics module enhances transparency and accountability by providing stakeholders with clear, quantifiable metrics to assess the effectiveness and efficiency of the system, ultimately leading to more informed decision-making and improved service delivery to the public.

RESULTS AND DISCUSSION :

The purpose of testing is to discover errors and ensure that software systems meet their requirements and user expectations without failing in an unacceptable manner. Testing aims to uncover every conceivable fault or weakness in a work product, providing a means to check the functionality of components, sub-assemblies, assemblies, and finished products. Various types of tests address specific testing requirements, including unit testing, functional testing, acceptance testing, and integration testing. Unit testing focuses on validating internal program logic and ensuring that program inputs produce valid outputs, while functional testing systematically demonstrates that functions are available as specified by business and technical requirements. User acceptance testing (UAT) is critical for confirming that the system meets functional requirements, requiring significant end-user participation. Integration testing ensures that different software components or modules interact correctly and that the system as a whole meets functional and non-functional requirements. By combining these testing strategies, software testing provides comprehensive validation that each unique path of a business process performs accurately, identified inputs and outputs are handled correctly, and interfacing systems or procedures function as expected.

CONCLUSION :

In conclusion, the proposed implementation of E-Complaint analysis for quick responses to citizen complaints effectively addresses the specified requirements by providing a streamlined and transparent platform for managing public grievances. By enabling users to submit complaints easily and receive prompt acknowledgment, the system enhances accessibility and encourages citizen engagement. Through features such as administrative oversight, officer allocation, and real-time status updates, the system ensures accountability and fosters trust between government authorities and the public. Additionally, the implementation of authentication, authorization, and statistics modules enhances security, efficiency, and data-driven decision-making within the system. Overall, the project fulfills its objectives of improving complaint resolution processes, promoting transparency, and ultimately enhancing citizen satisfaction with government services.



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