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AI COMPLAINT-PRIORITY SYSTEM FOR LOCAL GOVERNMENT

Dr. B. Sivaranjani[1], Mr. B. Dharneesh[2], Mr. S. Dharaneesh[3], Mr. K. Dharshan[4], Mrs. K. Abirami[5]

Professor, Department of Computer Science, Dr. N.G.P arts and Science College, Coimbatore, India[1]

Students, Department of Computer Science, Dr. N.G.P Arts and Science College, Coimbatore, India[2,3,4]

Assistant Professor, Department of Computer Science, RVS College of Arts and Science, Coimbatore[5]

Abstract: The AI Complaint-Priority System for local government is a smart and easy-to-use platform where citizens can report problems like potholes, water issues, and noise complaints through a mobile app or website. Python is used to read and understand the complaints, while MySQL safely stores all user and complaint data.The AI automatically checks the urgency of each complaint by analyzing the words, location, and seriousness, then sends it to the correct department. A clean dashboard made with CSS shows real-time updates, reduces delays, avoids manual mistakes, and helps the government fix issues faster. It also identifies repeated problems in an area, improving planning and building trust with citizens.The system also provides automatic notifications to inform citizens about the status of their complaints. It keeps a complete history of complaints for future reference and analysis. Government officials can monitor complaint resolution progress through the dashboard. The platform supports data analytics and reports to help authorities understand common issues in different areas. This system improves transparency, accountability, and communication between citizens and local government authorities, making public service management more efficient.

Keywords: Artificial intelligence Complaint management System, Natural Language Processing Python, MySQL Database, Automated Complaint Prioritization.

I. INTRODUCTION

The AI Complaint-Priority System for local government is a smart and easy-to-use platform where citizens can report problems like potholes, water issues, and noise complaints through a mobile app or website. Python is used to read and understand the complaints, while MySQL safely stores all user and complaint data

The AI automatically checks the urgency of each complaint by analyzing the words, location, and seriousness, then sends it to the correct department. A clean dashboard made with CSS shows realtime updates, reduces delays, avoids manual mistakes, and helps the government fix issues faster.

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II. LITERATURE REVIEW

Many researchers have developed digital complaint management systems to improve communication between citizens and government authorities. Traditional complaint handling methods mainly rely on manual processes, which often cause delays, data loss, and lack of transparency in resolving public issues. With the advancement of technology, online platforms have been introduced where citizens can submit complaints through websites or mobile applications. These systems help store complaint information in centralized databases, making it easier for authorities to manage and track issues. However, many existing systems still require officials to manually review and prioritize complaints, which can slow down the response process.

Recent developments in Artificial Intelligence and Natural Language Processing have improved the efficiency of complaint management systems. These technologies allow systems to analyze complaint text, identify keywords, and

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determine the urgency of issues automatically. AI-based systems can also categorize complaints and send them directly to the appropriate departments for faster action. In addition, modern systems include dashboards and data analytics tools that help government officials monitor complaint status, track progress, and identify common problems in different locations. These features help authorities make better decisions and improve public service management. Therefore, integrating AI with digital complaint systems can significantly enhance efficiency, transparency, and accountability in government services. Recent research in smart city technologies has highlighted the importance of digital platforms for improving communication between citizens and government authorities. Many municipalities have started using online complaint systems to allow citizens to report local problems quickly and efficiently. These systems collect valuable data about public issues, which helps governments understand community needs better. However, traditional online systems mainly focus on storing complaints rather than analyzing them intelligently. With the advancement of Artificial Intelligence and machine learning, modern systems are capable of automatically processing and analyzing large volumes of complaint data. Natural Language Processing techniques enable the system to understand the meaning of text-based complaints and categorize them according to their type and urgency.

III. METHODOLOGY

The AI Complaint-Priority System for Local Government is designed to collect, analyze, and manage citizen complaints efficiently using modern technologies. The methodology of the system includes several stages that ensure proper complaint handling and prioritization. First, citizens submit their complaints through a mobile application or website. The complaint may include details such as the type of issue, location, description, and optional images. Once the complaint is submitted, the information is stored securely in a MySQL database, which maintains all user and complaint records. Next, the system uses Python-based AI processing to analyze the complaint text. Natural Language Processing techniques are used to identify keywords and understand the meaning of the complaint. Based on the words used, the system determines the severity and urgency level of the issue. After analyzing the complaint, the system automatically categorizes and prioritizes it. The complaint is then forwarded to the appropriate government department responsible for handling the issue, such as road maintenance, water supply, or public safety.

IV. EXPREMENTAL RESULT

The AI Complaint-Priority System for Local Government was tested using a set of sample complaints submitted through the web interface. The system successfully collected and stored complaint data in the MySQL database without data loss. The Python-based AI module analyzed the complaint text and correctly identified keywords related to issues such as potholes, water leakage, and noise disturbance.

The dashboard interface displayed real-time updates of complaint status, including pending, in-progress, and resolved complaints. Government officials were able to monitor complaints easily and update their status through the system. Citizens received automatic notifications about the progress of their complaints.

The experimental results showed that the system reduced manual work, improved response time, and ensured proper complaint prioritization. Overall, the system demonstrated effective performance in managing citizen complaints and supporting efficient decision-making for local government authorities.

Data preprocessing involved:

- Text tokenization
- Embedding generation
- Normalization of spatial coordinates
- Session segmentation

The model was trained using cross-entropy loss and optimized with Adam optimizer.

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Figure 1: Implementation of Query Interface in VS Code

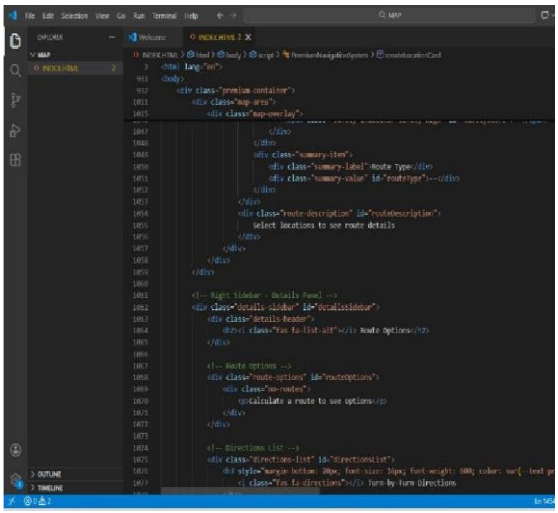


Figure 2: User Interface and Route Suggestion Output of the Proposed System

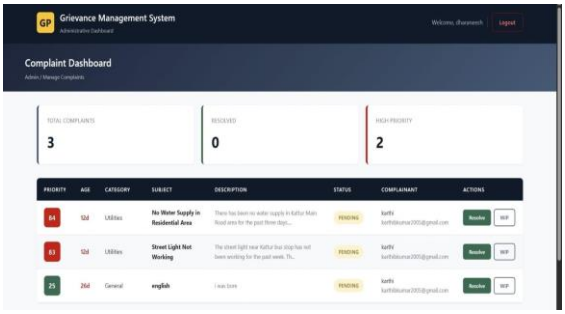
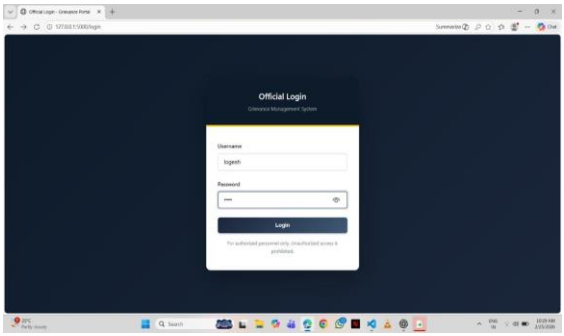


Figure 3: Login Interface and Output of the Proposed System



V. CONCLUSION

The AI Complaint-Priority System for Local Government provides an efficient and intelligent solution for managing citizen complaints. The system allows citizens to easily report issues such as potholes, water supply problems, and noise disturbances through a mobile application or website. By using Python for AI-based complaint analysis and MySQL for secure data storage, the platform ensures that complaints are processed and stored efficiently. The system automatically analyzes complaints, identifies their urgency, and forwards them to the appropriate government departments. The real-time dashboard helps officials monitor complaint status and track resolution progress. In addition, automatic notifications keep citizens informed about updates, improving transparency and trust.

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