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Smart City Complaint Management System Using Android Application

Pooja D C[1], Mrs.Veena B[2]

P.G. Student, Department of Master of Computer Applications ,University B. D. T College of Engineering, Davanagere, Karnataka, India.[1]

Assistant Professor, Department of Master of Computer Applications ,University B. D. T College of Engineering, Davanagere, Karnataka, India[2]

ABSTRACT: The domain is the foundation of this project (Web and android Application). Ordinary citizens who fall under the jurisdiction of the municipal corporation must file grievances about day-to-day problems in their ward. In India, there is no effective direct communication between the government and the general public for the purpose of solving problems. It is proposed that they use a web and android application to solve their problem by delivering their grievances to the government. It will allow a common man to report his complaints and problems to municipal authorities, as well as allow municipal authorities to address the issue in a timely manner. It serves as an interface for registering and following up on complaints, as well as providing a complaint module that allows users to take a picture of any problem they are having and upload the image, text information, and location along with the complaint. It also includes online discussion forums and feedback forms, which will help them communicate effectively with the government, and the public will be able to see how effectively the funds are used for development purposes.

KEYWORDS: web application, android, communication

I. INTRODUCTION

In India, the truth is that there is no effective direct communication between the government and the community for issue resolution, which means that if we have a problem, we must go to the authorities and wait months for it to be resolved when it could be done in a week. Governments must reconsider how technology can be used to improve citizens' end-to-end government service experiences. In policymaking and service delivery, this necessitates the development of a "citizen-first" culture and mindset. The ultimate goal is to boost public confidence in government and improve citizen outcomes by improving service quality, encouraging transparent and efficient interactions, and improving citizen outcomes. Social media and mobile technologies are displacing traditional methods of interacting with government, reporting issues, and providing feedback. People can get the services they need in a more convenient and tailored way by using mobile services such as apps and SMS. By including citizens in decision-making, problem-solving, and service co-design, these eparticipation tools promote increased citizen engagement. The National Informatics Centre previously developed a website called Prajavani to address this issue, where members of the public could submit petitions or concerns and have them resolved within a set time frame. [7] However, it was not widely used by citizens due to its inefficiency and lack of user friendliness, and it limited transparency, resulting in its lack of popularity. The main goal of this project is to help the public learn about their location and have their concerns addressed online instead of having to visit the officer on a regular basis until the situation is resolved. This system allows the general public to save time.

II. LITERATURE SURVEY

Gherwada et al. plan to develop an Android application with a mobile interface for filing complaints. The basic idea is to take advantage of existing online infrastructure to provide a simple, low-cost, and quick way to file a complaint. Under the proposed system, residents would be able to file complaints at any time and from any location. [1]

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Mhapsekar et al. present the design of a Voice Enabled Global Positioning System (GPS) based system for reporting traffic complaints on an Android platform. The complaint is made through the Short Message Service (SMS) of the Global System for Mobile Communications (GSM). GPS tracking improves the accuracy and competency of the complaint system by mapping the location where the complaint was filed. This will aid authorities in locating and resolving the issue as quickly as possible. Because the proposed system is voice-enabled and Android-based on the complainant side, it could be used as a platform for Indian road commuters to send complaints to the appropriate authorities in addition to the existing channels, allowing these issues to be addressed quickly. [2]

One of the leading causes of traffic accidents and vehicle wear and tear is the presence of potholes on the road. To address this problem, a variety of strategies have been implemented, ranging from manual reporting to authorities to the use of vibration-based sensors to 3D reconstruction using laser imagery. All of these approaches, however, have drawbacks, such as high setup costs, detection risk, and insufficient night vision. As a result, Aparna et al. conducted research to see if and how accurate thermal imaging can be used to detect potholes. After gathering sufficient data containing images of potholes in various conditions and weather, as well as applying augmentation techniques to the data, the convolutional neural networks approach of deep learning was used, which is a novel approach in this problem domain using thermal imaging. The self-built convolutional neural network and some of the pre-trained models were also compared. The results show that pictures were accurately recognised with the best accuracy of 97.08 percent using one of the pre-trained convolutional neural networks-based residual network models. The results of this study will aid in the direction of future research into this novel application of thermal imaging in the field of pothole detection. [3]

Kim et al. investigate and evaluate the pothole detection methods developed in this study, and they present a viable path for developing a pothole detection system that can correctly and efficiently identify potholes. [4] Kandhari et al. present the architecture of a GPS-based Complaint Redressal System. The complaint is filed using a smartphone application. The Global Positioning System (GPS) sensor found in smart mobile devices is used to pinpoint the exact location of the complaint. The complaint area is automatically recognised, and the information about the complaint is sent to a central server via the internet. The complaints are then plotted on a map in the online interface. [8]

In a road maintenance management context, Goh et al. describe the architecture of a GPS-based system for reporting thorough fare concerns via the Global System for Mobile Communications (GSM). Because GPS allows for the tracking and tracing of the three numbers that make up a GPS receiver's coordinates, namely longitude, latitude, and altitude, it can be used to improve accuracy and efficiency. By mapping the location of the roadway problem on a map, data such as location, date, and time will be optimised, allowing the proper authorities to quickly identify the problem and fix it. In addition to current channels, the proposed system would give a more simple and accessible means for road users to communicate complaints to the appropriate authorities, allowing these problems to be addressed quickly. [9]

Sousa et al. describe a case study at an automobile company that used a Six Sigma project to address a drop in customer satisfaction with complaint response time. The project's goal was to improve the process of analysing defective items by identifying the variables that influence the process and proposing changes to reduce the amount of time it takes to analyse defective items. The results are encouraging, and they may encourage managers in other businesses or services to use Six Sigma to improve their customer complaint handling procedures. [10]

According to Johnston et al., complaint management should result in customer satisfaction, but more importantly, operational and financial performance improvements. Many organisations, it is suggested, overlook the operational value of complaints, and as a result, many complaint systems appear to be more concerned with appeasing customers than with preventing recurrence of problems. Using data from an empirical benchmarking study based on a detailed questionnaire completed by customer service managers in 40 UK organisations, the relationships between seven key variables, complaint processes, satisfaction, retention, process improvement, employee attitude and retention, and financial performance, are calculated and a relationship model developed. The findings reveal significant connections between all variables in the model, prompting the creation of four complaint management acid tests. It is argued that, rather than focusing solely on pleasing customers, financial gains could be better realised by implementing organisational reforms and ensuring "staff-friendly" complaint processes. [5]

Chang et al. use the theories of reasoned action (TRA) and planned behaviour (TPB) to predict which factors influence customers' intentions to complain about service failures, whether online or offline. Methodology, design, and strategy – Quantitative data was collected using a survey questionnaire as an instrument. The impact of attitude, subjective norm, and perceived behavioural control on the intention to complain was studied using data from 300 potential customers. Participants were assigned to one of two groups: online medium or offline medium, at random. To test hypotheses, two stage structural equation modeling was used. Findings – It was discovered that both the TRA and the TPB accurately

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predict the intention to complain, however the TPB is more robust than the TRA in online media and weaker than the TRA in offline media. [6]

III .PROPOSED SYSTEM

People currently have to go to a government office to file a complaint under the current system. Another option is to call and inquire about the possibility of receiving an authorised response. Users can post problems, but they won't be able to see the details of the issues or access some other services. Such a system is not well-liked and is not user-friendly.
The application is simple to use and can be accessed for free by anyone. The project's main goal is to bridge the gap between citizens and government. The receipt of their complaint has been notified as a successful complaint submission. The goal is to eliminate all of the flaws in all existing applications and produce quick and accurate results.
With a little effort, the package we designed can handle the Complaints details without difficulty. Because the work was previously done manually, it will take a long time and a lot of effort to keep the files up to date. These files can be handled with less effort and in less time if the system is computerised. The chances of complaints being duplicated are slim to none. The Citizens Complaint Report can be started quickly and easily by gathering information from all relevant files. The package is designed with a graphical user interface (GUI) and is very user-friendly and simple to use.
Citizens do not have to go to the government office to get their issues resolved under the proposed system. He can solve his problems by posting them in this proposed system, and he can also suggest a possible solution to the problems that have been posted.

System Architecture Diagram

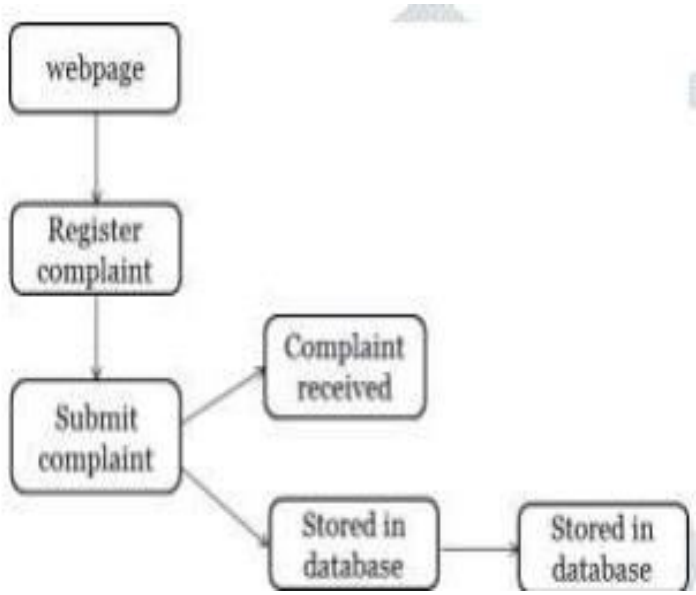

Figure: System Architecture Diagram

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Data Flow Diagram

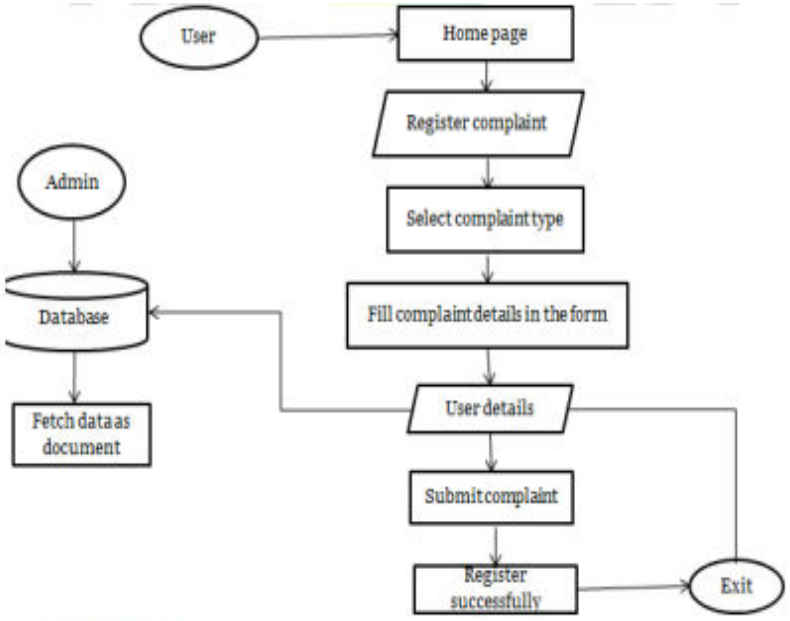

Figure :Data Flow Diagram

IV. CONCLUSION

The working procedure of the system, the roles involved in the system, and the activities and responsibilities of the users are all explained in this model. It gives an overview of the Municipal Corporation's complaint management system's analysis and development. The implementation of this project will yield a remarkable result, and it will also contribute to the development of complaint management systems of this type. Complaints and other forms of feedback, in general, play an important role in the development of any organisation and the improvement of customer interactions. This system can be seen as a precursor to the systems that will be developed further in the future and are related to complaint management. This application will provide citizens with a user-friendly interface to file a complaint about a problem they are having without having to go to a government agency. Citizens can also track the progress of their complaint through the app. This method not only helps citizens, but also government officials, track the location of an issue using GPS capabilities and resolve it as quickly as possible.

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