

Android Application for Complaint Management System

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ABSTRACT

By eradicating corruption and saving time, the Android application for complaint management offers a solution for the general public to solve concerns online. An app to handle and answer user inquiries is essentially a complaint management app. It can be used by businesses to answer consumer questions or by the government to answer questions from the general public. By using our program to pinpoint issue areas, quickly track complaint handling performance, and make adjustments, the complaints management system aims to make complaints easier to submit. Customer requests and complaints are recorded, addressed, and handled using complaints management software, which is also used to enable any other input. An app for complaint management is essentially one that handles and responds to customer inquiries. It can be used by businesses to answer consumer questions, or by the government to answer questions from the general public.

Keywords— android application, customer complaint, complaint management, queries of people, complaint handling.

I. INTRODUCTION

The purpose of this application is to respond to public inquiries. This application will be used by people to complain about their problems in their local areas. Problems like EB-related problems, garbage problems, water-related problems, etc. This will be taken to the municipal corporations, which will see the problem and resolve it.

This app will have two panels. The first one is a user panel, while the second is a government panel.

User panel: In this panel, the user or general public will voice their grievances about issues in their neighborhood. A login and signup screen will be

included. A dashboard will appear after that. In the dashboard, the users may view their complaints and the status of each. The user has the option to expand their complaints and use photographs to further describe their issues.

Admin panel: All of the complaints made by the public are visible to the admin on this panel, who will address them. A login and signup screen will also be included. A dashboard will thereafter be present. In the dashboard, the admin may view any issue that has been reported by users. Any problem may be selected by clicking on it, and then the problem can be fixed and its status changed to either work in progress or

complete so that the user who originally filed the complaint can see it.

Several departments will be designated for receiving complaints on this portal, and the administrator of each department will address the issue raised by the applicant. A higher authority will automatically be notified of the applicant's complaint if there is no response to it within a week. They will then address the issue and take appropriate action against the administrator for failing to address the applicant's complaints. The system will be able to display reports such as department-specific pending complaints, closed complaints, open complaints, and an administrator's performance report. The administrator will receive compensation for their efforts if their performance evaluation is outstanding.



population to save a substantial amount of time and money.

II. LITERATURE REVIEW

1) Using a chatbot to take complaints

A chatbot is computer software that interacts with people via voice chat, messaging apps, or chat windows. To manage CRM and customer service, many firms now employ chatbots. A chatbot can be used, for instance, to solve customer problems, provide news or promotions, and provide recommendations or advise. According to studies, over 50% of customers expect a business to remain open 24/7, and 65% of consumers prefer to use a messaging app to contact a business. A

chatbot is also the most effective technique to handle customer demands.

Rule-based chatbots and AI (artificial intelligence) chatbots are the two primary categories of chatbot. A rule-based chatbot is created to respond to queries in accordance with predefined rules. They may be created quite quickly, are simple to use, and are inexpensive. AI chatbots are intelligent chatbots that combine natural language processing and deep learning techniques (NLP) [3]. A chat bot's ability to comprehend human language and context is aided by NLP.

2) Using machine learning to classify information as compliant

In order to transmit a complaint to the appropriate department, the organization must automatically classify complaints due to the volume of complaints it receives.

Hence, time and labor savings are among the advantages.

One method for automatically categorizing documents into predetermined classes or categories based on their text is text classification.

Several algorithms, including rule-based and decision-tree algorithms, can be used. A system or computer may learn and develop depending on its experiences and knowledge by using a variety of machine learning techniques. Supervised learning and unsupervised learning are the two categories of machine-learning algorithms. Using the labeled training set, supervised learning teaches students to make predictions about the future. For instance, when a person delivers accurate information and a result, the computer will pick this up and use an algorithm to map the two.

The computer can therefore anticipate the outcome given any information. Support vector machines, naive Bayes, and gradient boosting are examples algorithms. Unsupervised learning, on the other hand, entails learning without the use of predefined classes or labeled data sets. As a result, the computer will do.

3) Description of the instance

Ray Kroc started the McDonald's Corporation in 1955, an organization that engages in the fast food sales industry (Mc Donald's.co.id, 2016). The official McDonald's websites state that there are more than 36,000 locations scattered throughout the world. One of the workers at McDonald's in Indonesia also said that the country of Indonesia has 200 restaurants spread out over its many areas, one of which is the McDonald's location at the Watu Gong branch in Malang.

4) Geographical Information Systems (GIS)

The goal of a geography information system (GIS), often known as "spatial data," is to collect, store, manage, and interpret geographic data. Geophysics, geo-technics, navigation, surveying, the Global Positioning System (GPS), remote sensing, and photogrammetry are just a few of the several technologies that make up this field. Spatial analysis will be used in this study to supply the business with more data to help it make a choice.

As illustrated below above that GIS has several components which is hardware, software, method, brain ware.

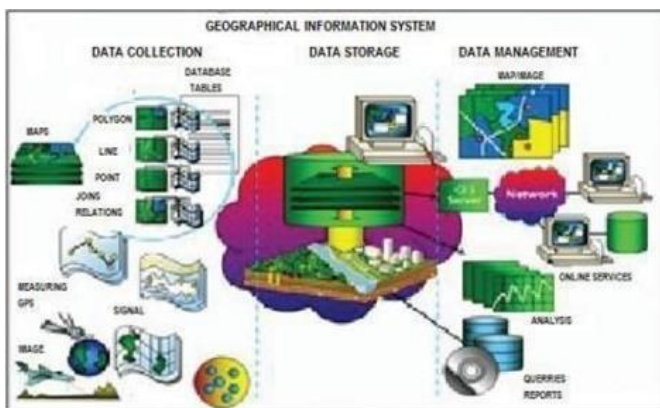


Fig.2.1 GIS Components [10].

5) Web-GIS

A web browser may access the GIS program known as Web-GIS. In order to acquire data, display it using a driven database, and build and manage client connections one at a time, Web-GIS employs the

internet network as a communication medium. CRM with analytical capabilities is crucial for analyzing consumer behaviour. Operational CRM is where the data used by analytical CRM originate This technique was created with the intention of helping the Malang McDonald's outlet at Watu Gong branch learn about complaints early and handle them faster. It was referred to as a recovery in this instance. The system's objectives can benefit the Watu Gong Branch of McDonald's, where Malang receives zero complaints.

III. EXISTING SYSTEM

Customers of the company must visit the company anytime they have concerns about the company's products, according to the current complaint management system. Time is wasted in this manner. Every time a bank customer needs assistance from the bank, he or she must visit the bank and then present their complaint to the designated officer.

The issue is documented on paper and will be presented to the bank. The manager will then take care of it and deal with the customer's complaints.

The management will next make inquiries and assign the issue to the designated individual in that department. The individual will seek information on the issue before resolving it.

Disadvantage:

- It's not easier for less knowledgeable people.
- The process of applying our queries is difficult.

IV. PROPOSED SYSTEM

Anyone can submit their inquiries using our suggested approach in just a few minutes. The user-friendly and intuitive Android interface makes it simple for individuals to grasp.

The goal of the complaints management system is to make it simpler for complainants to apply their issues by utilizing our application to pinpoint and identify problem areas, monitor complaint handling performance more quickly, and make changes.

The complaints will be followed through to closure after being assigned to various people. It will be possible for the person managing the complaint to get in touch with the client via system feedback.

Advantage:

- Less time to apply is a problem.
- It is user-friendly if the user interface is clear.
- The suggested system has full automation.
- Moreover, this offers client data security.

For mobile devices, the Android software stack consists of an operating system, middleware, and important apps. The tools and frameworks required to start creating applications that run on Android-powered devices are provided by the Android studio. The different books and developer aid and learning websites, which are widely available, made it easier to master the fundamentals of developing Android applications. An extremely straightforward Android development environment is offered via the Android studio. Throughout the past three months, the whole planning and development process has been a learning experience. It has improved our awareness of the many procedures involved in developing software-proposed systems as well as our programming skills.

V. FEATURES OF THE COMPLAINT MANAGEMENT APP

- There are two panels in the app.
- The first panel is the user panel, and the second panel is the government panel.
- Log in and sign up for both panels.
- Users can add new complaints.
- Users can add images of complaints.
- Users can see all of their complaints and their status.
- The government can see all the complaints posted by people.
- Category-wise complaints
- The government can open any complaint to resolve it.

POSITIVE ASPECTS OF PEOPLE’S CORNER:

Online resource for residents is included in the Android-based People's Corner application for mobile phones.

The concerns are subsequently forwarded to the appropriate wards, where they are later addressed by the administrators in charge of handling complaints. This saves citizens money and time waiting to file complaints by automating the process. The user's restrictions imposed by the present complaint handling systems are removed by People's Corner.

- a) **Capacity:** A number of people may efficiently file complaints and review them.
- b) **Effectiveness:** As mobile phones with Android-enabled platforms are very affordable on the market, they may be quite effective for the average person
- c) **Availability:** Since mobile phones are so portable, there is no problem with availability. Nearly the whole country of India now has access to cellular networks.
- d) **Security:** When citizens submit their information, it is highly restricted and only authorized staff are able to read it.

VI. ANALYSIS AND DESIGN

A statement of discontent with a good or service by a consumer is known as a complaint. A responsible person may receive the complaint verbally or in writing. Customer satisfaction levels may be impacted by how complaints are handled, thus many organizations often have a procedure in place to address complaints in an effort to increase customer satisfaction.

The user of the mobile application makes a complaint or reports an issue. The complaint was then submitted to be processed in the cloud and the data was stored in a database. The web application collects all classified complaints from the database on the employee side, allowing the system administrator to view all open complaints through the dashboard. Also, the

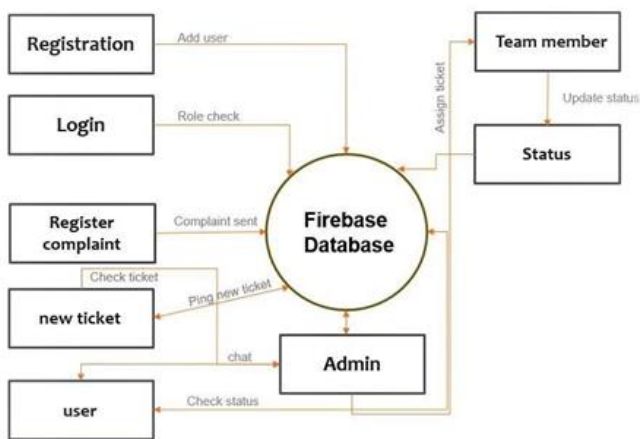
accountable party might update the complaint status, make notes on the method of rectification, and then send it back to the complainant.

MODULES:

- Admin Module
- Customer Module
- Firebase setup & design
- System Interface Module

In order to address complaints and solve issues, organizations employ the complaint management procedure. The following are the methods for resolving complaints:

Architecture diagram for complaint management process:



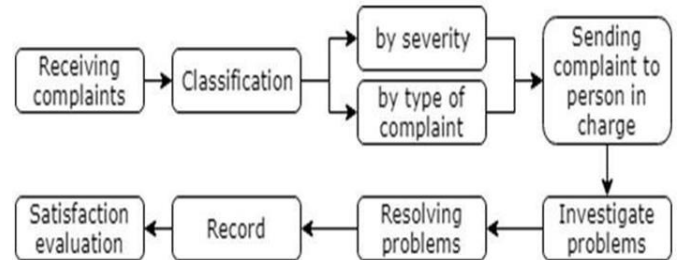
VII. METHODOLOGY

Moreover, the populace will have a smartphone application. After the user registers with the application, the user can file a complaint specific to the ward where the user discovers a problem. People who file complaints may attach a picture. There is a user-friendly UI interface offered by this program. The smartphone app has a GPS tracking system as well. Control moves to the admin homepage when administrators check in to the website. The administrator. There are many parts on the main page. Administrators can view residents of their wards on

this page. Administrators view user-submitted complaints and inquiries.

Admin can address grievances and provide answers to those issues. In addition, users can provide responses to inquiries. The number of open and closed complaints is visible to the administrator.

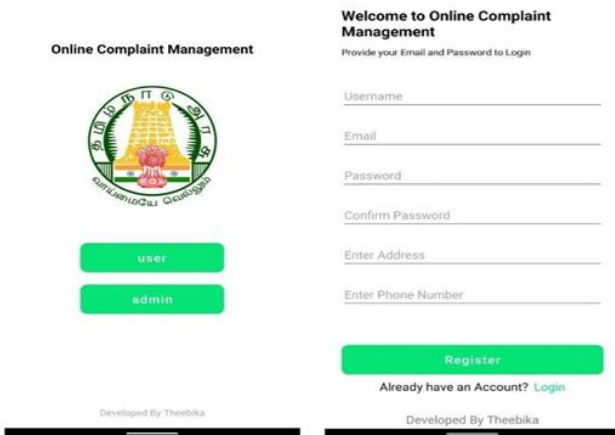
Admins can resolve complaints by seeing the complaint's status. The status changes from pending to solved after the complaint has been resolved.



If you'd like, log out of the program once they've done their task. Control switches to the admin home page once the administrator logs into the program. There are several areas on the admin home page. Administrators can view all users and administrators registered in that municipality on this page. The administrator can also see the user-posted complaints on the administrator. Administrators reacted in response after observing these complaints. Once authentication is complete, the administrator logs out of this program.

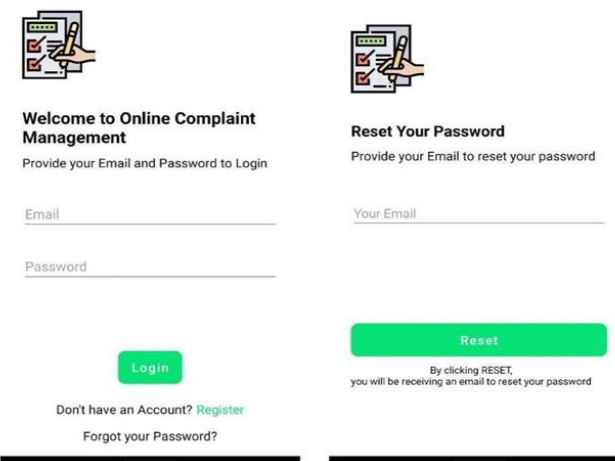
VIII. IMPLEMENTATION

The applications will look like this. This section shows the interface design of mobile application for complainants of the organization.



From this first image is a home page and second image is a registration page.

On their smartphone, the user installs an application. The welcome screen appears when the user launches the app on their phone. The technology enables the user to submit a complaint in just 160 characters using a mobile application to receive a welcome screen. The system only enables the user 160 characters to write their complaint. Departments or wards are contacted regarding the complaint. The NL-based complaint processing system uses natural language processing (NLP) techniques to decipher the user's complaint and determine the complaint's nature (the department and the complaint type) as well as other details (location, landmark, and ward number), which are required to file a complaint.



From this first image is a login page and second image is a reset our password page.

The very first interface seen is the login page. This login page's goal is to collect user authentication,

which has an impact on accessibility. Only two separate users at a time may log in to this system. Manager and admin are those.

The first page you view after logging in and authenticating is the system's "Starting" page. General details about complaints in a certain category. To access and learn more about system features, use the navigation menus on the system's left side.

The process of changing a password involves erasing the old one from an application, service, or device account and then establishing a new one. Resetting a password can be done either through the program or service's settings or by calling customer care.



The user can raise concerns and inquiries on this page. The user may file a complaint about a member to the admin if the issue is not resolved promptly or the administrator does not reply appropriately.

The user may also view answers to their posted issues and questions.

The user then logs out of the website. Control switches to the admin home page when administrators check in to the website. The administrator. There are many parts on the main page. The user in the admin's ward may be seen on this page.

When users create a new complaint, floor layouts assist users to identify the location. Users can choose a location from floor plans as a result, and the name of the area will automatically appear in the complaint form.

Once users enter their information, the program will automatically search for complaints that are comparable. When the complaint is finished, in process, or a failure, check the status. Afterward, we provide feedback on their job or make use of feedback for any grievances that need to be voiced to get in touch with them.

IX. FUTURE WORK

With our suggested method, the user can take a picture of the specific action, such as a water leak, hanging electricity lines, a tree, antisocial conduct, etc. The location where the photo is shot will be improved by the program. The aforementioned enhanced image is forwarded to the appropriate authorities. If there were significantly more complaints in a certain location, the priority of the issue would rise. It is kept track of statistical data, including the number of complaints received by the ward, the number of them resolved, and a graph to show. Also, the public may view the images on a discussion forum and leave comments on them. On a whole, we are exceptionally pleased with the level of implementation we were able to achieve over the last few months. This entire proposed system, application, and our learning and understanding of Android have exponentially grown over the last few months. However, our mission of providing an on-the-go complaint lodging tool cannot end here.

We are quite happy with the overall degree of implementation we were able to accomplish over the past few months. Throughout the last few months, we have learned and understood a lot more about Android and the proposed system as a whole. Yet, this is not the end of our effort to offer a mobile solution for filing complaints.

X. CONCLUSION

Our goal was to create an application that let residents make better use of the municipal corporation's services in a specific region even before we settled on our platform. Due to its popularity and widespread use among consumers, the Android smartphone platform looked to be the obvious choice.

The purpose of CMS was to improve the existing complaint management system through the use of a mobile application. As a result, CMS was able to offer many methods for submitting complaints, making it easier for consumers to do so. Moreover, CMS offers a method for following the status of complaints via a mobile application. Also, CMS was able to categorize the complaint and send it straight to the department that was in charge of handling it. As a result, the system was able to cut down on both labor costs and the amount of time it took to complete the task. Also, by recommending people file a comparable complaint, CMS might reduce the number of repeat complaints. Additionally, CMS enables the employees to manage the complaint automatically using the Android application rather than manually via paper form. Finally, the system generates the data visualization for the summary of complaint data.

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