A Model for Complaint Redressal System using Android Architecture

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Abstract: An Effective and Efficient response to the complaints is an essential index of
organization’s performance. The presented model for the Complaint Redressal System will have
the ability to minimize people’s dissatisfaction and on the other hand it can encourage people to
participate in controlling the quality of the service provided. In the digital world it is very important to
manage problem through Digital Way that is through the Mobile app and Website. And the CRS will
accomplish this goal by implementing the complaint redressal service through mobile app, CRS will
also help in development of the city or country in which it is used depending upon the way in which
it is implemented and used, the user interface and design was the system is kept simple in order to
make it efficient for everyone using it.

Keywords: Complaint Management, Digital Way, Android development, API (Application
Programming Interface).

I. INTRODUCTION

1. Problem Definition:

In today’s modern world everyone is busy with their own task and responsibilities, each and
every individual is busy in completing his/her duty but sometimes due to inadequate service
the common people has to go through many difficulties which may become an obstacle in
completing their task on time. And in today’s world there is no such service through which the
common people can share their problem and can get solution for it. Every day Citizens
complaint to staff of the service department because of feeling dissatisfied.\textsuperscript{[2]} In today’s fast moving world nobody has the time to visit a Government office or so to report their issues. So there should be a System through which the people can register their complaint and it can be solved accordingly. CRS is one of the systems which allows the people to register their problem through the mobile app or website and can get it solved as soon as Possible.

2. Scope of the project:

Complaint Redressal system is the system which is used to efficiently manage the complaints which help in better management and solution of the problems faced by the people. In the digital world it is very important to manage problem through Digital Way that is through the Mobile app and Website. CRS will have the mobile App and Website through which user can register their complaint and can also check the current status of the Complaint registered by them. At first this system will be implemented for particular area but then after successful implementation for that particular area it can be extended for a whole state or county and the advantage of this system can made available for more and more people of the country.it will not make people feel important but also it will keep the higher authority under check, so CRS will help in overall development. Also to facilitate people with problems and then perform a good complaint management so that complainers end up satisfied.\textsuperscript{[5]}

II. REVIEW OF LITERATURE

After having searched for various similar systems for complaint management the outcome was that there are many complaint management systems for corporate companies but there are not for the civic or common public issues so our system can efficiently work in the environment with no particular competitor. The research part includes systems like Railways (CRIS) Management system, zoho support, fresh desk, mycustomer feedback .etc.

1. Previous Work

In \textsuperscript{[2]} The researcher found out that the most appropriate to the research topic handling customer complaint using Android Architecture was: Najar et al. (2010) tried to improve relation between Citizens and Government by presenting a new model based on Service Oriented Architecture (SOA).\textsuperscript{[2]} With this there are to advantage first it will involve user in decision making and other it will help the authority in reducing the people problems and dissatisfaction.

2. CRS

Complaint Redressal System will have the ability to minimize people’s dissatisfaction and on the other hand it can encourage people to participate in controlling the quality of the service provided. CRS will allow the user to register their complaint and they will receive the response depending upon the status of the Complaint Registered. Also it will weight the complaints i.e., weak complaints or strong complaints and take respective measures in order to prioritize handling of complaint.\textsuperscript{[2]}

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3. E-Complaint

Each organization has its own definition for complaint. They define complaint related to the services they provide for users. The value of complaints, both as a communication device and as a means of giving them a chance to turn a dissatisfied customer into a satisfied and loyal customer.[4] Customer complaining behavior can be defined as the consequences of customer dissatisfaction. On the other hand, customer satisfaction is not an absolute scenario, but very much depends on interactions, feedback, praise, and complaints.[3] Complaint Redressal System is a system that we accept the user complaint and it will make sure that the user complaint are properly solved and managed by the appropriate department to which complaint belongs.

4. Android Architecture

Android operating system contains software components that can be divided into five sections and four main layers as shown above in the fig 1.

![Android Architecture](image)

Fig 1. Android Architecture

a) Linux Kernel:

The Linux layer provides different level of abstraction between the device hardware and it contains different types of drivers like keyboard, cameras, display etc. Also, the kernel handles all the things that Linux is really good at such as networking and array of device drivers, which will remove the trouble to interact with the devices. The Linux kernel API, is meant to be very stable and to not break userspace programs (some programs, such as those with GUIs which rely on other APIs as well). [1]
b) Libraries:
The layer above Linux kernel there is a set of libraries that includes open-source Web browser engine Webkit, well known library libc, etc. SQLite database is useful for storage and sharing of application data, libraries to play and record sound and video and for SSL libraries responsible for Internet security etc.

c) Android Libraries:
This section contains Java-based libraries that are specific to Android development. Examples of libraries in this category contains the application framework libraries with user interface building, graphics drawing and database access.¹

III. PROPOSED MODEL STRUCTURE

1. System Analysis
The CRS system will allow the user to register it complaint and user can get the solution and the status of complaint easily, the CRS system will have two different modules that is the website and an Android App it will use various libraries and API for implementing the Android app so that the working of the application will be smooth and the same database will be used to store the data as to maintain the uniformity of the system. User can use both the system with one single login id as the database will be the same, user can create the account using the app and then at next time user may use the website to check it complaints and also to register a new complaints, the user will be able to check the complaint of the status as soon as it is accepted, the other module of the system will allow the user to generate the poll which can be voted by the other user of the same area this voting process will take place depending upon the area of the user the user will be notified as soon as the result of the poll is declared.

2. System Design
This model was designed to efficiently manage the user complaint and then forwarding it to the appropriate department for which it is intended. The application works as an intermediate between the other complaint handling systems and the user who face the problem the system will help in solving of problem in systematic manner Fig 2.
3. Implementation Design

After explaining the working flow process and the proposed model, the next step is the implementation of the system as follows:
a) Use Case Diagram

![Use Case Diagram](image)

**Fig 4. USE CASE DIAGRAM**

It displays the Use case diagram of the CRS system it displays the current system flow and it will display the relationship amongst the modules as it is displayed user will first have to login or register to the system in order to access the modules provided by the system the diagram clearly displays the relationship and flow among the modules.

b) Sequence Diagram

![Sequence Diagram](image)

**Fig 5. Sequence Diagram**

The two sequence diagrams in Fig 5 are based on the complaint registration and voting a complaint of the CRS system. In both the diagrams it is assumed that the user is logged in. In the first diagrams the user is entering the complaint details and clicking on submit. These details are then validated and are sent to the
database. After being sent to the database the user receives a message that he has successfully registered the complaint. In the second diagram the user is selecting a complaint and voting for it. After giving votes, the user clicks on submit and the details are sent to the database. After the details are sent, the user receives a confirmation that he has successfully given votes to the complaints.

c) Security

Since CRS will be handling the sensitive data about the user and user complaint there will be enhanced security feature in the CRS which will help to protect data in terms of any malicious attack on the system. Different Hashing algorithms like Bcrypt or MD5 will be used in order to protect data from external threats. Moreover to this as CRS will implement android the default android architecture also provides some amount of security in order to maintain the integrity of the system and keep the system in stable state.

d) UI Design

Fig 6, 7 and 8 displays Login, Signup and Homepage respectively which will allow the user to login to the system or new user will be allowed to sign up for using the system and the Home page will display all the present feature of the Application.
Fig 9, 10 displays the complaint register feature of the application where user will be able to register their complaint against an issue or a person respectively. Fig 11 display the screen which will display the existing user complaints.

Fig 12 and 13 displays layout of the polling system inside the app which will allow the user to check and vote for current ongoing polls and it will also allow user to see the result of the poll which are recently completed.
IV. CONCLUSION

CRS will provide the efficient way to solve the problems people face in day to day life. Since it is first developed on android platform it will be available for the large amount of audience who are using Android platform moreover to it the simpler design of the app will facilitate every people to easily use the system and it will encourage people to register their problem through the medium they are already connected. This will allow more and more people to stay connected o the System due to which the goal of CRS will be Achieved.

REFERENCES