

## FORUM FOR CITIZEN GRIEVANCE

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**Abstract:** In today's world, the technology has improved a lot and using smart phones becomes a mandatory one. Even though, Government implement many ideas to communicate with people but, still a little bit a communication gap between people and government. We are developing an application named CityGriev to reduce the communication gap and it provides efficient interaction between them. This application is like a forum for the peoples to send their queries and suggestions to the government and also transparent and make the people to connect with themselves and the government.

It is an application in which every citizen can directly participate in the governance by providing a medium for channelizing their ideas, comments and suggestions to Ministries and associated organizations in the particular state and find a solution for every problem.

Here, the people can register their complaints or grievances they have in their places. The complaints can only be made by the registered member with verified **Aadhaar card**. The complaints can be registered and categorized with respect to their places (Like Streets vice or District vice).The complaints regarding street vice, when raised a notification will be sent to the people in that particular area. Based on the up-votes to the complaint will be displayed on the top of the list. The complaints on the top of the list will be rectified based on the **up-votes and down-votes** criteria. The complaints are categorized using the complaint subject and description and direct it to appropriate officials. This categorization of complaints by using in **Text Processing** and **Deep Neural Network** in python. For the people convenience rather than selecting which officials for their complaints. Most of them do not have an idea about that. The complaints which aren't rectified within the due date will be reported to the higher officials. Then the higher official will take action on the person who did not respond to the complaint.

With this forum the complaints or feedbacks can be registered with ease. It is not only to register grievance, but also to take a step further and provide valuable suggestion and compliments which further inspires the service operator.

**Key words:** Aadhaar card, up votes, down votes, text processing and deep neural network.

**1. Introduction:** The main purpose of this project is to help the public in knowing their place details and getting their problems solved in online without going to the office regularly until the problem is solved. It is to provide a smart and easy way through Android Application for complaint registration and its tracking and eradicating bribing system and thus to prevent corruption. This application builds an efficient communication between the common people and government. The communication includes complaints regarding problem (like water scarcity, drainage problem, road condition problems, Transport, Education facilities etc.) faced by the people in their respective areas.

**1.1. Overview:** This research paper presents the architecture of a Forum for Citizen Grievance (FCG). The complaint is registered via a mobile application. Aadhaar card is used to determine the exact location of the complaint which uses QR code scanner. The area of the complaint is automatically extracted from the details in the QR code, and the complaint information is sent over the internet to a central server. Then, it will be categorized using text processing and Deep Neural Network and send to other peoples in that area for voting process. Afterwards, the complaints are prioritized according to the number of votes and the officials take care of it based on the votes.

**1.2. Objective:** To make the complaint registration process easier for the people. To help the people to track the status of their complaints. To help to solve the difficulties involved in registering the complaints. To reduce the communication gap between people and government. To reduce the time spend by the people in registering their complaints. It makes the government officials process easier in organizing the complaints according to their areas.

**2. Existing System:**

**GPS BASED COMPLAINT REDRESSAL SYSTEM**

Citizen of any country face civic problems in their day to day lives. They uses one of the several ways provided by the government to file their complaints. With advancements in technology, the complaint registration systems have evolved in different ways to simplify the task of registering as well as addressing the complaints have become more advanced. This research paper presents the architecture of a GPS based Complaint Redressal System (GPSCRS).

**Natural processing language mobile interface to register citizen complaints**

The main advantage for this approach is to categories complaints using Natural Language Processing(NLP) The essential idea is to make use of the existing web portal infrastructure and provide an easy, cheap and quick (complain as you see) mode of complaint registration around the clock. The proposed system enables and assists citizens to lodge compliant and seek redressal through their mobile phone in natural language.

**Disadvantages:**

- Fake problems can be entered and there is no possibility to verify before solving the problem.
- Users can post their problems but cannot get the details regarding progress of their complaint.
- A citizen can't give a suggestion for solving the problem in a better way.
- Categorizing the complaints according to the areas and the nature of the complaint is difficult.

**3. Proposed System:**

Hereafter there will be no need of standing in a line for complaining about a problem because this application is used to solve the problem in your living area by registering the complaint. The complaint can be registered after signing in the application using Aadhar card. After signing in and registering the complaint. It will be categorized by Deep Neural Network and notified to every registered user. The users start to vote the complaint, if they are also experience the same problem. The complaint will be prioritize by voting and send to the official after the reach of a fixed point of count. The official will solve the problem after analyzing the seriousness of the problem and find the

solution. The status of the complaint will be transparent to the people. This application is used to solve the problem at ease and quick without any vexation.

For this we are using Firebase as a backend, we can store the data in a real time manner. It is the latest platform which has effective tools to develop Mobile application. It provides Authentication, Notifications, Real time and cloud based database. Android Studio is used as a Front end Code and iterate faster than other tools. Complaints are categorized by using Text Processing (using Natural Language Processing) and Deep Neural Network.

**4. System Architecture:**

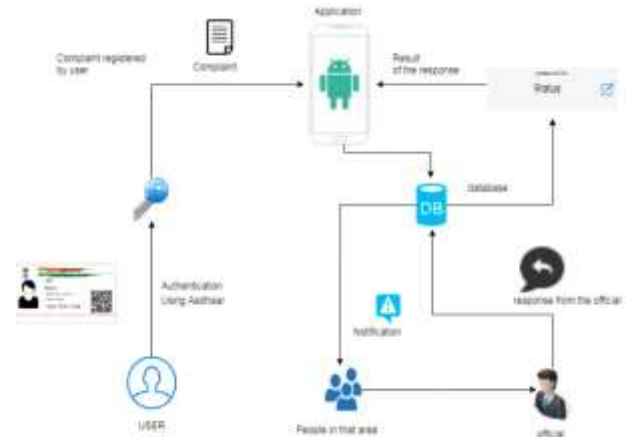


FIGURE 4.1 – FCG Architecture diagram

The above diagram clearly explains that the people can easily register their complaint by using this application. For that, the area people have to register their profile using Aadhaar card. Then start to register the complaint by mentioning the name, complaint description, uploading the picture of the affected area. The address details are taken from Aadhaar card. The informations were categorized and stored in the database, from which the notification message will be delivered to the registered people in the corresponding area. The people will show their interest by upvote or downvote the complaint. After a certain count of votes the message will be delivered to the higher official of that area. The higher official will response to the complaint. The response measures also displayed in the application status from which the steps taken for the corresponding complaint will be visible to all.

**4.1. Module description:** For implementation the entire system has been divided into the following modules:

- Complaint Registration
- Categorization of complaint
- Voting process

**4.1.1. Complaint Registration:** The problems that are faced by the people in their surroundings were registered as complaint to the corresponding higher official by using this application. To register the complaint the user first have to sign in, in this application using the Aadhaar card and personal information and the complaint is registered. The complaint given by a person in the area consist of the type of the complaint (whether it is based on the water, electricity or road etc.). Then the picture of the affected area is to be uploaded to make them visible how serious issue they are facing. At last the person may add up some suggestions for taking steps and the complaint is registered. These complaints were submitted by the user after filling all the requirements. It is in the way that the higher official may easily understand the people request. People usually stand in a line for more number of hours just to deliver a request letter or to complaint about a problem they are facing in their surroundings, to avoid people standing in the queue in front of the collector's office or other higher official for longer time to register a complaint this application is used. These complaints were registered in the database.

**4.1.2. Categorization of Complaint:** The complaints were registered in the database which can be categorized by the admin using Text Processing (using Natural Language Processing) and Deep Neural Network and the complaints were sent to all the registered users in that area as notification from which they prioritize it by voting. In this categorization process the Text processing is used to extract the information in the complaint and then it will be categorized based on the area (using Aadhaar card) and information extracted from the text processing. Then, it will send to the particular official. The notification is send to all the users.

**4.1.3. Voting Process:** After categorizing the complaint and arranging it in the corresponding department, the notification will be sent to all the registered users. Then the voting process is performed in the application by the users to prioritize the serious problems. Voting process helps to avoid unwanted and fake complaints. If people are not interested in the complaint registered by some user they just simply ignore it. Otherwise, if any serious problem are addressed then they will up vote for the complaint. If the voting of the specific problem reaches than the fixed point of voting count then the complaint will

be forwarded to the higher official of the corresponding area. The higher official will get the complaint as a notification from which the problem get noticed to the official.

**5. Conclusion:** This application is performed byusing the Aadhaar card registration and the complaints are forwarded to the higher officials for finding the solution. At first these complaints are registered in the database and categorized by using the Natural Language Processing and Deep Neural Network algorithm based on the data present in the complaint. Then the complaint will be transferred to the registered users as notification from which they can cast their vote. When the voting reaches to a specific count it will be sent to higher official to find the solution. The higher official will take necessary steps for the requested problem and the status of the solution performed is transparent to the users. People can easily track the solution and the steps taken by the officials. This application is very useful to the people to make the complaint registration process easier. It is very helpful to solve the difficulties involved in registering the complaints and will reduce the communication gap between people and government. By using this application the time spend by the people in registering their complaints is reduced. It makes the government officials process easier in organizing the complaints according to their areas.

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