Mobile Application for Grievance Registration

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Abstract-Complaint registrations for government bodies that is EB, PWD, etc. are offline, which are on SMS based system. Even reporting some of the difficulties to Government departments have ended up in the manual letter writing at specific timing. But a mechanism to accept complaints from citizens is not 24 × 7. Now a day's number of people using mobile phones is increasing, it has become a need for users to provide on their mobiles, all facilities one is been utilizing on the internet. The proposed system enables and assists citizens to lodge compliant and seek redressed through their mobile phone. It is based on android UI interface system and it emulates the functionality of the web portal based complaint filing system. This application allows the user to complaint against different departments. Registering a complaint about a civic issue is now just an 'app' away. With smart phones becoming increasingly popular, citizens can now download applications to make their complaints to any Municipal Corporation and they can attach a image as a proof, in case of complaining about a instance on that time period itself will helps the user as to capture image from their application itself and allow to complaint.

Keywords-Android UI, Smart phone, complain Registration, GPS, Social complains etc.

1. INTRODUCTION

Giving access to all citizens of country to register complaint is the motto of application so that they can not only make a complaint on several issues on the application; they can also upload photographs of the civic problem. The application needs only two megabytes of memory space and is "very user friendly," The complaints will have to be resolved within time mentioned in the citizen's charter. If this does not happen, after the specific time complaint will be escalated to higher levels. After the resolving complaint officials will not only have to notify that the complaint was resolved, but also upload photographs of the resolved issue on the application. After that citizens can also state their reaction by giving comment on web portal is they satisfied or not with resolved complaint. Application is presently available only on Android devices. The platform was chosen as a large majority of smart phone users in the city have Android devices.

2. RELATED WORK

There are existing systems like Brihan Mumbai Municipal Corporation Application which is only used for Municipality officers. But that application fails because of restricted use of officers.

Even the "Meri Sadak" app made by PM Narendra Modi not responded very well because it only shelters the road built by BJP Government. Drawbacks of these systems are they are only designed to filed complain for single civic problems. Like "Meri sadak" app is only designed to complain about potholes, Garbage collection or Traffic management. Users can post their problems but cannot get the details regarding progress of their complaint. This system doesn't gain that much popularity and system's GUI is not user friendly.

3. MOTIVATION

Motivation behind to design this application is to save the time to go in Municipality office to register any type of complain. User can filed complain within minute with their android phone, they did not have to go different offices. They can register various complaints in one shelter with user friendly application.

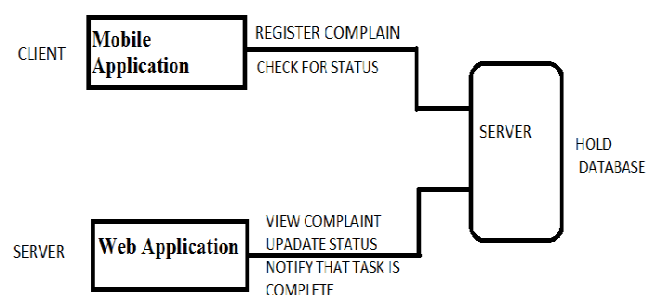### 3.1 Proposed System Architecture

Fig 1: Architecture of Proposed system

Basically system consist three different modules, which are given below:

1. Client (user)

2. Server (Admin)

3. Employee

1. Client (User): Client is the primary user of GUI. Client will upload the photo on application through his android phone with comment. But for that first he has to register himself on application. Then he can see the status of complaint. He will get notification or message through admin once complaint is resolved.

2. Server (Admin): Head of the system is Administrator. He is allowed to validate user, update the status of registered complaint, assign task to worker and close the complaint. He can also delete the request and user. He can add the categories of complaint and worker. He notifies worker and user.

3. Employee: When admin notifies worker about complaint, employees are the one who actually takes care of problem. When problem is solved he have click resolved problems photo and upload on server.
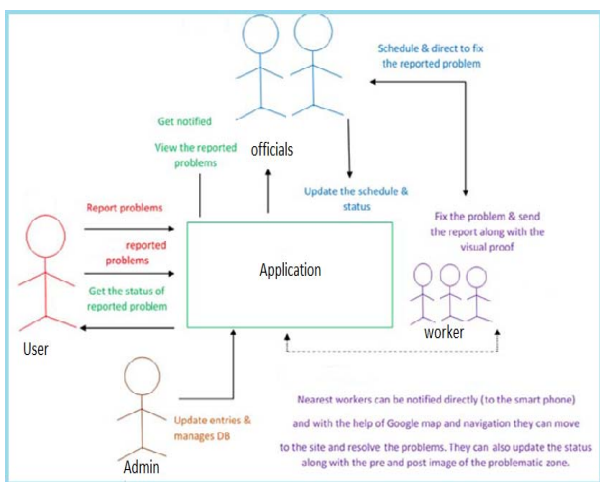

Fig 2: Workflow of system

4. IMPLEMENTATION AND RESULTS

Implementation is the stage of the project when the theoretical design is turned out into a working system. Thus it can be considered to be the most critical stage in achieving a successful new system and in giving the user, confidence that the new system will work and be effective. The implementation stage involves careful planning, investigation of the existing system and it's constraints on implementation, designing of methods to achieve changeover and evaluation of changeover methods.

4.1 User Registration through web portal

User can register through web portal or android application. Users have to provide his Name, Address and Phone number. For the verification of valid user it will generate OTP number, so that admin will know that user is validate. After the registration user can register complaint.

Fig 3: Registration through web portal
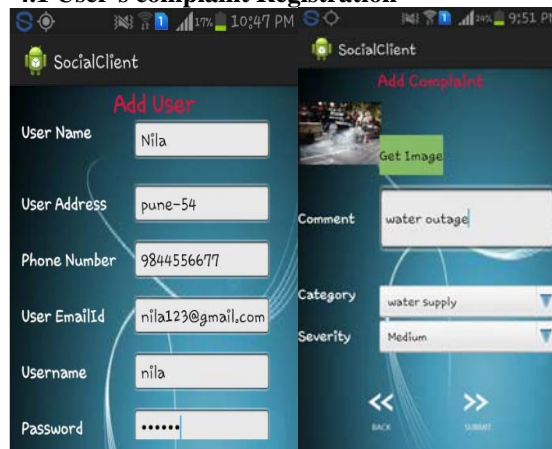
4.1 User's complaint Registration

Fig 3: Registration of user and register complaint

User can register though android phones also. When user is register complain he has to turn on his GPS to track the location and select the category to register complain. Category contains option like water outage, garbage collection, potholes, street light and Traffic management. Then he can choose severity of problem which contains option like problem is medium, critical or major. Then he can check for the updates.

4.3 Admin side web portal

Fig 5: Administrator's web portal

Administrator's web portal as shown in fig contains five major parts. This contains following functions:

1. Validate user

2. Check for the complains

3. Assign the worker

4. Complain Management & Update status

5. Notify user and worker

4.4 Generation of Statistics & pie chart

After completion of query it will generate statistics of registered complaint. Pie chart shows the different categories of complaint and number of complaints registered on specific month. It will help to government officer to put a record and work accordingly.
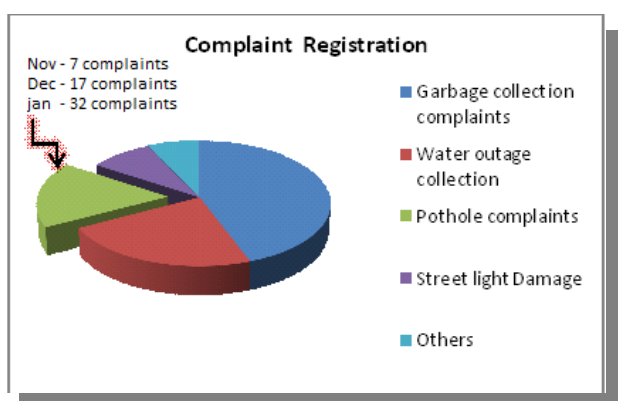

Fig 6: Analysis of complaints through pie chart

4.5 Analysis of Performance

Citizens can give the score after query is complete by employee. They can check the photo of complaint after query is resolved by worker in updates. By seeing that photo he can give his satisfactory score through application.
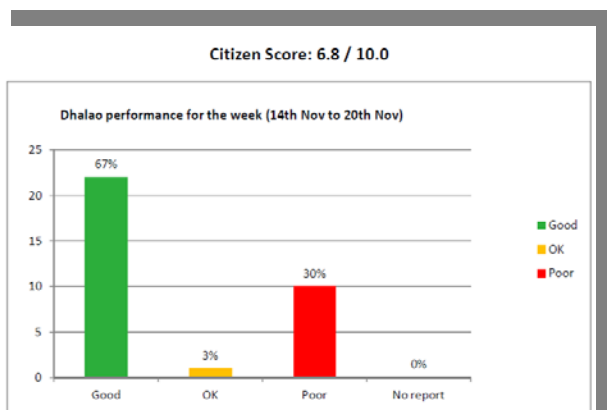

Fig 7: Statistics of Score given by user

5. SOFTWARE AND HARDWARE ITERFACES:

The application can run on mobile devices having operating systems Android 2.3 and above. It can smoothly function on the devices with Ram capacity of 256 and above.

The app can perform on any 2G, 3G or Wi-Fi network connections. The processors of the mobile devices should be of 600 MHz and above. The mobile devices should possess cameras of 2 mega pixel and above and the GPS of the systems must be enabled.

5.1 Mathematical Model of System
1. Set Theory Analysis

1. Let 'S' be the "Social Complaint App"

   $S = \{S1, S2, S3 …... Sn\}$

   Set S is divided into 6 modules

   S1= GUI Handler (GH)

   S2= Location Manager (LM)

   S3= Camera Manager (CAM)

   S4= Configuration Manager (CM)

   S5= Google Map Handler (GMH)

   S6= Database Manager (DM)

2. Identify the inputs as I.

   Inputs = $\{X1, X2, X3 … Xn\}$

   X1= Location   X2= Compliant Data

3. Identify the output as O.

   Outputs = $\{Y1, Y2, Y3 … Yn\}$

   Y1= Location of Complaint

   Y2= Allocation of Complaint to Service provider

   Y3= Notification

   Y4= Reports

4. User Login Process:

   Let 'S1' be a set of User's parameters for login.

   S1= {Uid, Pwd}, where

   Uid – User id of the user

   Pwd – password of the user

Parameter/Condition Uid, Pwd	Function/Operation F1,F2
If(user==valid_user)	F1:Proceed()
Else	F2:Discard()

5. Find Current Location:
Let S1 be a set of current location request parameters. S1= {Lat, Long}, where

Lat: Current Latitude
Long: Current Longitude

6. Let 'S3' be a set of parameters required to file complaint.

S3={Rid, Dest_addr, Compdata, Lat, Long}, where Rid: Request ID

Dest_addr: Server destination address
Compdata: Complaint data

Lat: Current latitude
Long: Curr Longitude

Parameter/Condition	Function/Operation
Rid,Dest_addr,Compdata ,Lat, Long	F5, F6, F7
If (Complait_data && Location_co- ordinates == valid)	F5:generate_report() F6:send_to_officials () F7:discard_operation()
Else Discard request	

6. WHAT WILL WORK THOURGH OUR PROJECT?

Project results will show the efficiency, transparency and following remarkable points:
1. Transparency between government employee and citizens.When government officer try to neglect complains, after definite time complain sends to higher authority.
2. After generation of statistics about complaints, authorities will know when and where the complaints register repeatedly.
3. Citizens can pressure on Government officer so that they can work efficiently on time.

7. CONCLUSION

In this paper we proposed the idea to create a mobile application which can help us with registering the complaints online. No need to stand up in queues for hours. Just one click and you can lodge a complaint anywhere, anytime intended.
This application makes complaints easier to coordinate,
Monitor and resolve. The aim behind developing this mobile application is to make cities a better place to live in. In this paper we have proposed a technique for evaluating the safety of users that combines the predicted safety of the user's location with the aggregated safety of the people co-located with the user. This paper aims to enable the vision of smart and safe cities, by using mobile technologies to securely and privately extract, model and embed real time public safety into day-to-day user experiences.

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