IMPLEMENTATION OF SOCIETY MANAGEMENT SYSTEM: SOCIETALES

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Abstract: - *This paper focuses on the study of implementation of an Android Application for management of Residential society functions. These functions acquire the huge contribution of day to day city life. Residential societies have to deal with many functions which includes Electricity, Water supply, Security, Day to day complaints and many other things. Dependability of all these functions plays a vital role to maintain a hassle free and healthy relations within the society.*

Normally in various societies communication regarding these activities takes place through traditional means of communication. This may lead to improper conveying of information due to missing of transparency. To avoid such conflicts and to manage and maintain daily society functions an automation of these tasks is required.

Keywords*: Android, Messaging, Notification, Cloud Computing, MVC architecture, Database, Push notification services*

I. Introduction

In these days, Android is getting popularity among people by providing smarter way of communication. Considering Indian economy, Android serves as an affordable technology for every other citizen to buy. Powerful and distributive working of mobile devices has an evolutionary effect on mobile computing. In this context android application provides an effective means of communication in a smarter way. Owing to the features of android such as open source, Customizable user interface this project uses "Push notification Technology" through an android application.

This project can play a vital role in providing solution for tasks of residential societies that are "critical to handle manually", by reducing efforts and advancements in a reliable communication. This application entirely works as a Notifier that notifies about meetings, notices to the residents and about the complaints to the admin.

Thus this application can provide a smarter and efficient way of communication between society residents and higher authorities. And hence reliable as well being the independent of time and location of the resident.

II. Literature survey

For this project development the papers we have studied regarding the Notification system are

Multipurpose Android Based Mobile Notifier, Google cloud messaging. Various methods and techniques in terms of Push notification are discussed in these papers. It follows principle of cloud computing and distributed computing. Many handful technologies to push data on mobile devices as well as technologies such as GCM, C2DM (Cloud to Device Messaging), Xtify for user authentication and message transfer between devices are studied. The basic notification application is implemented using Google Cloud messaging as stated in these papers.

Google Cloud Messaging for Android (GCM) provides a facility to send and receive message from the devices located in a same network.   According to Android developer website, "a service that helps developers sends data from servers to their Android applications on Android devices." Hence, the overall purpose and scope of this project is reachable by Push notification technology (GCM) [VII] [IX].

The concept this project implements is based on the paper about implementation of an android application for management of housing society. This paper discusses about implementation of admin – residents interaction for different functionalities including maintenance records and financial report generation in addition. [V]

III. Existing system

Before we move towards the system proposed in this project we must be aware about the current scenarios in order to identify the problems and to deliver appropriate solution accordingly. Currently many housing societies are following the traditional way to convey notices and to inform residents about meetings and to contact higher authorities in case of any complaints though it is time consuming and not so reliable. Though many societies have started using electronic means of communication such as automated chat systems but due to lacking in dedicated purpose functionality they are not suitable after certain extent. Here are some lackings of current systems for communication in housing societies.

A. Unreachable Information:

In case of notice board admin has to post notice on board but even if he plays his role efficiently, information becomes unreachable if lost and ignored by society members or in case if admin fails to update in case of any changes. And even admin remains clueless about whether notice is reached to everyone as acknowledgement of residents is missing in this case

B. Misinterpretation in case of manipulation:

Besides this, information can be easily manipulated causing wrong interpretation and fails to meet the need of reliable way of information transfer.

C. Dependability on Admin:

It creates dependability on admin as he has to e care of all the things being a responsible person and also time consuming

Automated systems are also used now a days no doubt they are effective means of information transfer and one can reach to other person easily through such systems but due to inadequate environment specifically for the purpose mentioned in this project unnecessary information sharing can take place which in turn can dominate the main content.

IV. Proposed system

To address the shortcomings of present existing systems this project serves a solution for the smart way of communication through an android application "SocieTales" the name itself tells the purpose i. e Tales in Society.

This application itself takes care of automated man to man communication. The features this application possess and the facilities which are provided are as follows:

1. Different functions within society such as Complaints ,Meetings, Notices, Suggestions, Rules, Miscellaneous Contacts will available within a single sight so that user can navigate easily among those.

2. Application can provide multiple reminders for a particular events if required so that admin does not required to take follow up of reachability of information.

3. Complaints by user are can be attended by admin as reached to him through mail thus authenticity of complaint is maintained and thus complaint posting can be uninterrupted.

4. Through this application for a particular event admin has to create an event once and notification can be pushed to the residents devices within no time. This reduces admin's job, saves time, and information can be conveyed and received irrespective of the location of admin and residents as well.

5. To provide society relevant user experience different functions can be added according to different societies. Latest control of material design such as Navigation drawer is provided for easy navigation and to serve a user friendly application

In short this application can provide an easy solution for management and maintain the daily functions within society in more disciplined way.

V. Implementation

This application is implemented using IDE Android studio. Android has a built in support for SQLite database implementation for the local storage of data on the device. And the Parse server is used for the storage of user's registration information which is used later to authenticate user and to push notification.

Application is developed by following MVC (Model-View-Controller) architecture pattern for development. In android Model represents all java classes i.e. supporting classes in an application. View represents all the activities in application having the layouts defined using Xml. And Controller represents all the backend running services APIs, Interfaces, Adapters.

Thus Push Notification technology is applied as "Logic" to fetch the data from "database" and represent using "view" for various operations offered by an application.

The architecture diagram of application is as shown in Figure.1 focuses on the working of application. In order to access the services provided by applications user have to get registered by giving basic information about him and his family. After registration user is validate through email id verification and then can be an official member to use the application. Thus after verification user can login using email Id and access the services provided by an application.

According to notices, meetings scheduled by admin, Notifications are generated and pushed to the resident's devices through Parse server. And complaints by residents will be sent directly to Admin's mail Id as shown in Figure 3. In order to achieve reachability to admin.

VI. Advantages

Notifications are pushed so information reaches in reliable and transparent way.

Multiple reminders will make aware residents about events.

Reduces time and efforts for manual communication

VII. Application

Societies with number of members ranging from small to large can use this application to convey Information about daily events in a proper way which is important but not feasible using traditional ways. Thus the services can be accessed by resident after login are as shown in Figure 2. And Resident can post a complaint to admin's mail as shown in Figure 3. In order to achieve reachability to admin.
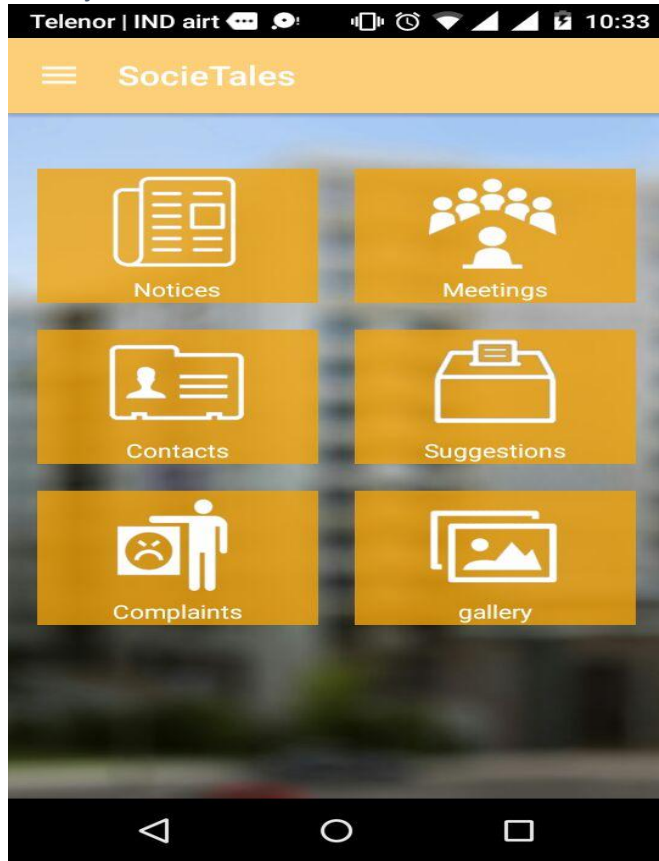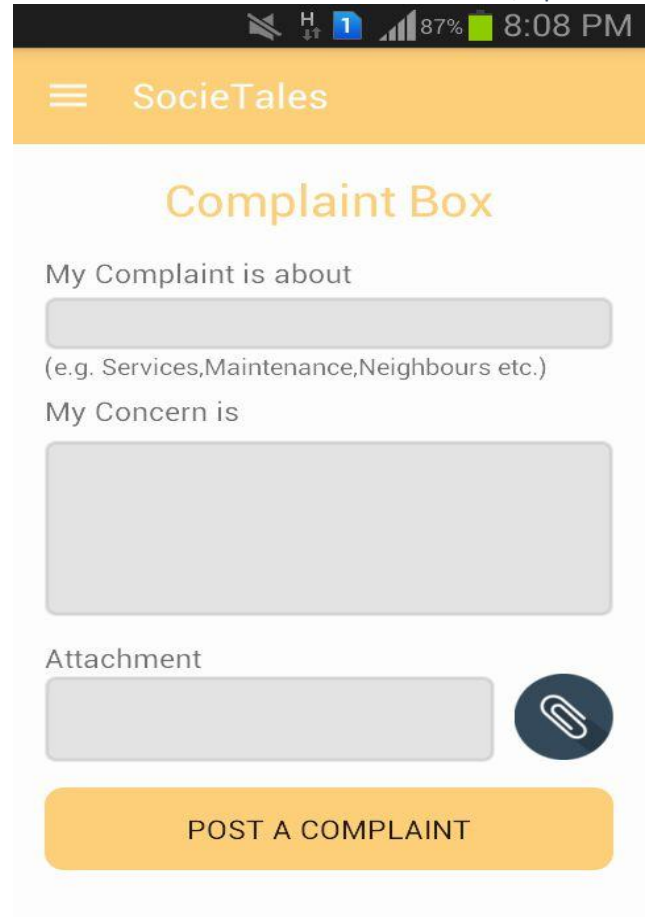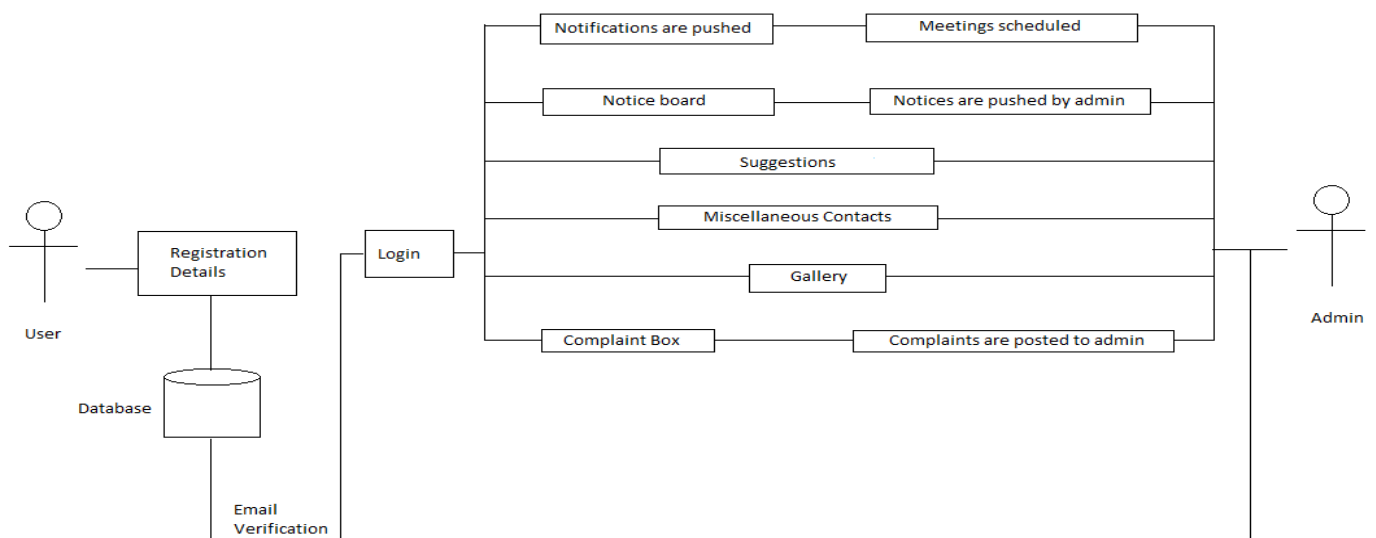
Figure 2 : Home Screen Activity

Figure 3 : Complaint Screen Activity

Figure 5 : Architecture Diagram

VIII. Challenges

Different societies may have different functionalities and different requirements so this can create a challenge to develop a generic application once for all.

Multiple reminders can create disturbance to some people though necessary.

IX. Conclusion

The application provides a hassle free means of communication to conduct and regulate the day to day tasks in the society using affordable, easily available and customizable android technology using push notifications. User can access these services through first registration and then login. The purpose of this project development is to enable the residents and administrative people to play their role effectively and in a smarter but disciplined way. This may improve the interaction between society members and higher authorities

X. Acknowledgement

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XI. Future scope

Advancements in a project such as paying maintenance online through application, Timeline for society events to visualize the society in a

lively way for better user experience are left as a future scope to work upon.

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