

Society Hub Android Application Research Paper

Keval Shah¹, Rutvik Unjeeya², Sejal Thakkar³

¹Keval Shah, Computer Engineering, Indus University, Gujarat, India

²Rutvik Unjeeya, Computer Engineering, Indus University, Gujarat, India

³Sejal Thakkar, Computer Engineering, Indus University, Gujarat, India

Abstract - Daily life in city areas has important things to deal with Housing Society Management. In most of the cases, Society management practices a traditional way of communication. This certainly has some limitations and disadvantages. Daily notices, monthly meetings, cultural events, security alerts, high priority communication and many others which may not be conveyed properly in current scenario because of COVID-19 situation and as most of the things are getting handled manually. It lacks transparency. To overcome the problems occurring due to this time lagging manual system, android application needs to be developed to reduce the human efforts. This android application helps housing management in various things like event management, notice send and receive, maintenance payment, adding or blocking members easily and in few seconds.

Key Words: (Size 10 & Bold) Key word1, Key word2, Key word3, etc (Minimum 5 to 8 key words)...

1. INTRODUCTION

In society all jobs are decided in meetings and maintenance bills, contact no of members are noted in the papers. There is no automated system for doing all the things that generally happen in society so that members can come to know what is happening in society. This system of maintaining a society is made in such a way so that the most common problem faced by residential societies are solved. The main functionality of this project is that there are Payment facilities, event information, Maintenance, notice, notification and contact information.

1.1 Flow of Application

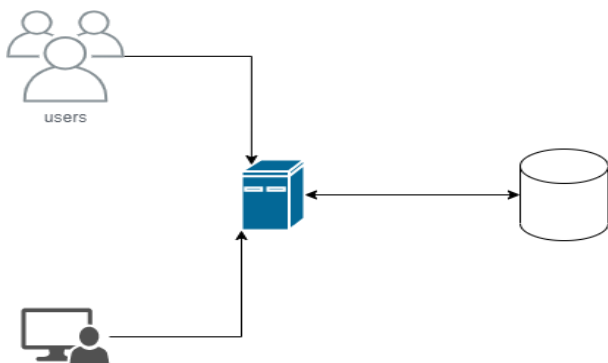


Figure 1: Generalized Flow of Application

➤ Figure 1 shows flow of android application as user, chairman and admin are logged in/out via firebase firestore database.

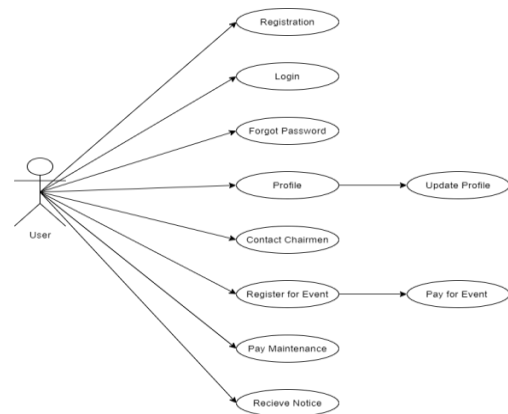


Figure 2: System Behaviour User Side

➤ Figure 2 shows user side system working. User can register themselves and get info of event, notice and maintenance. Also they can pay for event of maintenance.

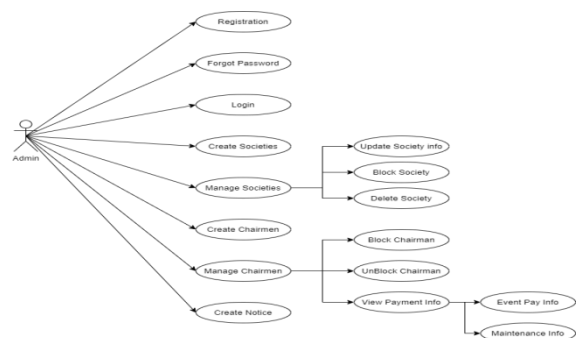


Figure 3: System Behaviour Admin Side

➤ Figure 3 shows system behaviour of admin side. Admin can create societies and chairman and can generate notice for chairmen.

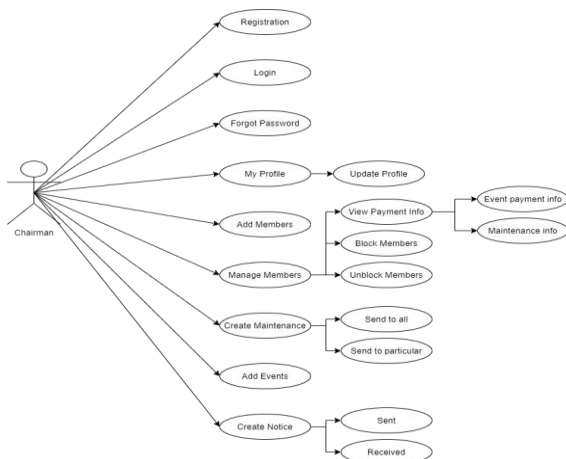


Figure 4: System Behaviour of Chairman Side

➤ Figure 4 shows chairman side system behaviour. Chairman can add/delete or block Members(Users) of society. Chairman can generate event , notice and maintenance for particular or for all society members.

2. LITERATURE VIEW

In Most of the housing societies people are still using tradition way for meeting, notice, payments, events etc .Some advanced flats and societies are using android application for all this work but in that applications , there are still some problems that society members faces in day to day life . They face problem like not getting proper notice or event information on time or some issues in payment or less communication with society members and chairman. Turning Street lights on and off on time can be done by applications using IOT devices .

3. PROBLEM STATEMENT

3.1 Payment Collection from Society Members:-

"Drop your cheque Here" or "Cheque Collection Box" is a very known feature of Housing Society. Third party accountant will come and collects the cheques on a particular day and submit it to the banks. Beside the delay in deposit of the cheques so collected and missing the interest of that month, often members claim that they dropped their cheque on-time but interest is levied or their cheque is missing.

3.2 Notice And Circulars :-

Traditionally, publishing a notice on the society notice board / sending the hard copy is the best option to communicate any decision of the Managing Committee. However, often members continently use the excuse (if the notice is not in their favour) "Maine Notice Nahi Padha" (I did not read the notice).Another problem was of "No

updated" to the members who are not staying in the society.

4. PROPOSED METHODOLOGY

4.1 Admin Side:-Adding-Deleting-Blocking society, Creating society's chairman, Creating notice for chairman, Payment Information.

4.2 Chairman Side :-Adding-Deleting-Blocking society's member, Creating event, Asking money for event, Maintenance payment, Notice and circular for members, New member registration(active-block).

4.3 User Side :-Paying Maintenance, Participating in an event, Complaint Message, Upcoming Events, Society Meeting details.In short this application can provide an easy solution for management and maintain the daily functions within society in more disciplined way.

5. ANDROID ARCHITECTURE



Figure 5: Android Architecture

Reference:http://www.tgs-software.com/images/whatwedo/Android_open_source_project.png

Figure 5 shows overview of android architecture . It is the heart of android architecture that exists at the root of android architecture. On the top of linux kernel, their are **Native libraries** such as WebKit, OpenGL, FreeType, SQLite, Media, C runtime library (libc) etc. The WebKit library is responsible for browser support, SQLite is for database, FreeType for font support, Media for playing and recording audio and video formats.In android runtime, there are core libraries and DVM (Dalvik Virtual Machine) which is responsible to run android application. DVM is like JVM but it is optimized for mobile devices. It consumes less memory and provides fast performance. On the top of Native libraries and android runtime, there is android framework. Android framework includes **Android API's** such as UI (User Interface), telephony, resources, locations, Content Providers (data) and package managers. It provides a lot of classes and interfaces for android application development. On the top of android

framework, there are applications. All applications such as home, contact, settings, games, browsers are using android framework that uses android runtime and libraries. Android runtime and native libraries are using linux kernel.

6. ACTIVITY LIFE CYCLE

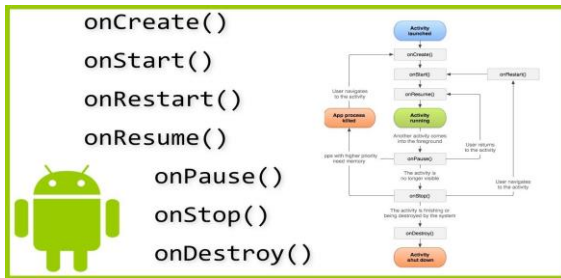


Figure 6: Activity life cycle of android

Reference:<https://i.ytimg.com/vi/UJN3AL4tiqw/maxresdefault.jpg>

Figure 6 shows activity life cycle of android Activity life cycle describes mainly 7 functions which are mentioned in above figure 6.onCreate()-called when activity is created, onStart()- called when visible to user,onResume()-when interacting with useronPause()-when not visible to user, onStop()-when no longer visible to user, onDestroy()-called before activity is destroyed.

7. IMPLEMENTATION

The application is implemented using Android Studio, Firebase Cloud Firestore database .The prototype allows the admin to upload the data on the Cloud FireStore as well as the application itself and modify/delete the data as per need. Also the chairman and add users by checking their credentials. On successful registration by the user, he/she can log into the application and view the dashboards as required, see events/notices sent by the admin as well as chairman. The SHA algorithm used helps ensure security of the passwords entered by the users during registration. Also the application requires the users using the application to be connected to the same network as the database, which in turn ensure security when it comes to data theft.

Admin Dashboard:- shows admin side of android application. After authentication, admin can generate societies , and their respective chairman .Admin also can send notice to chairmen.

Chairman Dashboard:- shows chairman side of android application After authentication , chairman can see their profile, add members, send maintenance, events and notices to members. Chairman can also ask for payment of event registration and monthly maintenance.

User Dashboard:- shows user side of android application .After authentication, user can see maintenance list , event list and notice list sent by chairman. User can also pay for maintenance and register them selves for events. User can contact chairman and see details payment pending and payment done history.

8. DATA FLOW DIAGRAM

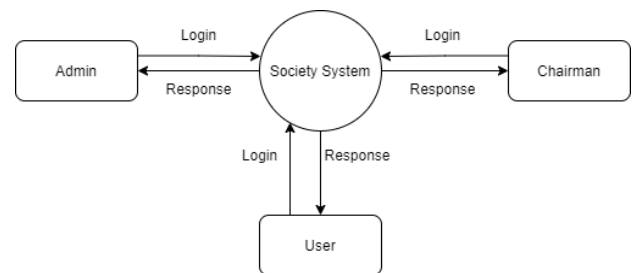


Figure 7: Data flow diagram(level-0)

The figure-7 shows the data flow of application. The admin can change the data and the user & chairman can access the data of application, attend events and pay for maintenance

9. SCREENSHOT



Figure 7: Login Page(Main Page)

Figure 7 shows login page of android application .Admin , Chairman And User can login through this login page and this redirects to respective dashboards



Figure 8: Registration Page

Figure 8 shows registration page .User can register themselves via this page and request will be sent to chairman. After accepting request only, user can login into their respective user dashboard.



Figure 9: Chairman Dashboard Home page

Figure 9 shows chairman side of android application .After authentication, chairman can see their profile, add members, send maintenance, events and notices to members. Chairman can also ask for payment of event registration and monthly maintenance.

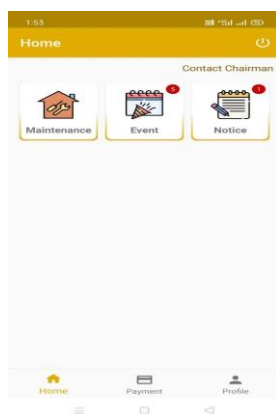


Figure 10: User Dashboard

Figure 10 shows user side of android application .After authentication , user can see maintenance list , event list and notice list sent by chairman .User can also pay for maintenance and register them selves for events User can contact chairman and see details payment pending and payment done history.

10. CONCLUSION

Thus, our application tries to comfort its users and chairmen with easily understandable as well as essential functionalities. Here, both managing committee(Admin side) and residents(Chairman & Users) have the same application installed with the maintenance generation and notice-event generation features disabled at the resident side. This is achieved by maintaining separate login type for all 3 types of users. All types of users have similar rights over remaining features like viewing and posting notices on the notice board, adding and getting notified by calendar events and accessing society member contacts and the various contacts. Our application is implemented to help manage the affairs of a housing society by requiring the committee member to enter and save minimal amount of information. It will allow the members of the housing society to access information about a society, its residents and the chairman on the go. Thus, this application provides a virtual tour of the society. Concept of data mining and artificial intelligence would be worked upon as a future work for our project.

REFERENCES

- [1] <https://www.ijstr.org/final-print/may2018/Housing-Society-Management.pdf>M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.
- [2] https://www.researchgate.net/publication/242335836_Strategic_housing_management_An_asset_management_model_for_social_landlordsK. Elissa, “Title of paper if known,” unpublished.
- [3] https://www.researchgate.net/publication/225202144_Current_developments_in_social_housing_management
- [4] <https://journals.sagepub.com/doi/abs/10.1080/0042098975817>
- [5] IJCRT1803012.pdf research paper
- [6] https://www.researchgate.net/publication/336578049_Society_Management_Application_on_Android
- [7] <https://www.ijcaonline.org/research/volume132/number1/gavhane-2015-ijca-907265.pdf>
- [8] 3747-Article%20Text-6862-1-10-20180104.pdf research paper