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FIREBASE BASED DISPLAYING SMARTPHONE DATA ON DESKTOP

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Abstract – Communication is the only process in the world. And, Today's world is mostly communicating by a smartphone. As the number of users is increasing, the expansion of mobile phone technology is accompanied by the world.In 2020, the current number of smartphone users is 4.78 Billion which is equal to 61.51% people in the world. And, it became a part of human life.Among these, android smartphones are used by up to 75% of people in world wide. So, Android is playing vital role in day to day lives.But currently in a workplace like MNC companies are not allowingsmartphone inside, since the data is being transferred illegitimately. Due to this, the user is unable to know any imperative or urgent information. To give a solution for this problem, we developed a system. The user is able to know and view their smartphone info like Call logs, Messages from anywhere wherever they are with the help of our applicationsystem.

Keywords– Smartphone, Android Application, Firebase, Desktop, Web Application, Displaying Data.

I. INTRODUCTION

From the year 2000, Operating system has developed many things. Initially, we have a basic mobile with limited feature,like making phone calls and sending text messages to communicate each other by sharing an information from one to another.Starting from a Basic mobile to recent featured smartphones, the operating system for a mobile has come far away.Particularly for smartphones, the operating systemis much evolved from Palm OS (operating system)in1996 to Windows pocket PC in 2000 then to Blackberry OS and now turned to Android.Globally, Android Smartphones are using up to 74.45%.Android isone of the most widely used mobileoperating system in present days.

Android is a mobile operating system, based on a modified version of the Linux kernel. On the other hand, it is an open source software, primarilydesigned for touchscreen mobile devices such as smartphones and tablets. Android Inc. was founded by Nick sears, Rich miner, Andy Rubin and Chris White, at Palo Alto of California, U.S in the year of 2003.Later, Android was acquired by Google in the year of 2005 and it is growing up till day.Android is not only an operating system, but also middleware and key applications.

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Android iscontracting with the growth of mobile phone technology in the world.Android has evolved a lot, over the years and has become the dominant mobile platform veryquicklyacross the globe, there have been a number of updates has made in the original version of Android.Android is the most dominant Operating System having more features and huge number of applications for Smartphones.These applications are very simple and user-friendly and makes life easier for the users by using them.The Android supported Hardware's is mostly based on ARM architecture platform.

Generally, the projects which we are doing is to provide a solution for a real-time problem. For example: Constructing a capital for Andhra Pradesh is a problem, and it is a big project. In the same way coming to IT industry, developing a software is a problem and we are going to make it as a project, and the project is converted into product.

Now a days, many MNC companies are changing the work-place environment, to show their identity in the world. Due to this change, the companies are not allowing the use of smartphone inside the work-place. And, the employee works in a company is not able to know any important information from their family. By this act, they are forcibly restricting the user privacy. It leads to a lack of communication with their family inemergency and increases the employee dissatisfaction with the company.This is the problem, which is identified.

To address this problem, we proposed an application system.The main purpose of developing this system is, to share device-oriented information i.e., mobile info like call logs, messages to the server and retrieve that information from a server. Then the users,wherever they are can view that information on smart devices like computers and tabs.

II. BACKGROUND WORK

In existing, theinformationsuch as call logs, messagesand battery information, referred as device-oriented. Which means, the information that user can access through only mobile or smartphone whenever it is available with user. However, such information is related to a user and sometimes the mobile may unavailable from user isunable to know.

For example,the user or employee works in a company is not able to carry their mobile due to some security reasons. They are unable to know such any important information or emergency from their family and friends.

The idea is that, the application is based on sharing information from the Android device to desktops.The application currently supports three types of information: the battery information of the device, SMS and missed call history.If the mobile gets any incoming call as missed call or messages comes from someone andwhenever the battery level downs,all this information willbe uploaded and updated on the server system (firebase). It shows, how to get mobile device related information and send it to the server and allows users to sight the datafrom smartphone to desktop using a web application from anywhere and at anytime.

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It is having 24/7 accessibility and scalability too,users can access their device information from anywhere, anytime using server services. It also provides more security foruser's data.The System has beenadded with some features of menu-driven and buttoninteraction methods, which makes the user the head asthey start running through the environment. The net time,the client should focus is on the installation time.

There are Three key considerations are involved in the possibility analysis needed and cautious to estimate the possibility of a project at the initial possible time. This process is to establish the benefits and investments that are expected from a candidate system and contrast them with costs. Ifbenefits be more important than costs, then the decision ismade to intend and apply the system. If not furthervalidation or alterations in projected system will have tobe made if it is to have a chance of being accepted.

This is a continuing effort to improve each phase of the system life cycle.The system is easy to understand and also the systems have been built by focused on the Graphical User Interface Concept. it can also handle the troubles with a beginner and it doesn't need any extra training.

So, this project is possible in this peak of view. No specialinvestment needs to manage the tool. No specific training isnecessary for employees to use the tool. Investmentneeded only once at the time of installation. The softwareused in this project is freeware so the cost of mounting thetool is least and hence the overall cost.

The requirements to develop this project are divided into two categories. They are software and hardware requirement. 1) Hardwarerequirements areCore-i3 processor, 4GBRAM, 50GB Hard Disk. 2) SoftwareRequirements are HTML & CSS, Java, Android Studio, Net Beans,Apache Tomcat Server andFirebase Server.

III. PROPOSED WORK

The aim this project is to establish, a smart communication between smartphone and desktops. Android is the very flexible and suitable one, which supports and implements our idea as a project. And, firebase is very easy to manage our applicationsystems.

System Model

Mostly it an android project, and there is a need to develop two different applications.They are, 1) Android Applicationand 2) Web Application.

This system user uses thesetwo applications, theandroid application should be installed in smartphone and web application should be installed in desktop.

The system can be shown in the Figure-1, in which mainly has one entityi.e. user of the mobile and web applications.

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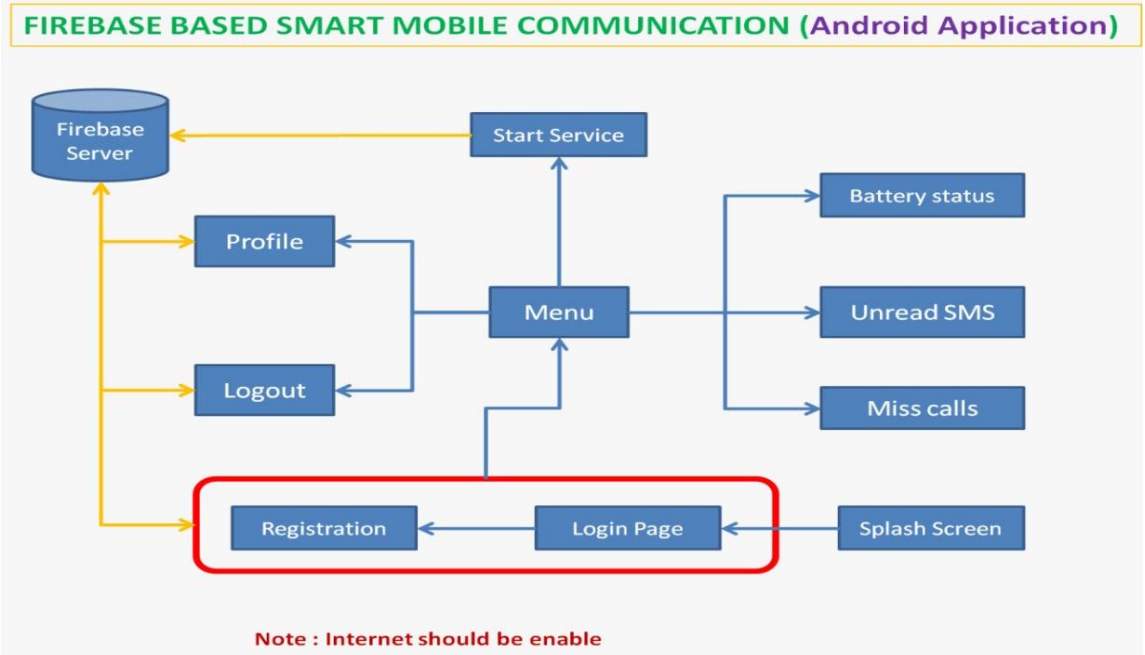

Fig. 1(a): Android Application Overview

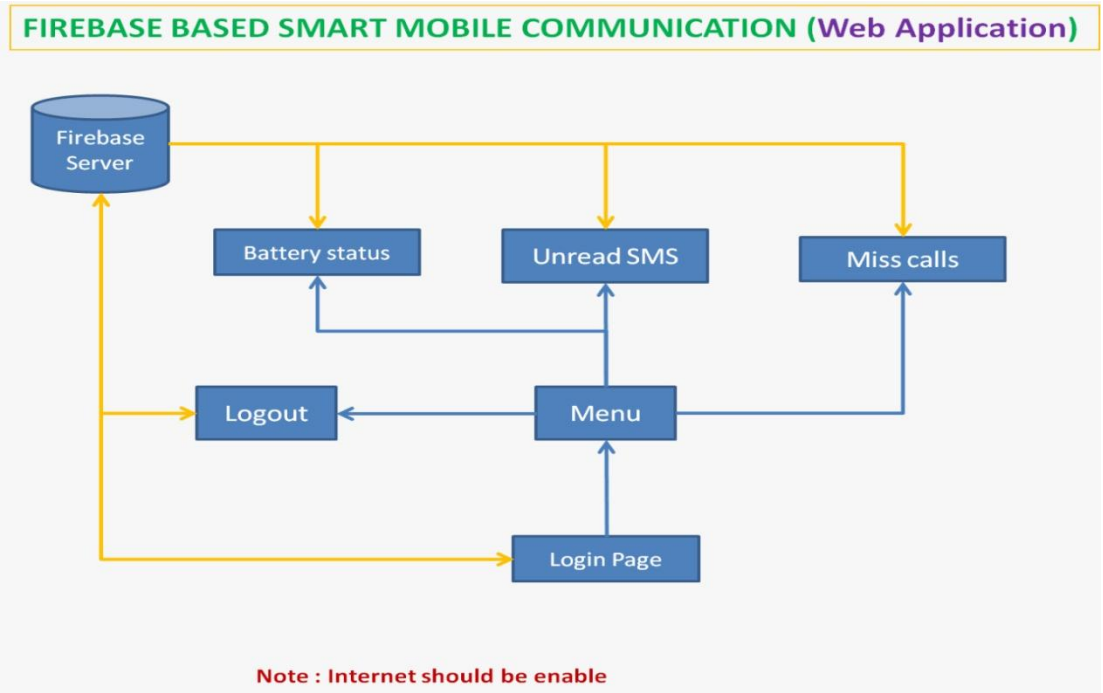

Fig. 1(b): Web Application Overview

Fig. 1: System Overview

The system has following implementation modules:

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User Module

Here the user using android device and should install the android application in the mobile. The user register to the application with their email id and set password for security purposes and login to the application using login credentials and activates the services.

Android Application

Herewe intend an android application that has actions like new user registration, user login, and start services. It validates the user input data, whenever they login to the application.Then, the android application retrieves all the required information from the mobile broadcast receivers whenever user clicks on start services,and transfers all this information to firebase server.

Web Application

Here we designed and developed aweb application that fetches the data from firebase server through the internet, which is received by the android application. And displays that information on desktop. This web application shows the information like,battery info, missed call info, unread messagesinformation.

Firebase Module

For database we are using firebase server to storage all these data. Google providing alow-cost database server like firebase. Firebase is very suitable and flexible databaseserver, which supports to develop anyandroid and web applications andvery easy to manage them. Firebase stores all the smartphone's data like missed calls, messages, battery percentage which are received from mobile android application and fetches to web application to display on desktop.Thefirebase server offers the database service and free hosting services over the internet.

IV. RESULTS AND DISCUSSION

In this system, we developedfor"Displaying Smartphone Data on Desktop"to improve sharing an information between smartmobilesandDesktops (PCs). The following screens show that, our system is more users friendly and efficient.

The user-interface of the android application, after successfully installing it into the smartphone is looks like as show in the below screen in Figure-2.

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Fig. 2: Loading Page

If user is new to the application, should register with their email id and set password forsecurity.The below screen shows, the registration page for this application in Figure-3.

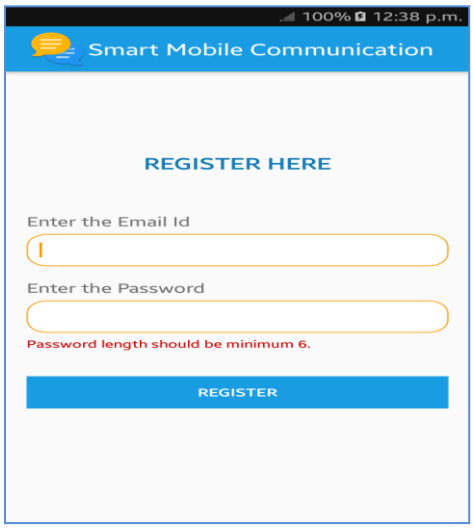

Fig. 3: Registration Page

Then, the user able to login into the application using logincredentials and activate the services.

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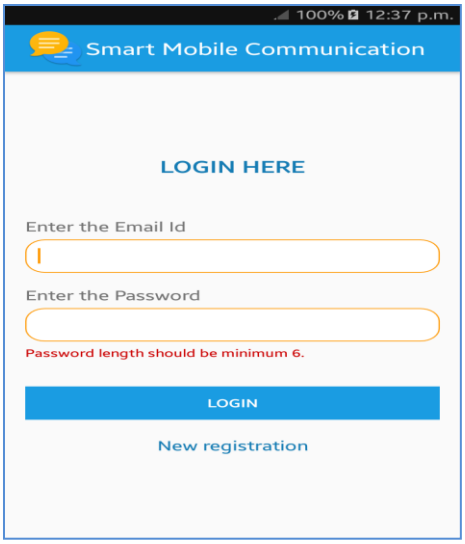

Fig. 4: Login Page

Figure-5 shows, the menu page for this application having some menu options to perform actions which are listed in the below screen.

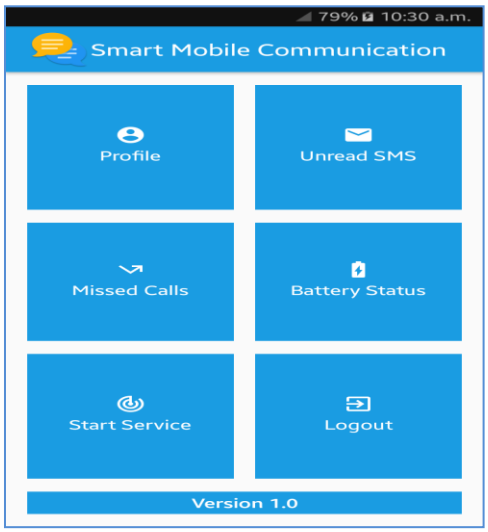

Fig. 5: Menu Page

Figure-6 showing that, Service enabled notification on mobile notification bar.

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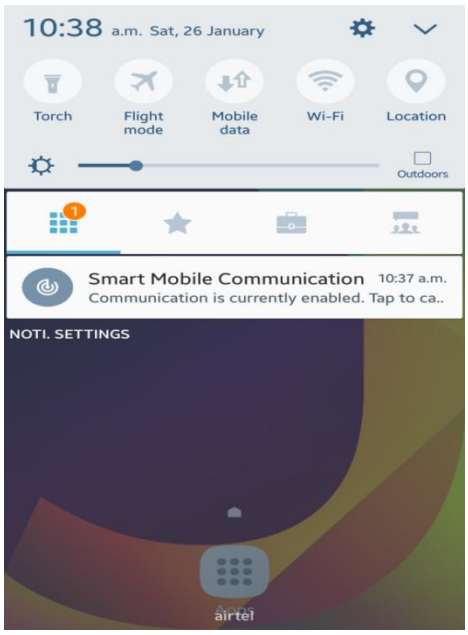

Fig. 6: Service Started Notification

Figure-7 shows, the web application login page and theuser can login using the same logincredentials which are used in android application.

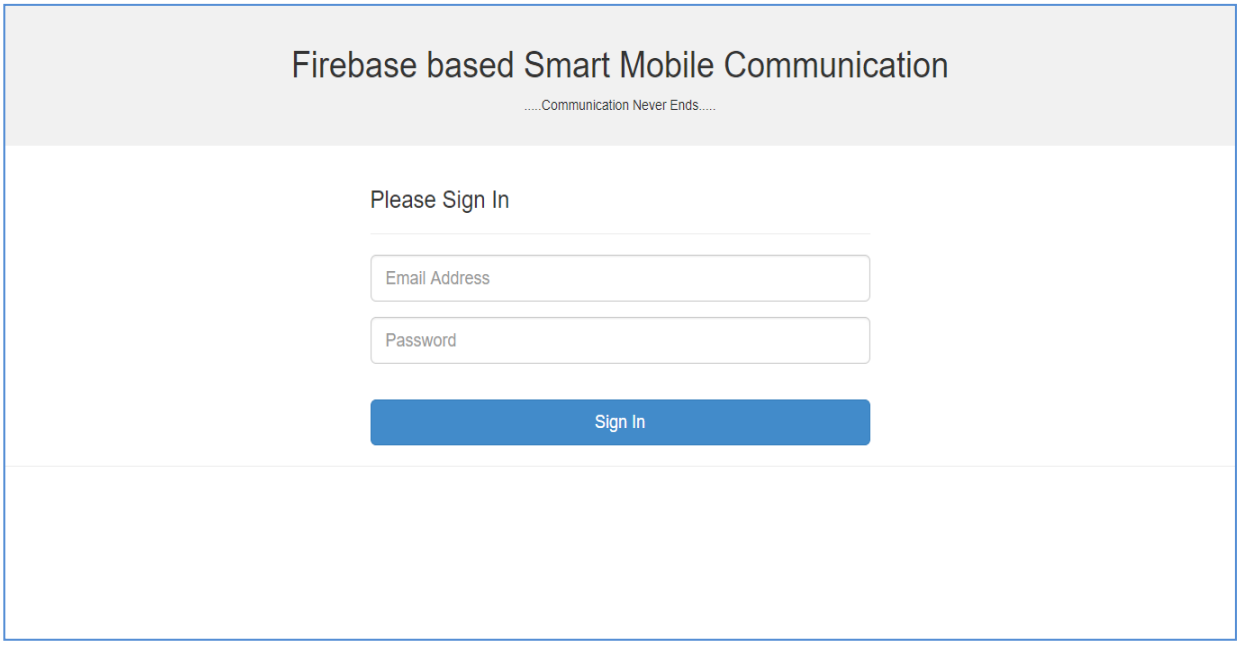

Fig. 7: Web Login

In Figure-8, it is showing the missed call information on desktop using the web application.

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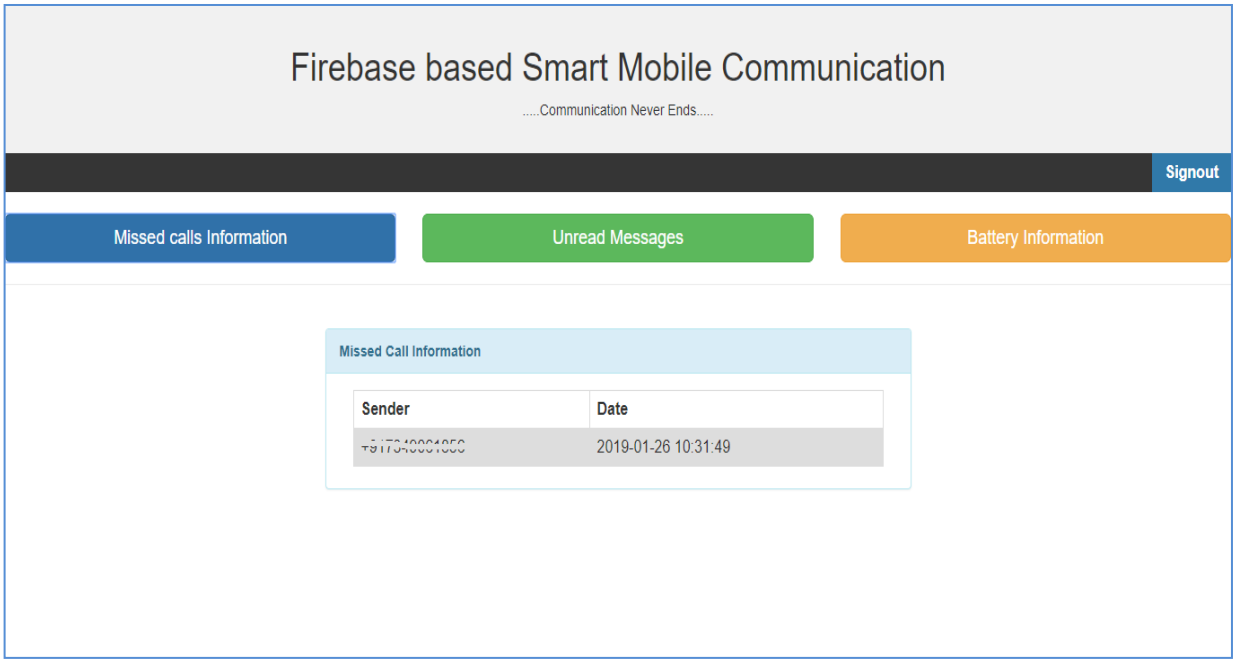

Fig. 8: Missed Call Information

In Figure-9, it is showing the unread messages information on desktop using the web application.

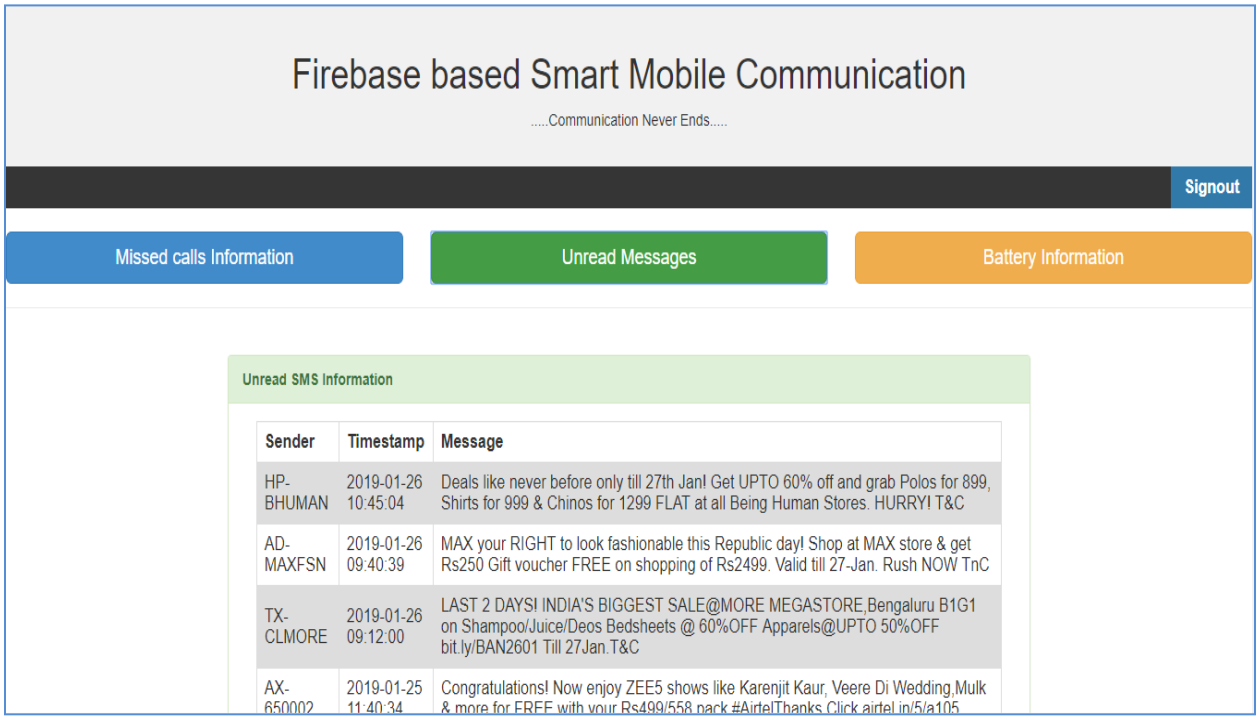

Fig. 9: Unread Messages Details

In Figure-10, it is showing the battery charging information in percentage.

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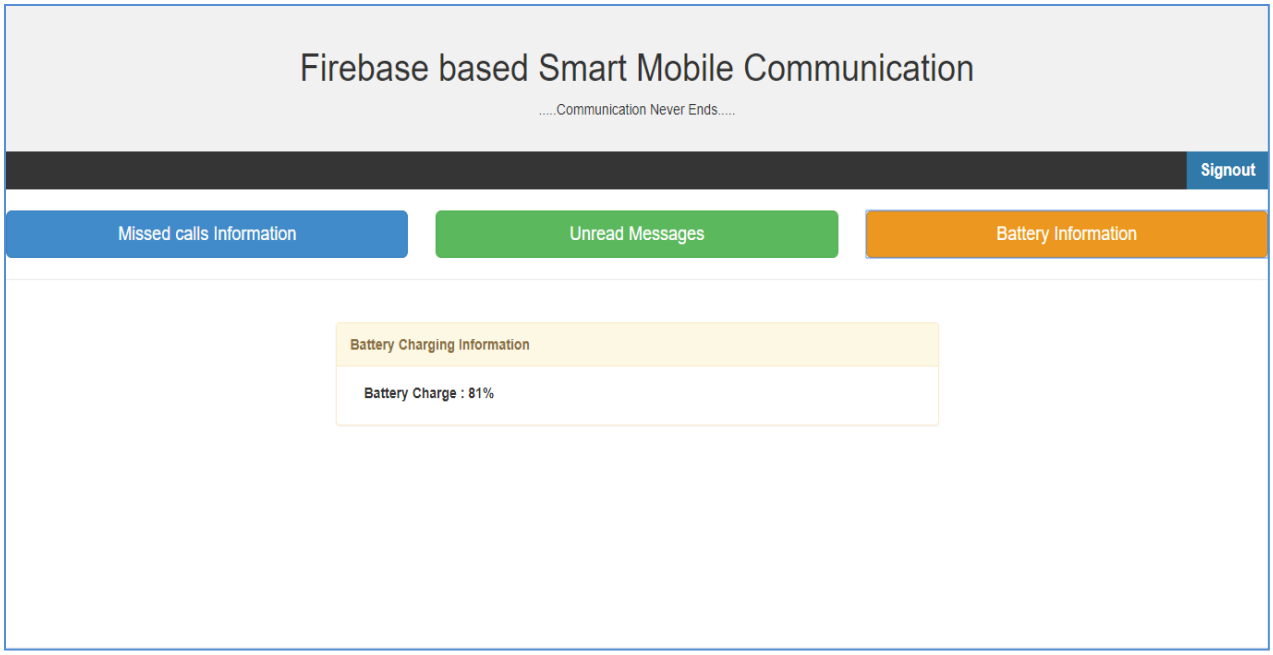

Fig. 10: Battery Information

V. CONCLUSION

In this paper, we proposedan application system named as, “FirebaseBased Displaying Smartphone Data on Desktop”. It is based on sharing device-oriented information like smartphone such as call logs info like missed calls, unread message and mobile battery status from android device to desktops, using an android and web applications. i.e.,when a message or any missed call comes from someone and the mobile battery level down, all this information will be uploaded and updated every time on the server system from android application.And, the user can view that info using the web application from anywhere and at any time. In future we shouldextend our system in the following areas, such as we can add extension for “SMS by sending replies”. We can get notifications, not only for in-built apps but also for downloaded apps (Play store apps). The scope for this system is, “the accessibility can be done from anywhere” by using Google Server Services.

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