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Design Project Report

on

Remote Access Of Mobile Phone

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Abstract - **In the modern era, a mobile phone is treated as a basic necessity of life. People are using mobile phones for various tasks such as data communication. Moreover, these devices are used to store information like contact numbers, essential documents etc. But due to the phones being small and portable, the user might misplace or lose it easily. In such situations, user might need to get information from it. In order to solve this problem to some extent, we are developing an android application to get information from the device or perform some tasks when user isn't in reach with it. This application acts as a personal offline assistant for the user which will help them to do various other tasks such as getting GPS location, locking the phone etc. So, using this application, user can operate their phone remotely. The main benefit of this application is that it completely works offline.**

I. INTRODUCTION

Nowadays, most of the population around the globe are using Android smartphones, as it is a revolutionary invention in the field of operating systems. Android phones are durable and portable, thus making people's lives even more trouble-free. But on the other hand, there are some difficulties also, associated with it. People have become way too dependent on smartphones for many important purposes such as storing contact numbers, sensitive information etc.,.

One of the issues is, android phones being small and portable are easy to get misplaced or lost. It generally happens with many of us that we forget our phone at home or workplace and want to get some data but we can't. And in such circumstances, users need to be in reach with their phones at any place and any point of time. So, there arises a need to access smartphones remotely. In this field, we have come up with an android background service which will help the users to access their phone data or to perform some tasks remotely. Till now we have come to know about solutions which work online. But it's not possible to have Internet connectivity all the time, so to avoid this dependency we have tried to build an offline solution to this problem.

We have developed an android application which will run in the background. This offline application provides user to access the data from his/her phone from any other phone (not necessarily an android smartphone). Basically, it will use the inbuilt messaging service to communicate with the target phone. So in our work, we have implemented some features like locking your phone with a new password, getting any desired contact number, receiving missed calls notifications etc. Installation of this application is quite easy, the user just have to provide the necessary permissions and make the application device administrator for access to some specific features. The messages should be sent with a password and in a specified format. The password should be set after installation and can be changed later. The technical details and feature description are discussed later.

II. LITERATURE SURVEY

There are various applications that helps the user to operate their phone remotely like TeamViewer, Google Find my device . In this section we will discuss how our application is different from these applications.

TeamViewer - This application is used for remote access of mobile phone from either desktop or another mobile. But there are two main problems with this application. Firstly, either both devices must have Internet connection or both of them must be connected to the same network. So we are trying to remove this dependency on Internet in our application. Secondly, TeamViewer must be installed in both the devices . Moreover, some user must be present near mobile phone as a random password is generated each time whenever teamviewer is opened. This password must be entered in the second device before operating the phone. In our application there is no need of the presence of someone near the target phone. Moreover, our application should only be installed in the target device.

Google find my device - This application is used to find Gps location of a lost mobile phone. This application also allows the user to ring the mobile phone even if it is in SILENT mode. It also allows the user to remove data from mobile permanently. However, it requires an Internet connection and a Gmail account must be login to that device. Moreover, the set of features provided are limited. There is no way to fetch data from mobile using this application. So, we are trying to add some additional features to this app and that too offline.

III. SYSTEM ASSUMPTIONS

1. User will allow all the permissions asked for the installation of the app.
2. Phone in which application is installed will have a sim card with good networks.
3. The Phone will have required balance to reply to the query asked by someone.
4. The User will have to start our app once in a day.

IV. ANDROID APPLICATION

The application will be able to do certain tasks or will be able to get some details.So the features this application will provide are given below.For accessing any information or performing any task, the message should be sent to the targeted phone in some specific format.The features are as follows:

1. **Get Contact Number –** Suppose you have left your cell phone at home and want to make an important call to a number saved in your phone. You can get required mobile number by just sending an SMS to your mobile phone in given format.

   ##MyHelper<space><password><space>

   getContact<Name>

   Example : ##MyHelper 123 getContact Jaya

   This "Name" must be exactly the same as saved in your phone book.

2. **Get Notification about missed calls**

   Suppose you have left your mobile phone at home and want to know about missed calls. You can get these notifications by just sending an SMS in below format. Our application will send the contact numbers from which you have got missed calls with the time and date.

   ##MyHelper<space><password><space>Notify

   Example : ##MyHelper 123 Notify

3. **Change to normal mode**

   Suppose you have lost your phone somewhere around you and are not able to find it as it is in silent mode. So in such a situation, you can change the mode of your mobile phone to normal by just sending an SMS in the given format.

   ##MyHelper<space><password><space>changeT oNormal

   Example : ##MyHelper 123 changeToNormal

4. **Change to silent mode**

If you want to change the mode from normal to silent then, you can do this by just sending an SMS in the given format.

##MyHelper<space><password><space>changeToSilent

Example : ##MyHelper 123 changeToSilent

5. **Lock Your Phone**

Suppose you have lost your phone and want to lock it so that no one else can access it. You can lock it either using password already set or by setting a new password by sending one SMS out of the two given below depending on the case.

##MyHelpher<space><password><space>Lock

##MyHelpher<space><password><space>LockNow<space><Password you want to set>

Example: ##MyHelper 123 Lock

Example: ##MyHelper 123 LockNow xyz

6. **Format your Phone**

Suppose you have lost your phone and want to erase data from it. You can erase data by sending an SMS in given Format

##MyHelpher<space><password><space>wipeData

Example: ##MyHelper 123 wipeData

7. **Enable / Disable Remote Access**

Once the app is installed, user has to check a checkbox to activate the app. If this check box is not checked user will not be able to operate phone remotely. Also, to prevent misuse of the app, the user can also disable the functioning of the app using some other phone by sending an SMS in the given format.

##MyHelper <space><password><space> DisableAccess

Here, password is like a security key you have set.

V. TECHNICAL DETAILS

We have developed an android application for remote access our phone on the platform android studio. We have used inbuilt messaging service to avoid dependency on internet connection. Mainly our application will provide a service which will run in the background. This service will allow us to do some actions or fetch any information from our phone remotely located somewhere . And another part is where the user will have to give some permissions to this application for using inbuilt services and can set the password for security purpose in the user interface section.

Background Service :

In this part of our application, we have learned and used the following :

The main functioning of the application depends on the inbuilt messaging service. So, retrieval and reading messages from the messaging application and sending back a reply automatically were the baseline tasks. For implementing these features we have used the telephony services on the device. We have used the methods in this service to determine telephony services and states, as well as to access some types of subscriber information.

Now, secondly, as this application will essentially provide a background service which will run without any user interaction even after closing the application explicitly, so for this, we used **Service class,** which is an application component that can perform long-running operations in the background, and it does not provide a user interface.We have used **Foreground service** which has status bar icon. But then, so as to provide a user interface for other tasks or settings discussed later in this section, we needed to combine UI application with this background service.

After the baseline tasks, for implementing features like fetching contact details of a desired person from the phonebook, we have used a pre-defined android class **ContactsContract.CommonDataKinds.**

Android documentation provides inbuilt classes for many features that serve our purpose. For modifying the system settings to an extent programmatically like changing the mode from silent to normal and vice-versa. Particularly, for changing mode, the **AudioManager android class** is used.

But not only the inbuilt classes, for these actions to take place, we needed to include some permissions in the android manifest file as well as some device policies must be defined in the resource file. Also for access to some features like erasing all the data, locking phone etc, this application should be device administrator because only an admin application can perform such tasks.

For accessing data from call log like retrieving unseen missed calls details, we have used **CallLog.Calls class.** We can filter the information we want from the bunch of data associated with it. Also for this whole process of retrieving data from other application, we need a **Content Provider** of that application and **ContentResolver** object in our application's context**.** The provider object receives data requests from clients, performs the requested action, and returns the results.

User Interface :

In this part of our application, we have learned to build the user interface in android. This user interface will allow the user to change password and commands that are used in messages. For saving passwords and commands we have used shared preferences in android.

Shared preferences are used in Android to store information like username, password, font size etc. In shared preferences, all these data are stored in a file. Shared preference is basically an abstract way of file IO. Shared preference is also used to check whether the user is opening our application first time or not.

VI.   Conclusions and future work

So anybody with an android mobile phone can use our application to operate their phone remotely without the use of the internet. Till now we have implemented a few features and are planning to implement some remaining features in future. Some of them are :

Get GPS Location – In this feature, we are planning to get GPS location of our Mobile Phone using our application. We are planning to give permission of opening GPS to our app and sending it to the number who have asked it.

Divert Call to some other number - In this feature, we are planning to divert all the calls from our number to some other number. The User will just have to send an SMS providing a number to which calls will be forwarded.

Getting information of the usage of app at primary email address – Through this feature, we are planning to prevent the misuse of our app. We are planning to send information on all usage of the app to a primary email address that the user will set at the time of installation. This will help the user to prevent misuse of this app.

References

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