

Remote Access of Android Smart Phone

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Abstract—Now-a-days we are so dependent on our mobile phones, that we need mobile phones in our daily routine. Making mobile phones as a helping hand, we need to be in touch with it continuously. Sometimes mobile phones may not be in reach of the users; at that time we think that it would be good to access our mobile phones remotely. There are some applications that made possible to access Personal Computers remotely via mobile phones. In this paper, we will access android smart phones remotely via Personal Computers. We are making use of a server and client end. The developed application will create a connection between a Personal Computer (server) and android smart phone (client). This application will give a solution to access, control and monitor android smart phone remotely. User will be able to retrieve data like all-call logs, SMS & operator information. Hence, this application can be used as monitoring and controlling system for android smart phones.

Keywords—Personal Computer(PC), Android smart phone, IMEI, MEID, ESN, JAR, GSM, CDMA, TCP/IP, SPN, SDK.

I. INTRODUCTION

Remotely accessing any interactive computing devices has become an interesting section of active users. Every user wants to access the remotely placed computing devices efficiently.

Traditionally, the users are accessing the remotely placed Personal Computers via mobile phones, but it would be interesting if we will able to access remotely placed smart phone via Personal Computer, which is capable to perform the discussed task effectively. Even if the mobile is out of reach of the user, he/she still can access, control and monitor the android smart phone. In this paper, we are discussing the conceptual idea of the application and way to achieve the stated goal. This application makes use client-server architecture to establish connectivity and can operate.

The application is cost effective as it can be able to operate on basic configurable Personal Computer (server) and Android mobile phone (client). The system is very much compact and easy to deploy on user side. Hence, this paper focuses on analyzing and recommending a way to achieve a remote connectivity between mobile phone and Personal Computer.

II. EXISTING SYSTEM

Currently there are different application which perform a single individual feature of our developing system like locating the smart phone and finding the IMEI number.

Following are the existing systems:

A. Find My Lost Phone

This system has an ability to track the lost smart phone and locate the position using GPS tracking system. This application is restricted to perform the operation of tracking the lost phone. This application was developed as a pilot application, to have a overall view of users.

B. Find IMEI

This system is capable of finding the IMEI number of the smart phone. The system is too simple and performs only a single operation of finding IMEI number.

Overcoming the existing system, we are developing such a system which will provide these all multiple features in a single android application. As installing multiple application for different operation can consume lots of RAM space and can lead to performance problem. These limitations of existing systems is buried by our system.

III. PROPOSED SYSTEM

Our complete system has two parts:

A. Client side Application

Client/server architecture is a computing model which consist of multiple client computer or process and single computer or process. Generally, architecture of this type has one or more client computers connected to a central server via network or Internet connection. This system generally shares computing resources among multiple client computer, so in a client server application, client depends upon the server for resource such as a file ,device and also for processing ability.

Similarly, this application is fragmented in two parts, client side application and server side application. Client side application involves the smart phone with android application install on it. Client side is visible to the user and user interact with client side by using some specific action and receiving the response as a outcome of that action . Server side application responsible for processing the request from client side and returns desired result to the client side. Like traditional client-server application, the android client application is installed on smart phone which is fully depends on the server application for service such as a making calls/SMS, retrieving call logs/SMS and providing operator information. Smartphone which having a sturdy android operating system install on it (kitkat 4.4.2) is located at client side.

B. Server side Application

In a client-server application, server is the powerful computers or the process which are responsible for managing resource. Server is also responsible for processing a request which are coming from the client and also for providing a outcome to the client which is the result of that request.

Server side application involves a “*java executable*” file, which is situated on computing device like desktop computer or laptops. Server side is responsible for receiving the request from client side and for providing the service to the user by processing the request from client side, similar like traditional client-server architecture. Server side application is not visible to the user but, it provides the requested service to the user through the android application.

For creating the server as a “.jar” file, we need jdk, Eclipse and other external java libraries. Server is created as a “.jar” file because jar file in java is kind of zip file which hold all contents of a java application including class file, resource such as a image sound file and optional manifest file. “.jar” stands for Java Archive and provide a platform for delivering independent java application.

IV. FEATURES

A. Operator Information service

This feature provides like extracting the SIM number, SIM operator name and IMEI number. By retrieving these details, we are able to view entire operator information which is currently running on the Smartphone.

B. Extracting and Monitoring Call Logs/SMS

This feature helps to view the call log information and also SMS, which is already present on the Smartphone. This helps us to know all call logs and SMS remotely via server.

C. Making a remote Call/SMS

This feature helps to make a call and SMS remotely, using server via smart phone. This makes controlling of smart phone reliable in wireless fashion.

V. ARCHITECTURE

A client/server application is a chunk of software that runs on a client computer and makes requests to a remote server. Many such applications are created by using high-level visual programming languages where UI, forms, and most business logic inhabit in the client application. A client/server application is either a cross platform if it is developed using cross platform language or it can be a platform specific. In the case of a cross platform language there is an advantage that the application can likely provide a user interface that is native in actualization to the OS or platform environment it is running under.

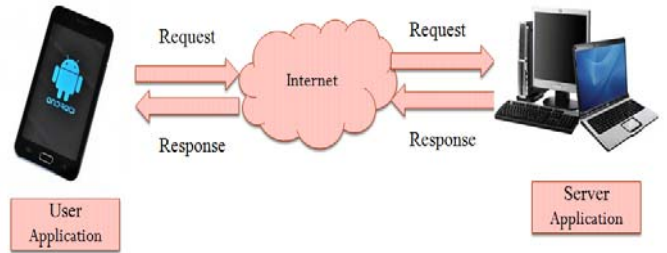


Fig. 1. Client-Server Architecture diagram of system.

In computer networking, addressing information involves port numbers which are used to identify the source and shrink of messages. Port numbers are link with TCP/IP network connections. They allow different applications on the same computer to share network resources at the same time. Home network routers and computer software work with these ports and sometimes support constructing port number settings.

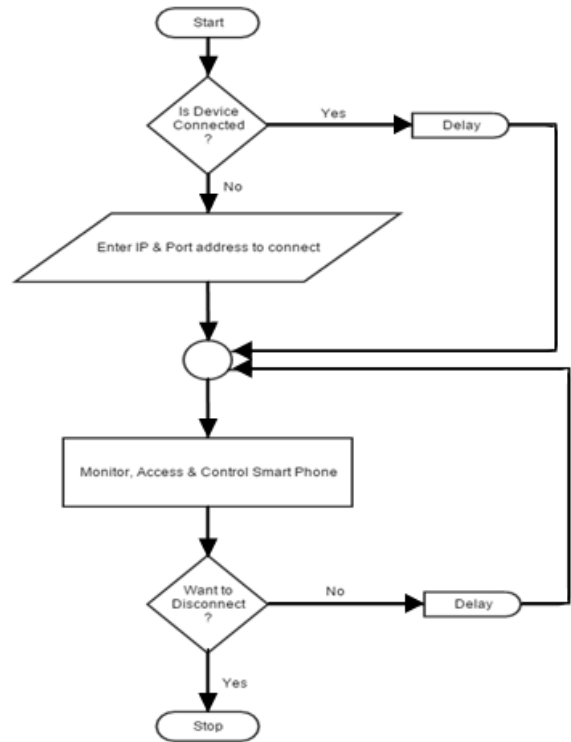


Fig. 2. System Flow Diagram on Client side.

VI. TECHNOLOGY USED

A. Android

Android is an operating system for mobile device. so android sdk, eclipse and android plug-in are required for developing native android application which is located at client side. Android has java core library and it also have additional extra libraries for providing a support for development of android application.

B. Socket

We are using Socket Programming for creating connection between Server (Personal Computer) and Client (Mobile Smart Phone).

Socket Number and Port Number are the two important parameters required for creation and establishment of connection.

In Java, *java.net.Socket* is a Library file which represents a Socket at a client side, and *java.net.ServerSocket* is another Library file used for creating socket at server side and is also responsible for establishing connection with the client.

The methods used for creation of socket and establishment of connection are:-

1. *Socket()*: Creation of socket
2. *Bind()*: Binds the socket to an address
3. *Listen()*: Listens a client request for connection establishment
4. *Accept()*: Accepts the client request for connection
5. *Connect()*: Connects the socket created to the address of server
6. *Write/Read()*: Reads and write data between server and client machine
7. *Close()*: Used for terminating the connection

VII. SYSTEM OPERATION

There are different commands used to perform various system operation. The commands are as follows:

A. Operator Information:

I. “getNetworkOperatorName”

Different built in classes and methods available to obtain Operator Information. Java has telephonyManager class which contain *getNetworkOperatorName* method, the method is responsible for giving name of Network Operator.

This can be send by user through server to get operator information for that user has to click on button to *get_operator_information*.

II. “getDevielD”

This is used to return unique Device ID, which is another method of TelephonyManager Class. Here Device ID refers to IMEI number for GSM network and the MEID or ESN for CDMA network phones

III. “getSimOperatorName”

This method is used to return Service Provider Name (SPN).

B. Call log:

To retrieve the call log such as received calls, missed calls java provide the method '*getAllCallLogs*' of class 'TelephonyManager' which is response to return a received and missed call information

“getAllCallLogs”

This method is used to obtain all call log information. This method is very much useful while retrieving call logs for particular android phone on server.

C. Remote send/receive SMS:

We have another work to receive and send SMS remotely. To accomplish that we have methods and classes from java like :

“smsManager“

This method comes from 'telephonyManager' class and return the meta-data with respect to received and delivered SMS. Method *smsManager* will return the information about received and send SMS.

VIII. APPLICATIONS

1. For Personal use at Home and Offices.
2. Find out mobile phone when out of sight.
3. Investigation
4. Network Service Provider

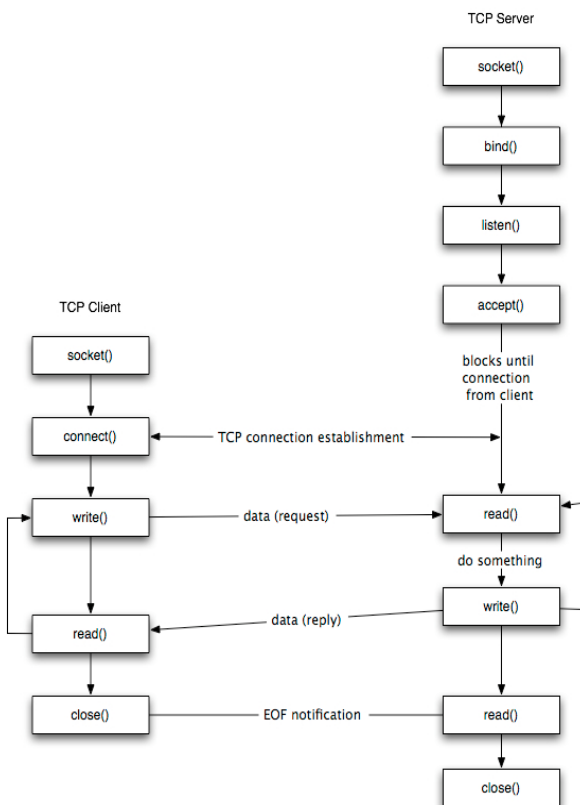


Fig. 3. Connectivity using Socket Programming

IX. FUTURE SCOPE

In Future, we are going to develop a Web Application, which will make the user to access the android smart phone via web server, increasing the connectivity range. We are also planning to provide cloud storage, so that user can even have backup of all data from android smart phone anywhere at any time. This would make easy to extract the data from the cloud storage, which was been deleted from the smart phone. By developing this future application, user can able to access his/her android smart phone from any nook of the world, overcoming the drawback of connectivity range.

X. CONCLUSION

The implementation of this system, will lead to access the remotely located android smart phone through via user's Personal Computing Device. The user will efficiently access, monitor and control his smart phone using this application.

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