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Design and Implementation of WIFI Based PC and Mobile Control

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Abstract - For the users, needing to switch continuously between their mobile and PC, it is not so easy to constantly access their phones at work. As a solution to such a problem this application lets one to manage messages, manage contacts, view call-logs, download and upload files, view all the images and videos from the PC on behalf of his/her mobile phone. The user even need not physically connect his/her mobile to the PC using USB to microUSB adapter cable as this application is based on wireless communication.
Keywords- Android, SMS, Contacts, HTTP, Images, Wi-Fi

I. INTRODUCTION

This application is based on client-server basis, such that the mobile acts as a server and PC/laptop acts as a client. Both the devices are connected to the same network. In order to connect, a HTTP request is sent to the server where it communicates with the actual page requested by the user. The web server then sends a HTTP response which is retrieved on the PC/web browser as a HTML page.[5] Being a web based application it can run on any PC/device having a web browser running on it. It is also possible by running servers on both PC and the mobile which will also act as clients, requesting the other server to gain its control. This paper explains the overall design of the system and its components and interfaces. It takes through the software and hardware interfaces, communication interfaces. It specifies the product functions too.

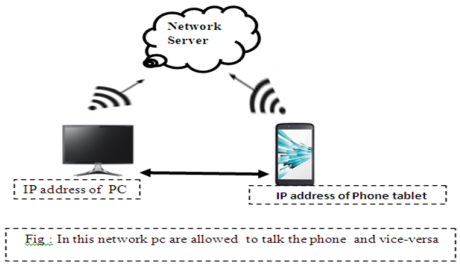


Fig : In this network pc are allowed to talk the phone and vice-versa

As shown in Fig 1, there are two devices communicating with each other through a wireless network. Both the devices i.e your mobile and PC will be able to communicate with the help of network addresses. This leads to the client-server based communication and thus creating a connection oriented and reliable communication channel.

II. SYSTEM FLOW

A. SMS

Sending SMS through the application is accomplished using this module. The user needs to enter the recipient's phone number and text message.This module also displays the inbox of the user's phone. This includes the phone number of the sender and message body.

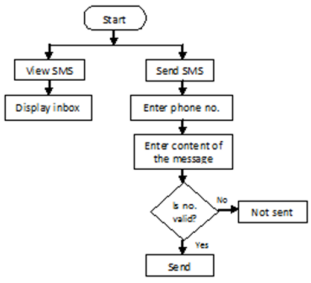


Fig. 1 SMS module flowchart

B. Contacts

Main functions of this module are:

Displaying contacts

Adding a contact

Deleting a contact

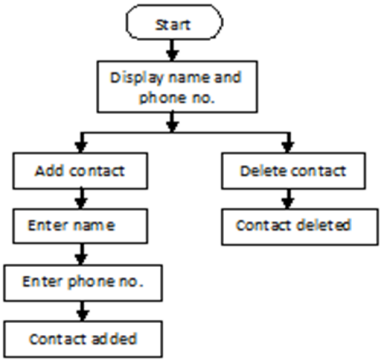


Fig. 2 Contacts module flowchart

C. Call log

In this module, the application displays the entire list of call-logs. A single record of a call-log includes the phone number, call type, call date, call duration.

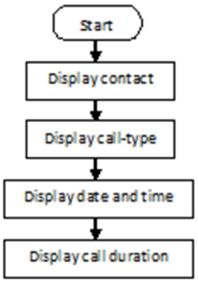


Fig. 3 Call log module flowchart

D. Download File

The main intent of this module is to allow the users to save the files from his mobile to the PC.

In this module, the user gets a list of folder and directories residing on the mobile storage. The user may browse in and out of any directory.

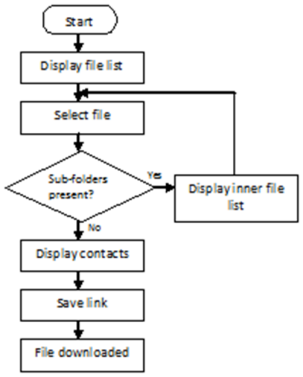


Fig. 4 Download module flowchart

E. Images

The main function of this module is to display the images of the particular directory. Initially the user has to enter the path of the directory whose images he wishes to view.

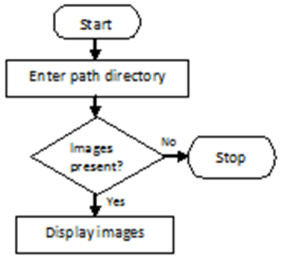


Fig. 5 Image module flowchart

F. Videos

This module functions same as the image module but for videos the path of the directory is to be entered by the user initially. The extension for video files is checked and respective name is displayed.

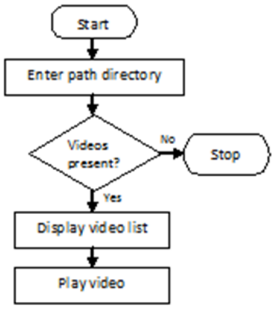


Fig. 6 Video module flowchart

III. INTERFACES

A. Hardware Interfaces

The application is connected with the two devices:
The Android cell-phones running Android 2.1 or later.[1]
The Web Desktop should be compatible with any web browsers, including Chrome 12 or later or Firefox 3.6 or later.
The android device and computer need to be present in the same intranet (mobile hotspot).
The range for the mobile hotspot is about 30 feet. Items such as walls can interfere with the signal, rendering it much shorter.[4]

B. Communications Interfaces

Both the devices will communicate using different network protocols such as HTTP, IP. HTTP functions as request-response protocol in the client- server computing model. A web browser, for example, may be the client and an application running on a computer hosting a web site may be the server. The client submits an HTTP request message to the server. The server, which provides resources such as HTML files and other content or performs other function on behalf of the client, returns a response message to the client. The response contains completion status information about the request and may also contain requested content in its message body. HTTP protocol allows you to establish an even safer remote connection between your device and computer. IP's routing function enables internetworking, and essentially establishes the internet.[6]

IV. PRODUCT FUNCTIONS

This application allows the user to send messages to any of his contact list from his PC, check the call logs, download multimedia files and also view the images and videos of his phone. The PC is connected to the mobile via intranet. This service can be accessed even if the user cannot avail the internet service for the connection. The connection is made by creating an intranet. The client side of this application can work on any of the device having a web browser. One or many devices can be connected to the server with the help of the hotspot created by the mobile.

V. RESULTS

Table I

Time for Sending 10 Messages

Sr.no	Sent through application(in sec)	Sent directly from mobile(in sec)
1	10.30	8.70
2	8.70	8.08
3	7.68	8.48
4	7.43	8.48
5	8.63	8.85
6	8.28	8.33
7	8.60	7.83
8	8.20	8.19
9	8.41	7.79
10	8.60	8.69

Average Delay = 0.141 sec

VI. CONCLUSION

Thus from the results we can conclude that our application, though takes a bit more time, but is a whole lot efficient than the existing services. So this application provides more feasibility to the users and can successfully handle the mobile services wirelessly on the PC.

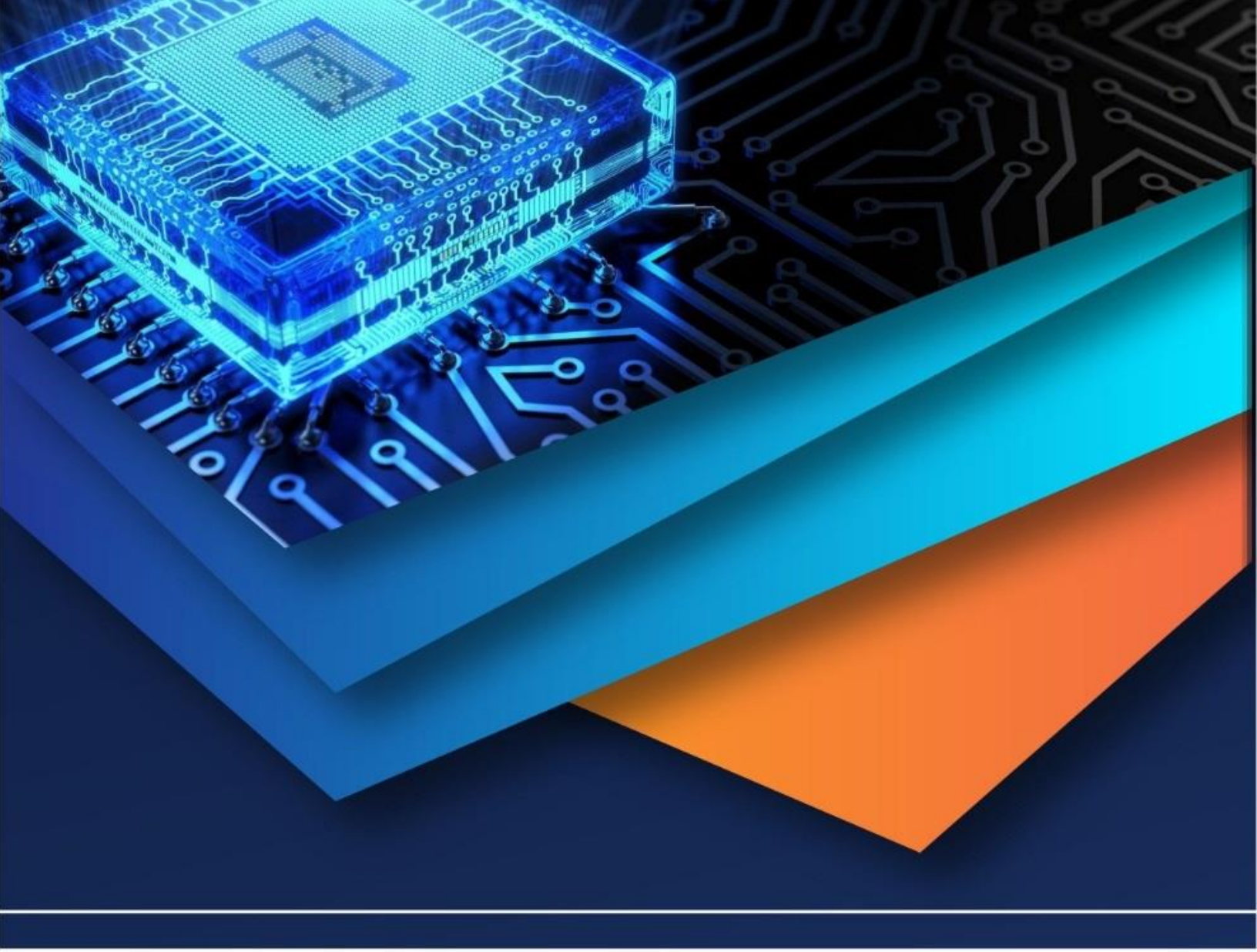
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