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Monitoring and Controlling of LAN through Android Application for Network Security

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Abstract: ***Mobile devices are becoming essential for today's life. In developed countries, about half of the people have a Smartphone, resulting in millions of these electronic devices. Android is the most popular operating system for Smartphones and other electronic devices such as tablets. Hence, for network administrators, it is essential to start managing all the Android based devices. Network is formed by the collection or group of computers. While in office is an easy task to manage and control the activities of the network. A remote LAN (Local Area Network) network can be controlled by a user from anywhere using a mobile based application (running on ANDROID operating system). The necessity of such a system arises when the user in unavailable at the actual site of the network. In such a case, to monitor and control the various activities of the network, a wireless and user friendly interface needs to be created through which the user can execute different commands to control the various activities of the network by using Wi-Fi, GPRS.***
Keywords: Android, remote LAN, Wi-Fi, GPRS.

I. INTRODUCTION

Mobile devices are becoming essential for today's life. Mobile devices such as smart phones, tablets are the recent trend in the society and almost everyone carry smart phones with them. Generally network is formed by connecting a multiple computers. It is easy to control the network when admin is present in the office but when admin is away from office then it is difficult to get the detail of network activities. It is not necessary that depends on any other third party for getting the details of the network activity. So developing a mobile application through which admin
can easily monitor and control the network activity.In network monitoring system there is at least one monitoring centre that can control and manage all the network activities. Also communication between particular client and admin is happens with the help of central monitoring centre. The main aim of this project is to develop an software application that will help network admin to monitor the network activities from the remote location by using android phone. For the network monitoring and controlling system generally uses PC as the monitoring and control devices in system, but it is not more applied to fields that need mobile communication, such logistics management, maintenance of machines and monitoring and control. Along with the development and popularization of wireless communication technology and mobile devices. Using mobile devices to realize wireless monitoring and control becomes possible and has vast development space.
Access and Monitoring WLAN Using Mobile Application" is developed to monitor the LAN network from our smart phone. In recent years the world is pervaded by computer operated devices. Use of mobile phone is frequent in day to day life. The objective of the project is to give the details about the computers in network to the administrator, so he will be able to view and monitor all the machines in the network. In our project a network of computers connected together is formed. This network is monitored by a central server. This is identical to the typical client-server architecture. This server is connected to an android based smart phone. The machines connected in the network will act as client and the mobile phone will act as administrator of the network. All the monitoring will be done through the android app installed in mobile only. Administrator will monitor all the ongoing activitiesin the network with the help of server only[1]

II. EXISTING SYSTEM

In GSM based network monitoring system, it monitor and control the network by sending message. In this system, the technique used is that the Administrator sends his request via SMS using his cell phone through GSM modem to the control monitoring server. The particular client machine is identified by the server and do the definite task for respective request and sends response back to the administrator. Server sends command to the client machine. In this technique the communication between server and administrator is done via the GSM service provider.

Activities of Clients are controlled and monitored by administrator through the SMS. But there are many drawbacks in GSM based system like as SMS cost is high and also in some of the situation there is failure of the GSM modem in the GSM based system. This system is not convenient and useful for user. Another is email based network monitoring system. In this system more necessary details of network activities are send to the admin on their email account, when admin is away from office or out-off station[2]. The importance of Decision making has been reported by many researchers in varied fields. Some of them being E-LEACH protocol, Smart Home Appliances Controller Using IOT [3, 4].

III. PROBLEM DEFINITION

In previous system Admin sends his request through SMS with the help of phone with GSM modem to the LAN server. Then server find the client machine which admin is to be monitor. The communication is done with the GSM modem which communicates with the server and the server communicates with the clientvia GSM service provider. But such system fails when there is no any SMS service available or low balance. Main function of the proposed system is that monitor and control server using android phone because of admin can perform more task at a time Nowadays the administrator is performing more than one task at a time, so he should control the server from his remote place . So we can implement an application in Android mobile system to monitor the network provided that Wi-Fi is enabled [2]. Decision making is another popular area where predicting suicidal behaviour by Machine Learning and VANET in Adhock Networks connects nodes to each other and to the Internet [5, 6].

IV. FLOW OF SYSTEM

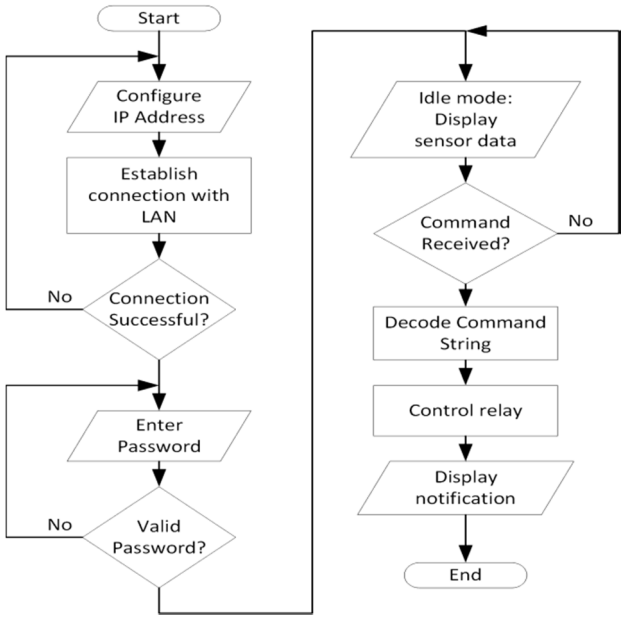


Fig.1.1 Flow Of System

V. PROPOSED SYSTEM

A. Mathematical Module

1) Description……..
2) Let S be the System Set such that S ={LanUser, Client, Server, Administrator}
3) Client={Clist ,loginId, connection_req, selectpc, a_command}
4) Server{Database,updatedb,connect,register,comman d,fetch}
5) LanUser={Ulist,ChatList}
6) Clist={client1,client2,……clientn}
7) Server is used for sending commands
8) Ulist={user1,user2,……..usern}

9) loginId is used by users to login and use the product
10) updateddb is used to keep the records of the users.
11) Invite_connection is used to invite a client for chatting.
12) Chatlist is used to get list of online users.
13) Register:=(loginId, password).
14) Execute:=used to execute the command.
15) Result:=gives the result of the command.
16) Remove_req:=request by user to remove himself from the n/w.
17) Remove:=use to remove a user.[7]

B. Android mobile based System

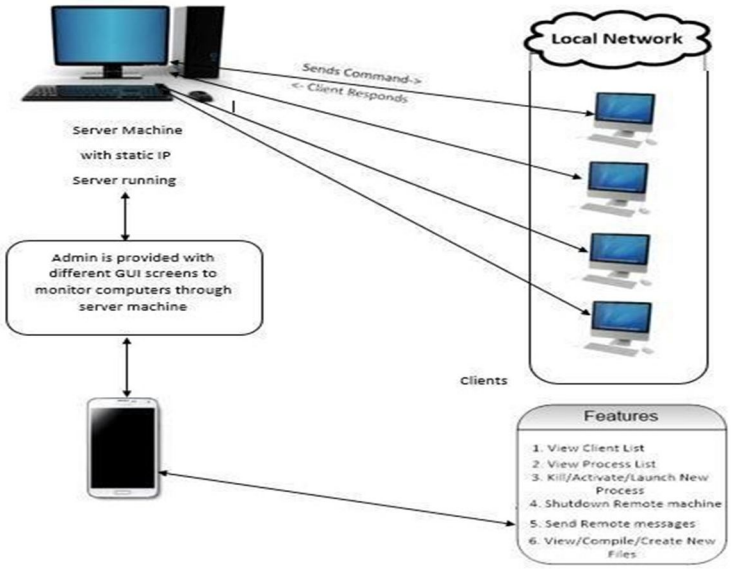


Fig.1.2 Block Diagram

1) Objectives: We are proposing a system in which the idea of user monitoring through the Android mobile is presented. Android market being the most widely used market for all types of applications, we have focused to develop an application[8].
2) Features of Android Based System and Advantages of system: We can use system to monitor large networks like university, colleges, offices etc. we can develop same application for I phone and blackberry also.

Features:

a) Client List: We can get list of client logged in at any time. Can keep track of status of every client at anytime.
b) Process List: We can obtain the list of processes running in machine.
c) Activate Process: We can start different processes on server or client machine.
d) Kill Processes: We can kill the unwanted processes.
e) Scheduling: By using scheduling we can stop the processes according to the priorities.
f) Data Recovery: We can recover the lost data during the processes.
g) Pen drive Check Service: It is service using which one can check whether a Removable disk is attached to a PC.[9]

VI. PROJECT WORK

A. Modules

1) Users: These types of users can be client. They can communicate with each other. They can send the request to the server.
2) Admin: Admin is the server who can monitor complete LAN system using cell phone. They can communicate with the client.

B. System Connectivity

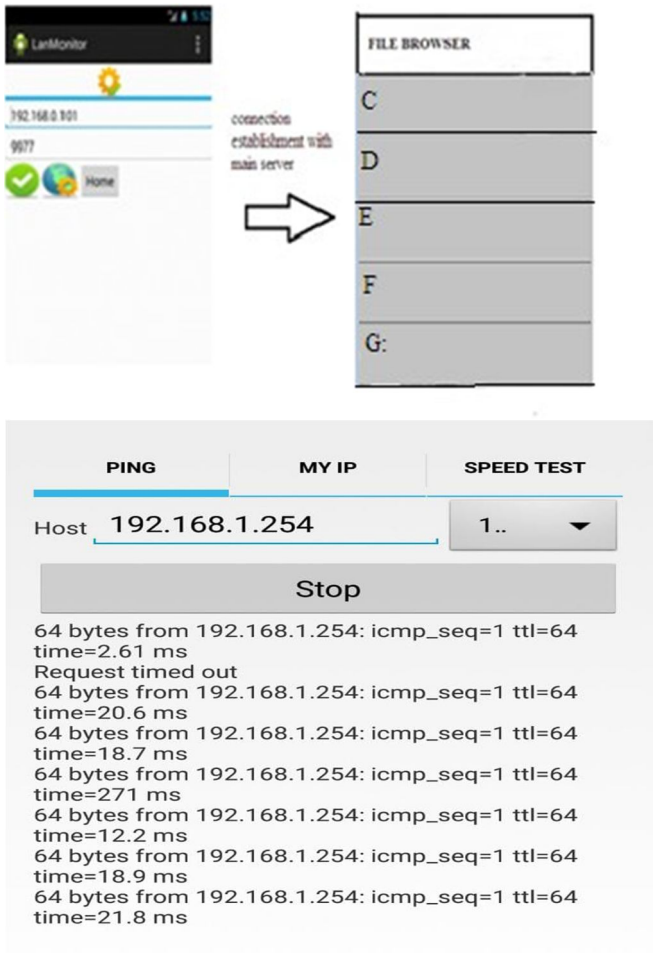
The feature which is selected by the admin on phone, a HTTP request is sent from the phone in URL form and received by the server. This client is accept the HTTP request and send back to the response to the server. The client reads this URL message and extracts the command name and other required parameters. The command is executed on the particular machine to which the server sent the URL. The URL from phone have the IP address of central server and its port number. In client-server connection we normally use 4455 for server port and 7788 as client port. URL from phone to server is written in the java code which is at the server side. The client side will only have the client-server connection code. Then admin can monitor the client when connection is established with main server. Then admin can perform all features.

C. Advantages

1) *Scalability:* We can connect any number of clients to the server as per our requirement.
2) *Availability:* It is available any time anywhere even administrator is remotely moving.
3) *Security and Convenience:* The Android based LAN monitoring system is very convenient and secure.
4) *Reliability:* We can perform all functions required to administrate the LAN remotely.
5) *Transparency:* Meet the Administrators requirements and satisfaction, since perform all functions required to administrate the LAN remotely. Our System is easily understandable to user. [10]

VII. RESULT

Fig1.3Result



VIII. APPLICATION

1) LAN monitoring at the university/college level can be used for monitoring, logging ,user activity as well as any problems issues.

2) LAN monitoring at the office level can be used to monitor the office LAN by the administrator at any time if at a particular point he/she cannot be present there. He/she does not have to depend on any third party information regarding the LAN and can instead check the LAN status himself using his mobile.

3) LAN monitoring at the malls is used to monitor all information of malls by administrator at any time if at particular time he/she cannot be present there.

IX. CONCLUSION

From this paper we have concluded that the GSM based system is not convenient for user. We have done the studied about the SMS based system and from that information we developing Android based system for WLAN monitoring. The android system can monitor the system whenever he is not present in the server room by using WI-FI.[7]

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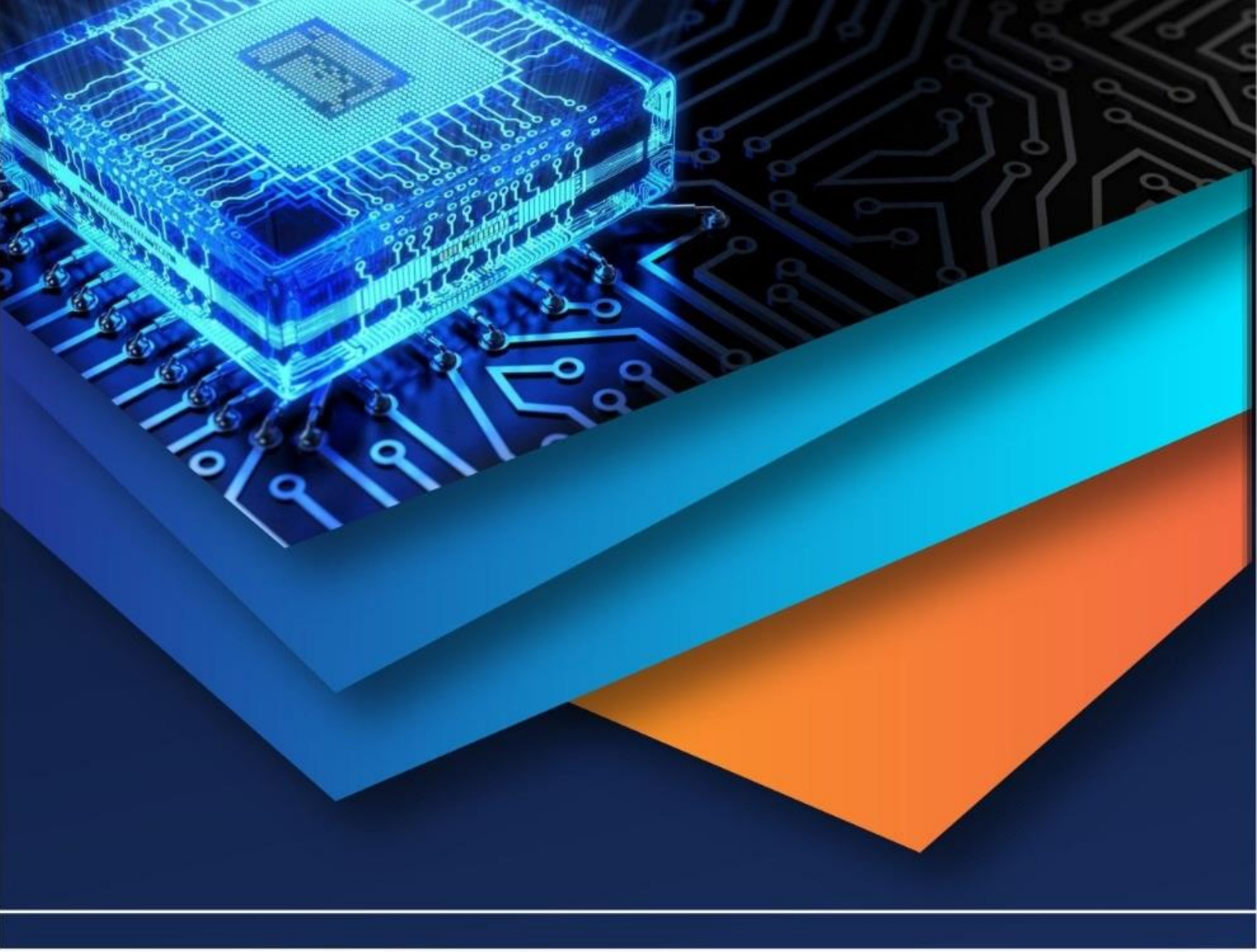

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