GSM Based Server Control System (SCS) For Better Security of Computer Automation

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Abstract- Server Control System (SCS) provides remotely controlling approach that allows computer user to control operation on computer from remote location provided the user is authenticated. User does this by carrying out computer operations through GSM modem and SMS technology. This paper also demonstrates on operations related to network and prevent unauthorized access using attention commands (AT). Hence this application will help user to operate his computer remotely and also get SMS alert to prevent unauthorized access to computer.

Index Terms: Mobile phone, Short message service (SMS), Global system for mobile phone (GSM).

I. INTRODUCTION

Initially mobile phones were developed only for voice communication but now-a-days the scenario has changed, voice communication is just one aspect of a mobile phone.
As headed into the second decade of 21thcentury and witnessing more and more digital devices all around us in our daily life. They indeed influence in our routine living and we cannot even imagine one single day without using them. Mobile phone, PC, TV, audio/video player, air conditioner, fridge, oven, and so on are Sample of tens of digital devices we have took them for granted as part of our lives [2].
What more digital devices would come to our home at the end of current decade? Ease of access and use, is the main purpose of many remote controllers we now use for our devices, their number is getting bigger and bigger each day, as a new device becomes remotely controllable. Speakers, air conditioners, lights, curtains, garage door, TVs and players are already being remote controlled [6].Many applications like web hosting services, network servers, and automated systems need to be monitored continuously. And to monitor them 24/7 by being physically present at the location is not viable.

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Therefore there is need to control such applications remotely by mobile devices [5].Their number are getting bigger and bigger each day, as a new device becomes remotely controllable.
Server Control System (SCS) provides remote access to a system and also provides security. System is further developed by controlling various computer applications using SMS technology and providing security by detecting unwanted plugging at USB ports. As Now days the official work is distributed in groups, and the administrator is only a person who have to monitor all work continuously but he may be not always at the working location. So to handle the work of the office from remote location this application provides facility to work with the computer operations using text SMS from mobile phones. This can be done by using combination of our mobile phone and with GSM hardware for providing connectivity between mobile and system. It is a mobile technology that allows for sending and receiving text or even binary messages to and from a mobile phone. With an SMS based computer control system, monitoring and control can be achieved at all times. This is as a result of theease of accessibility that comes with the use of a mobile phone. Therefore, to achieve an effective remote control and monitoring system for a SMS based system is needed.

II. RELATED WORK

As there is need for controlling your system applications when we are away from the site. This can be done by using combination of our mobile phones & with some hardware for providing connectivity between mobile and PC.
Idea to control the microcomputers remotely with the help of SMS technology is implemented [1]. The System is built with mobility in mind to provide remote access to a system also providing security to the system. We have further developed a system by controlling various computer applications using GSM/SMS technology.
Varieties of electronic equipment and systems like: TV, security system, Hi-fi equipment, central heating systems, fire alarm systems, security alarm systems were need to handle, ON/OFF or monitor these electrical devices remotely or to communicate with these but, if you are not at the home or that place and you want to communicate with these device. So the new technology to handle these devices remotely and for communication required the GSM, mobile technology, SMS (short message service) and some hardware resources. With idea of remote controlling of home appliances [2] we have tried to control the computer from remote location as like the appliances.
Information is sent to web server and to the different clients using web server by SMS. Authentication and authorization of the account is done by web server. The information is stored into central database at web server and then it sends to mobile, by connecting mobile with USB or wireless technology like Bluetooth/Wi-Fi to send information to the user. Use of mobile SMS to control applications in [4]

helped our idea to manipulate authentication of the users by their registered mobile numbers.

III. METHODOLOGY

1. SCS application is running on the system.
2. GSM modem is connected to the system. To make connection select the COM port from SCS and connect it.
3. After connection, the mobile phone is tested for SMS.
4. If the phone has SMS capability, then a GSM modem will allow transmission of SMS.
5. Authenticate user sends the command through SMS, if the command is in proper syntax then system executes the command and replay to that authenticate user. Otherwise it ignores the SMS and no operation will be performed.

IV. SYSTEM STRUCTURE

The system is made up of hardware and software components.

A. Hardware

The SCS consists of the following basic hardware components:

GSM Modem**:** This is hardware component that is used to transmit/receive the SMS to and from the system. This component is communicates the system via USB port.

Mobile Device**:** mobile device is used to transmit SMS to computer via GSM modem using radio frequency. Mobile should consist of proper SIM card with specific number so as to communicate with computer.

Computer**:** This contains software components like SCS application and other needed components.

B. Software Structure

Input Design:

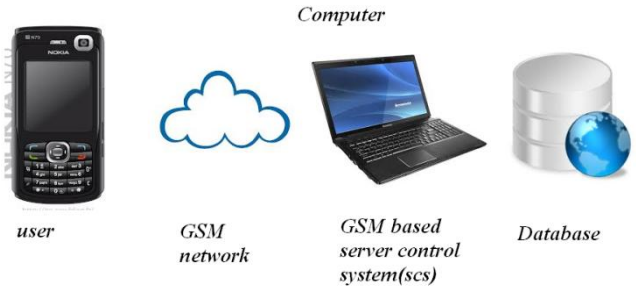

Fig.1. System Model

From the fig 1above the user input that is the text SMS is send through mobile phone should be liable to be in correct syntax else input is rejected by system. The input should be from authenticated user. Once the SMS enters the system it is checked whether it is in correct format and from authenticated user.SCS checks the command id in the message with the id in its database, when both the id matches then following command is executed by SCS from Fig.2.Some of the input operation syntax is as below:

Basic syntax of command is:

START Initials [PIN] command id **END**

Here,

The command should start with START tag and end with END tag. Initials is a string that the user has defined in his registration form, PIN is unique no for each user, and command id is the short name defined to the particular operation in the application database.

1) Shutting Down and Restarting the Computer To shut down or restart the computer remotely, a user has to send:

START RGP [PIN] STDWN **END**

When this command arrives at the application first the syntax of the command is checked, initials, PIN, command id are checked with database. Once the command that has arrived is correct and authorized then the command is executed.

2) Start the MS Word Document

START RGP [PIN] STWRD **END**

When this command arrives at the application first the syntax of the command is checked, initials, PIN, command id are checked with database. The word application is opened.

3) Get Network Status Information

START RGP [PIN] GTNTIF **END**

When this command arrives at the application first the syntax of the command is checked, initials, PIN, command id are checked with database. Application executes this command and displays the information regarding the network.

4) Start and Stop Windows Services.

START RGP [PIN] STWNSR **END**

For this command inthe application first the syntax of the command is checked, initials, PIN, command id are checked with database. Application executes this command by executing the windows service that is created by the user.

5) USB port security.

If user connects any USB device to the System, then SCS detect the port and send the message to the administrator for the purpose of security.

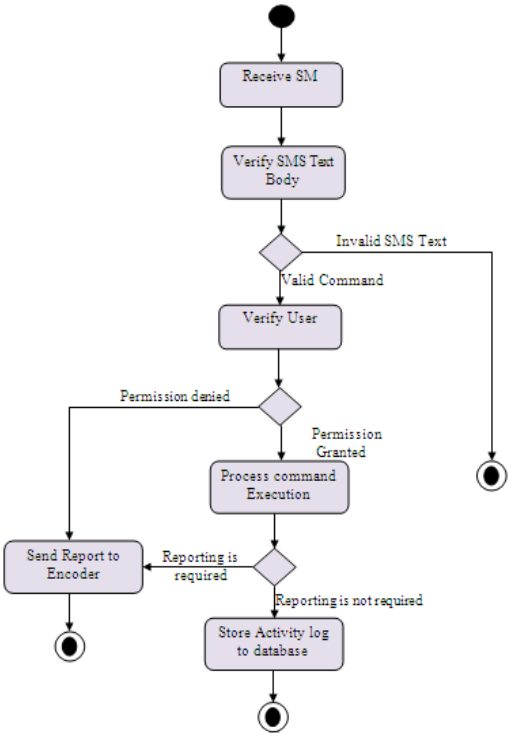

Fig.2. Flow of System

V. ADVANTAGES

Accessible- Instructions can be sent to the computer to be controlled and monitored from any location if there is the existence of an active GSM network.

Portable–SMS facility is used to send the messages to computer. Considering the fact that most GSM phones support SMS, the system is therefore highly portable.

Timesaving-An SMS based remote monitoring and computer Control system saves time as the user is not required to Gain access to an internet connection or make a dedicated Connection to the computer to be controlled as opposed to a Bluetooth-based system or an Internet based system.

Cheaper–SMS facility provided by service providers has cheaper costs and they don't charge customers for receiving SMS.

VI. CONCLUSION

In this paper we have focused on introducing a secure, accessible, and remotely controlled solution for automation of computer operations and security using the SMS-based system. The system is extensible and many computer operations can be automated by writing batch scripts and scheduling them to be executed upon receiving particular SMS instructions. As GSM technology has proved to be a capable solution for remote control and security and is cost-effective when compared with other alternatives such as an Internet connection.

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