GSM Based LAN Checking Framework

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Abstract— **The Project "GSM Based LAN Monitoring System" Nowadays, android phones are used for various applications. We can use Android phones to monitor the network. It is to monitor the network when the network admin is in the administrator's office but it is so difficult to monitor the network system from outside the office. It is an integrated software solution that allows a network admin to remotely monitor his LAN network by his Android cell phone with Graphical User Interface.**

The main purpose of this application is to monitor the LAN without using the internet. We are using GSM and Arduino to connect the mobile phone to the LAN server.
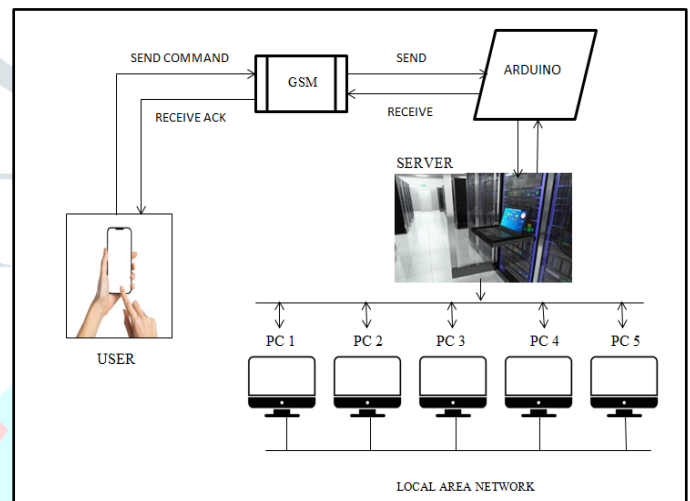
KEYWORDS: **GSM, LAN, SMS.**

Figure 1. System Architecture

I. INTRODUCTION

When a user leaves the workplace or leaves the station, the main goal of our programmer is to monitor and control the LAN over a mobile device without the usage of the internet. The world of today is undergoing fast change. "We are a part of the world," to "The world is in our hands." Our project's primary goal is to use an Android phone as a wireless handheld device to remotely operate and monitor the Local Area Network from any location, regardless of distance. Say your office is set up with a local area network. You want to know the status of your local area network while you are at home. You can accomplish this by storing and completing the project on your mobile device. Our civilization is very reliant on technology that is controlled by computers. Nowadays, everyone in society needs a cell phone because of its rapid growth in usage. Therefore, it is simple to control any activity using a mobile device. Our project's main objective is to control and track the LAN status from a cell phone, regardless of location. Let's say we have a LAN setup at home, the business, or the college, and we want to know the status of the LAN while at home or another remote location. We can do this by putting this system tool on a server and sending commands from our smartphones. Mobile devices are widely used in this era of telecom gadgets and have permeated every part of life.

II. LITERATURE SURVEY

- Manoj Saini, Shagufta Khan School of Electrical, Electronics & Communication Engineering, Galgotias University, Greater Noida, and India have introduced "GSM Based Fuel Theft Detection". In the event of fuel theft, the system notifies the owner of the car and activates the alarm built into the system utilizing the buzzer. Fuel security is of utmost importance to the community, and as a result, the paper was acknowledged due to the rising number of fuel theft instances present in our nation. By using this car, you can secure yourself no matter where you park it, as long as the GSM network is covered.

- Adela Pop Puscasiu, Alexandra Fanca, Dan-Ioan Gota, Claudiu Domuta, Honoriu Valean, Ovidiu Stan, Liviu Miclea Department of Automation, Technical University of Cluj-Napoca, Cluj, Romania has developed "Data transmission and remote control of Android mobile devices" Today's smartphones have enormous storage capacities, including those for sensitive data like bank accounts, cryptocurrency wallets, and media files. While employing automatic cloud backup services makes recovering the majority of this sensitive data from theft very simple, it may not always be possible to recover all the data that has been lost along with the device.

- Aaqib Raza, Mazhar H. Baloch, Shafqat Hussain, Muhammad Zeeshan Malik, Irshad Ali, Sibghatullah,

Absar Ali, Dinesh Kumar, Aftab Ali Dept. electrical engineering, Khairpur, Pakistan has developed "A Home Automation Through Android Mobile App By Using Arduino UNO" Home automation is one of the ways that everyone may improve their lives at home by using this motorized technology; it lessens human work and stress, is energy-efficient, and saves time, creating a smart house. The advancement of home automation and smart home technologies has been astounding in the past and will continue to do so in the future as their needs, demands, and advantages increase.

- Pavit Kiartsilapin, Worapong Sawangsri Department of Mechanical Engineering, Kasetsart University, Bangkok, Thailand "Design and Development of Remote Controlling System for the Demo Sit" which contents the development of today's technology has played a key part in making modern human life more practical, accessible, secure, and effective. Industrial Internet of Things (IIOT) is one brilliant new technology example that illustrates emerging industrial technology. The ability of any machine gadget to connect to the internet and share data with one another for customer needs is significant.

- T. Mahara Jothi, A. Periyanayaki, R. Srimathy, M. Vinotha, G. Gopika Department of Electronics & Communication Engineering, Kamaraj College of Engineering and Technology, Tamilnadu has developed "GSM Based Home Environment Monitoring System" they mentioned that The home appliances are managed and controlled by a GSM module and a microcontroller. The system will use sensors to continuously monitor the appliances, and the controller will respond adaptively by turning on and off the AC, lights, fans, and other appliances as needed. Also, if a fire is detected within the house, the user will receive an alarm message.

- Pang-Wei Tsai, Chun-Wei Tsai, Chia-Wei Hsu, Chu-Sing Yang "Network Monitoring in Software-Defined Networking: A Review" has developed As it allows network operators to analyze a network's behaviour and the condition of its components, monitoring is an essential idea in network management. Decision-making in the areas of traffic engineering, quality of service, and anomaly identification also depends on monitoring. For tasks involving network provisioning and management, software-defined networking (SDN) is growing in popularity. This paper provides an overview of SDN monitoring advances as well as a survey of the tasks and difficulties related to SDN. There are also discussions on other design ideas, future research directions, and outstanding problems.

- Ibrahim Ghafir , Vaclav Prenosil , Jakub Svoboda, Mohammad Hammoudeh, "A Survey on Network Security Monitoring Systems" has developed Network monitoring is a difficult and demanding task that is a vital part of a network administrator's job. Network administrators are constantly striving to maintain smooth operation of their networks. If a network were to be down even for a small period of time, productivity within a company would

decline, and in the case of public service departments the ability to provide essential services would be compromised. There are several approaches to network security monitoring.

- Jan Nádvorník; Pavel Smutný Department of Control Systems and Instrumentation, VSB - Technical University Ostrava, Ostrava, Czech Republic has

developed "Remote control robot using Android mobile device" the development of a mobile application for the Android platform that focuses on Bluetooth wireless technology for manual control of mobile robots. The application enables voice or display interaction control for the robot. Using a graphical display, we can keep track of how close the robot is right now to obstacles. A front-mounted ultrasonic sensor uses this technology to estimate distance. For the creation of the application, a mobile robot prototype has to be built. The differential gear is the foundation of the mobile robot's prototype.

III. PROBLEM DEFINATION

We have found in our college that whenever teacher is absent in the college and students wants such file that is only know by them where it is stored. So, we thought of monitoring PC from anywhere through the mobile phone without using the internet.

IV. EXPERIMENTATION AND METHODOLOGY

1. Hardware Appliances:

- **Global System for Mobile Modem:** A GSM modem is a particular kind of modem that works through a mobile operator subscription and accepts a SIM card, just like a mobile phone. A GSM modem resembles a mobile phone from the standpoint of the mobile operator. When a GSM modem is linked to a computer, the computer can communicate over the mobile network using the GSM modem. Although mobile internet connectivity is the most common usage for these GSM modems, many of them may also be used to send and receive SMS and MMS messages. A GSM modem can be a standalone device that connects through serial, USB, or Bluetooth, or it might be a mobile phone that offers a GSM modem.

- **Arduino:** An open-source electronics platform called Arduino is built on simple hardware and software. A motor can be started, an LED can be turned on, and something may be published online by using an Arduino board to receive inputs like light on a sensor, a finger on a button, or a tweet. Sending a set of instructions to the board's microcontroller will instruct your board what to do. You achieve this by using the Arduino Software (IDE), which is based on Processing, and the Wiring-based Arduino Programming Language.

Different types of microprocessors and controllers are used in Arduino board designs. The boards have a variety of extension boards (called "shields"), breadboards (for prototyping), and other circuits that can be interfaced to the sets of digital and analogue input/output (I/O) pins on the boards. The boards have serial communications interfaces, some of which support USB (Universal Serial Bus), which are also used to load programs.

2. Software Design

- **Android:** A software suite and linux-based operating system for mobile devices like smartphones and tablet PCs is called Android. Google and the OHA (Open Handset Alliance) created it. Although other languages may be utilized, the Java language is primarily used to write the android code. It can be compared to an operating system for mobile devices. However, it is not just applicable to mobile. Various devices, including smartphones, tablets, televisions, etc., currently use it. The technology is open source, though, so anyone may use it for anything they want, including for profit.

- **Mobile Application:** Instead of being designed for use on desktop or laptop computers, a mobile app (or mobile application) is a software program created expressly for use on small, wireless computing devices like smartphones and tablets. Mobile apps are a crucial component of most people's everyday life in the current digital era. Mobile apps are essential to how we connect with technology across social networking, entertainment, business, and productivity. Specific mobile operating systems, such as iOS, Android, and Windows Phone, are required for certain mobile apps to function. When a mobile app is downloaded and installed on a device, its memory is retained, and the operating system of the device is used to launch it. A mobile app communicates with the device's operating system when a user launches it.

V. ORGANIZATION OF WORK

In the below fig. work of project is from below block diagram user sends Short Message Service to the server through Global System for Mobile modem(GSM). In Short Message Service there is file name, machine name and operation to be performed is mentioned. After receiving SMS from user server identifies client computer. The incoming/outgoing message is parsed and specified operation is performed on the identified client computer and the server computer response is given back in same manner

Figure 2. Block Diagram

User: The user on their mobile pass the command in their application to the client's computer through the server. After performing the command on the client's computer user receives the SMS.

Server: The server has total control over the LAN and monitors it. It receives a command from the user and sends it to the Client computer and it sends the response back to the user through the SMS. The server is the middleware of the user and client computer.

Client Computer: The client computer present in the LAN receives the command from the server and according to the command it works. And give a response back to the server.
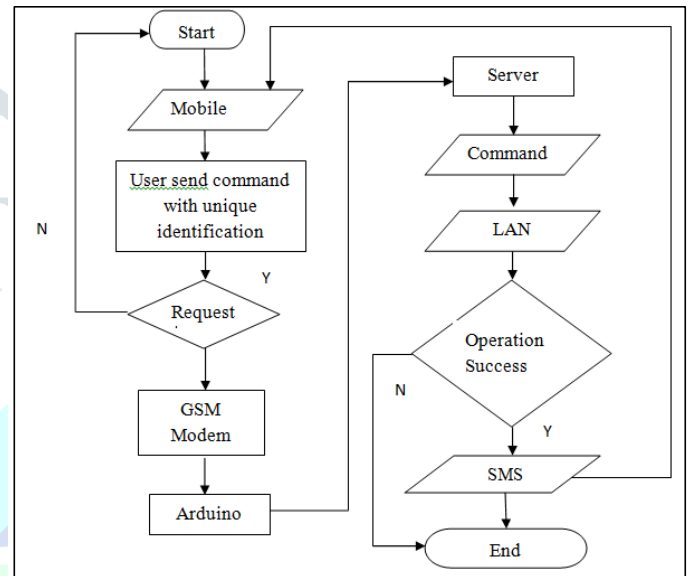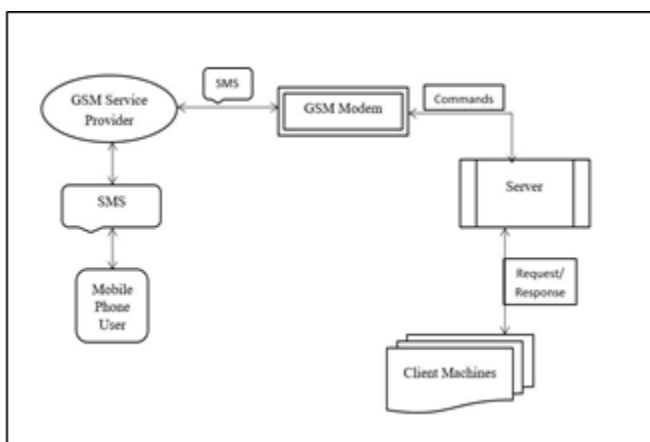
FLOW OF PROJECT:

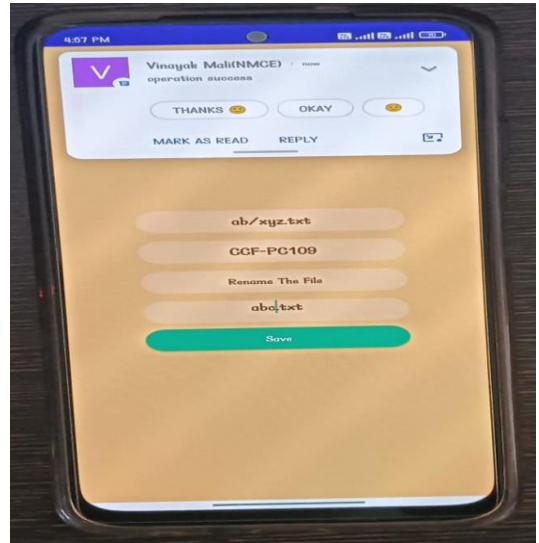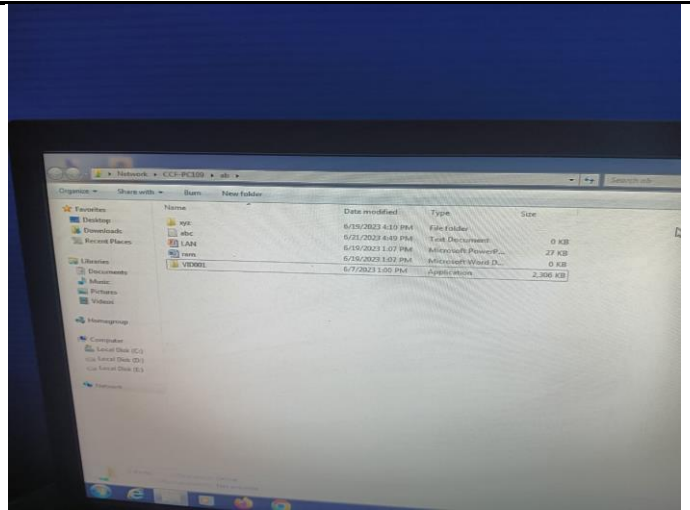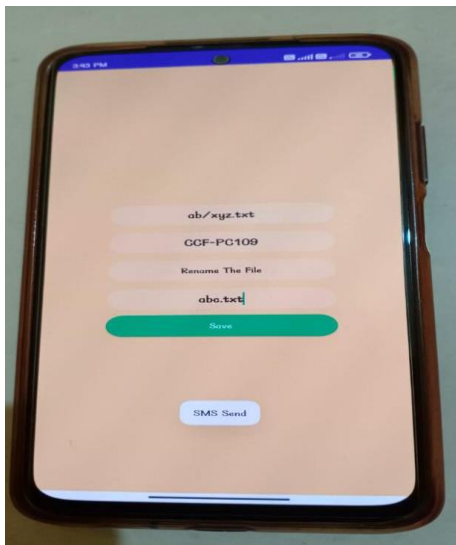**Figure 3. Flowchart**

VI. OBJECTIVES

- Access Machine Remotely without Internet.

- Send Message when operation is done

- To configure the GSM Module

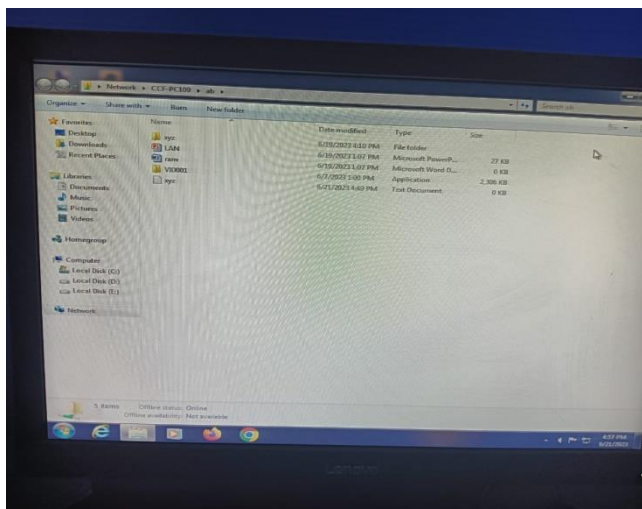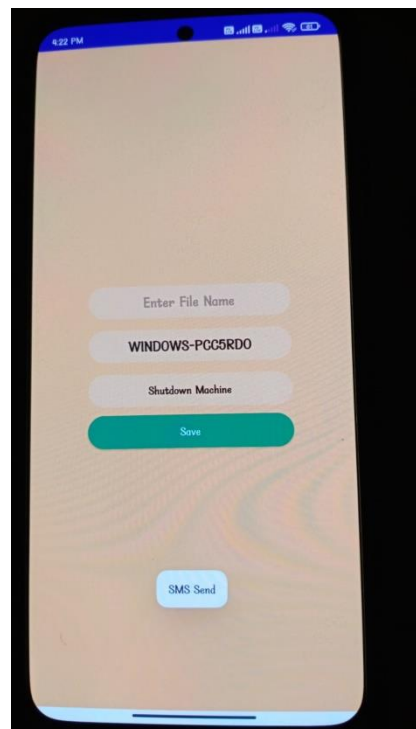- To register the machine.

VII. APPLICATIONS

- LAN monitoring is used in university/college.

- We can use in Company.

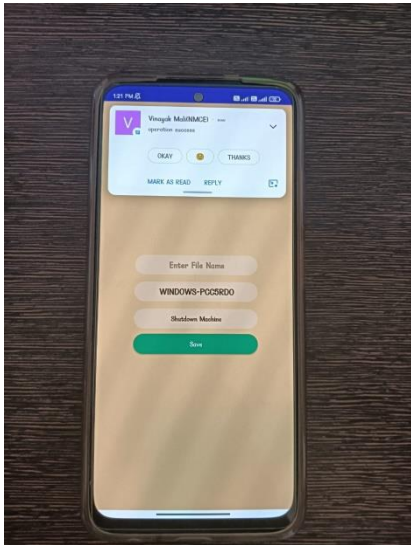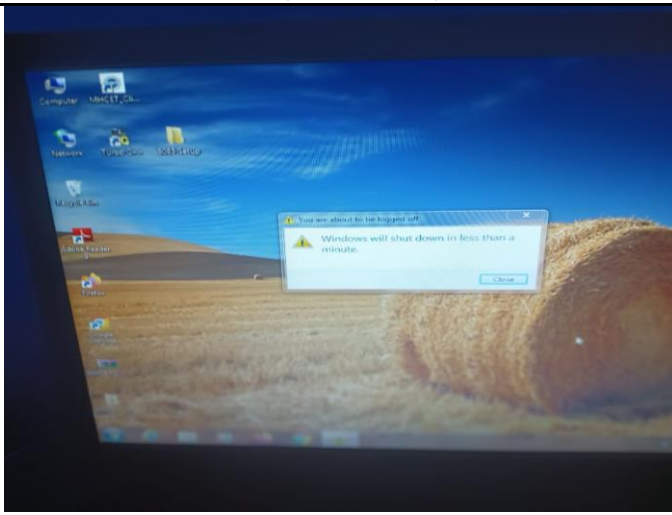- We can use it for Business purposes.

VIII. RESULT AND DISCUSSION

Rename File:

Shutdown PC:

II. CONCLUSION

In this project of "GSM Based LAN Checking Framework", we have concluded that we can run any commands like:- rename the file, delete the file, copy the file, delete the file, restart the PC, and shut down the PC via a mobile phone, sitting anywhere.

III. REFERENCE

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