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Research Article

GSM Based SMS Driven Automatic Display Notice board

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Abstract: Since the time the development of the cell phone just as SMS innovation and the two-way informing arrangements it gives a few imaginativearrangements have advanced on the best way to apply this innovation to upset the ways of life and to take care of different issues related withmanual control framework. Controlling home and office apparatuses paying little heed to existence is a genuine test confronting the presentreality. The present generation is living with the digital world and we are preferring things to be smart and reduce the human burden. we except the correct information should be informed about updates at the right time. That is why we are introducing a useful and important GSM-basednoticeboard for this trend. This noticeboard will help us getting the right/correct information from an authenticated person at anytime fromanywhere within no time. Mainly there is no place limitations to hinder the transfer of information. This will help in academic institutes, students, teachers, and other staff could be informed about Announcements and there will be no chance of missing any important news.to make it happen easily we have designed an Advance noticeboard that can display information on liquid-crystal display(LCD) as well as it will send a notification (SMS) to all the registered users

Keywords: GSM (Global System for Mobile Communications), SMS (Systems Management Server), LCD (Liquid Crystal Display)

1. Introduction

The mushroom development of innovation has transformed world into worldwide town Globalization has gotten conceivable because of innovation. World is moving towards digitalization. It isn't inappropriate to say that worldwide town has become advanced globe town. Digitalization can be found in type of phones, PCs, tablets, computerized word references, advanced security frameworks, adding machines,computerized TVs and a lot more things, the rundown is uncountable. Correspondence is the way toward moving data People ought to be furnished with right data at ideal time, without loss of any information. Flawlessness is significant for the beneficiary of the message being moved. In this advanced period the GSM (Global m this arrangement of versatile correspondence) innovation is spreading is moving increasingly more consistently.

India is at present the world's second-biggest broadcast communications market with an endorser base of 1.18 billion. India's developing portable economy presently establishes about 98% of all phone memberships.

The nation has 1174.66 million phone associations. There are 1154.39 million remote phone associations.

This has been featured in Annual report 2019-20 by Department of Telecommunications Ministry of Communications Government of IndiaNew Delhi. [1]

Telecom Authority, GSM innovation is the quickest method of correspondence. Consequently, almost certainly that the thought GSM based progressed noticeboard show emerges from GSM innovation. This digitalized noticeboard would be an exceptional route through which data or warnings could be passed on to understudies, instructors or some other individual of the foundation This GSM based saves time and it gives data refreshed on it anyplace on the planet required. As of now we have chosen to go with following segments:

Arduino Uno (As a showcase Controller)
Arduino Mega (as the principle/focal regulator)
GSM modem SIM 900 A

SD Card (For information base)
LCD show

This specific Noticeboard show the message on LCD screen as well as communicated the message to the endorsers. He/she needs to send message to the data set by means of SMS and he/she will get bought in. Thus he/she gets all the data in hands.

1.A microcontroller board (a small computer built on a semiconductor chip) consist of the central processing unit(CPU), memory, and input/output peripherals, which can be adjusted and connected with the system without any predefined plan and execution. we can easily change according to one's need Fig.1

The Arduino UNO is a microcontroller board subject to the ATmega328p.It is of 5v Operating Voltage 6V-20V input voltage with 16 MHzclock speed,32 KB flash memory,2 KB SRAM,1 KB EEPROM, 24 digital io pins (6 among that produce PWM), 6 analog input pins and a reset button.

GSM Modem-RS232 will work with dual-band GSM (SIM900A MINI V3.8.2). Works on frequencies 900-1800 MHz.it has an RS232 interface, the partner PC licenses will be similarly as a microcontroller with RS232 Chip(MAX232) The baud rate configurable is 9600-115200 through AT request. The GSM Modem is having an inward TCP/IP stack to communicate through GSM. Using GSM we canSEND SMS, GET SMS and we can also call. All this is done using AT command's Fig 2, Fig 2.1 and Fig 2.2

Secure Digital, formally truncated as SD, is an exclusive non-unpredictable memory card design created by the SD Association for use in convenient gadgets. The standard was presented in August 1999 by joint endeavors between SanDisk, Panasonic and Toshiba as an improvement over Multi-Media Cards, and has become the business standard.

The term fluid gem is utilized to depict a substance in a state among fluid and strong however which shows the properties of both. Particles in fluid gems will in general organize themselves until they all point in a similar explicit direction. This game plan of atoms empowers the medium to stream as a fluid. Contingent upon the temperature and specific nature of a substance, fluid gems can exist in one of a few particular stages. Fluid precious stones in a nematic stage, in which there is no spatial requesting of the atoms, for instance, are utilized in LCD innovation. One significant component of fluid gems is the way that an electrical flow influences them. A specific kind of nematic fluid precious stone, called curved nematics (TN), is normally contorted. Applying an electric flow to these fluid precious stones will untwist them to differing degrees, contingent upon the flow's voltage. LCDs utilize these fluid gems since they respond typically to electric flow so as to control the entry of light.

2. Literature Survey

Noticeboards are a significant piece of any instructive establishment however ordinarily utilized Manual or old wooden Noticeboards are not valuable enough and dependable to pass pertinent data to everybody. It turns out to be excessively untidy and excessively hard for clients todiscover applicable, new or refreshed data. For the most part clients track down the significant data after due dates on wooden notification sheets. Not just clients experience issues in getting pertinent data yet additionally the Authority needs to deal with issue in refreshing data routinely on notice sheets.

Creators in [3]. [4]. [5] utilized GSM [6] innovation and straightforward 16x2 Character LCD to show data on LCD screen utilizing a basicSMS Benefits of this framework are that the notification are refreshed effectively with simply a SMS by a validated individual, from anyplace on the planet. How-ever there was an impediment in those framework that there must be each message to be shown in turn and clients would need to check the Noticeboards over and over routinely for refreshed data

Also, a few creators have made GUI programming utilizing nearby data set .so here the issue is the client needs to introduce the product andsit before PC to refresh the data and parcel other come into thought.

From these Noticeboard or other carried out cutting edge Noticeboard [2], [3], [4], [5] up until this point, have just ability to show each message in turn [3]. [4], [5] and can be controlled through GSM [3]. [4], [5] or LAN [2]. Assuming these Notice loads up are intended to beexecuted in instructive establishments, there will never be each notice to be shown in turn, numerous notification are being shown on old Noticeboards, consequently we need to plan a notification load up that can uphold different notification to be shown at a time,

one by one. There should be a help that understudies or clients can likewise get refreshes any place they are not really inside grounds as it were.

Besides, to defeat such issues and making it more development, we have planned an Advanced Noticeboard show that has different highlights like having ability of putting away various notification, can advise clients through a SMS, no compelling reason to visit Noticeboard withoutfail, simply visit when you truly track down a significant notification, the data about the new notification are communicated by means of SMS to all supporters.

3. Objective

The purpose of the GSM electronic notice board (SMS driven) is to send the updates(Announcements) to the registred user's with correct information at the right time.

Proposed Methodology

The message to be displayed is transmitted through an SMS from the authenticated sender the Aurdino will receive the SMS, displays thesent data after the necessary code conversion.
The main components of the system include a microcontroller, GSM Modem. This system is integrated with the (liquid-crystal display)LCD thus it is wireless features. The GSM modem will receive the SMS. Fig.3

The communication between the user and the system was set up with the help of SMS, utilizing some predetermined watchwords, the numberwill be put away in an information base. at the point when the system gets any SMS, it checks the arrangement of the message, on the off chance that the message is for enrolling a Phone number, the system peruses the rundown from sd card and adds another number, and saves it in the information base. on the off chance that the message is for another message/notice show, system stores that message to sd card andsend data about new notification to every single user, as we cant send images and other posters we have developed a static website where allthe information will be uploaded in detail.

Implementation

We are using Arduino UNO, which consists of an LCD monitor, SIM900A GSM Module and SD Card for database. These will have multiplefeatures, including storing of messages, support multiple subscription lists one for students and other for the admins .and to send the alerts upon new information added to it. Fig.4

4. Figures

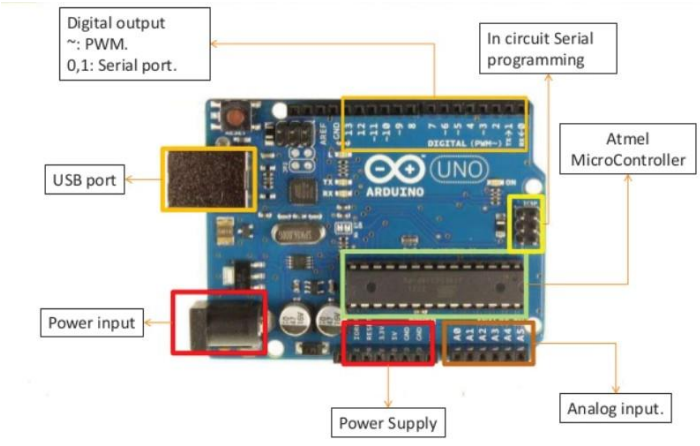

Fig.1 : Arduino UNO

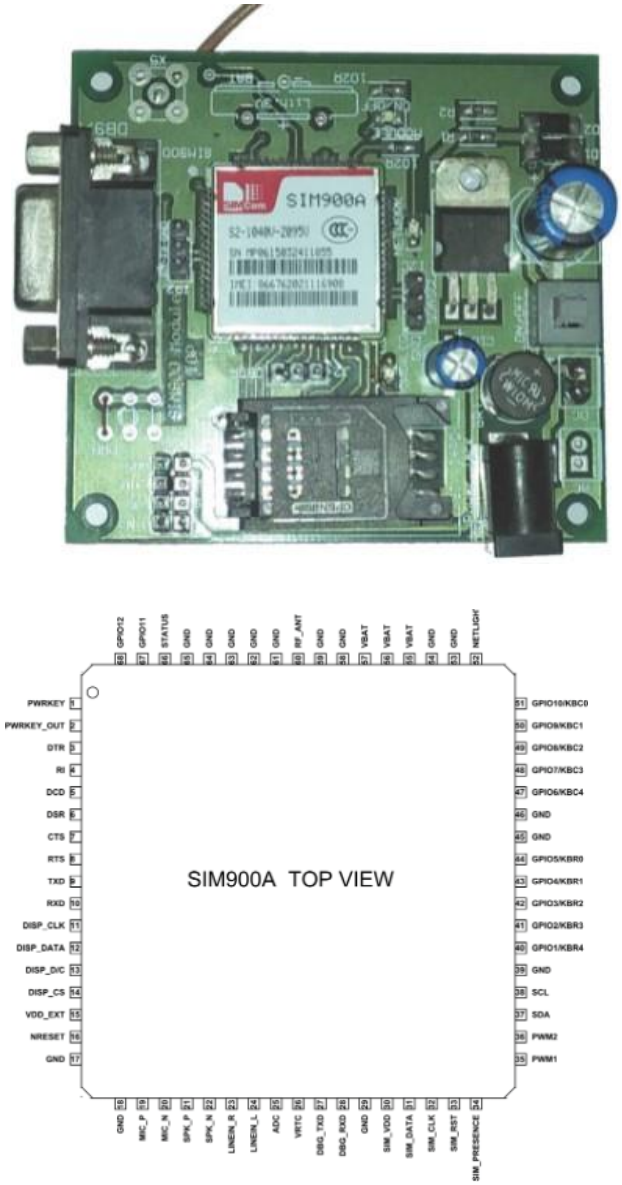

Fig.2: SIM900A GMS Module

Image Source : Internet

Fig.2.1: SIM900A GMS Module Pinout

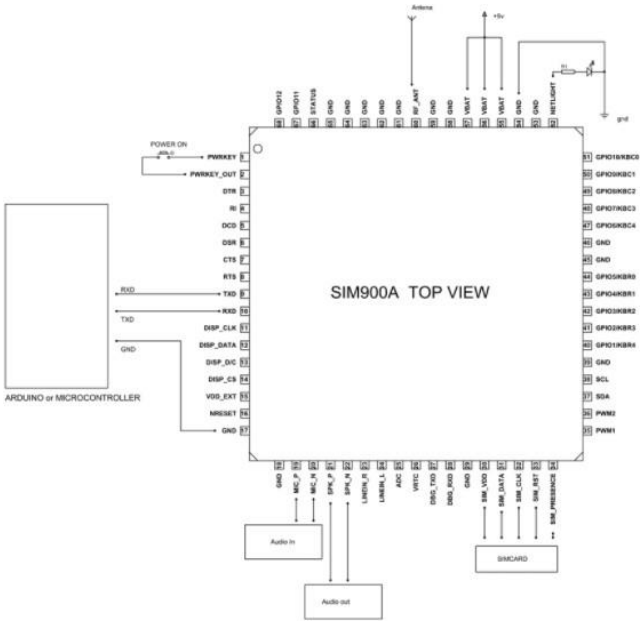

Fig.2.2 : SIM900A TOP VIEW

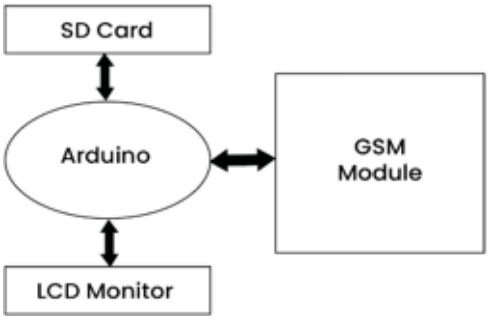

Fig.3 : Connections

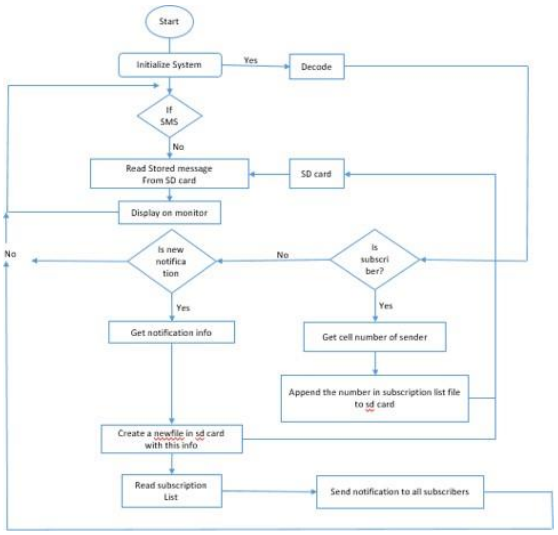

Fig.4 : Flow Chart

5. Hardware & Software Specification

Arduino UNO R3
GSM modem SIM 900A
SD card and SD card module
LCD Display 16x2
SIM card
Jumper Wires
Mobile Phone

6. Conclusion

By Implementing the designed system students as well as teachers get up-to-date information to there registerd mobile number, this is costfriendly and simple technology is used to create it.

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