

Wireless Electronic Display Board using GSM Technology

Mr. Vikram Shinde , Mr. Vishal Bhope

Abstract— This paper proposes an innovative rather than interesting manner of utilization of the message to the people using a GSM based wireless electronic display board which is well integrated with GSM technology. This will help us in sending any message almost with in fraction without any delay just by sending a SMS which is far better and more efficient and reliable than the orthodox way of pasting the message over notice board. This proposed embedded system can be utilized in many public places, shopping malls or huge buildings to improve the security system as well as to make awareness of the emergency situations and avoid many dangers incidents. With the help of AT commands it is possible to display the message onto the Notice board. GSM technology is used to access the display board and for forwarding the data through a message sent from authorized user.

Index Terms—GSM,AT commands, Notice-board

I. INTRODUCTION

A notice Board is a place where an authenticated authority can leave public messages to advertise things, announce events or provide information of general concern for any important issue. Traditional analog notice boards are usually made of cork, timber or aluminium, which facilitating the addition and removal of paper messages. But some shortcomings make this analog notice board unpopular in general. Ascribed personnel are always needed to change any notice or originate a new one. Also, multiple people gather, struggle and cluster in front of a single traditional notice board for information in case of any urgent notification. Sometimes malicious intentions of any persons can manipulate, remove or perish paper notices attached in a board, leaving other people uninformed. If the boards are placed in busy places, e.g. near entrances or exit points, then a busy person does not get enough time and scope to access and read all the informations posted on a notice board. It become more problematic when no digital printout is possible. One other disadvantage is that these traditional boards often get dirty, having wear and tear on notices and an unorganized pattern, which make the notice board quite impossible for users. The main aim of this paper is to design a SMS driven automatic display Board which can replace the currently used programmable electronic display and conventional notice boards. It is proposed to design receive cum display toolkit which can be programmed and later be used from an authorized mobile phone. The whole process can described from the block diagram in Figure 1. The GSM modem

receives a message from the authorized mobile phone and the message is extracted by the microcontroller from the GSM modem and is displayed on the LED display board. Serial communication is used for the entire process from GSM module to Microcontroller and from microcontroller to the LED display. The three devices are powered by the same power supply . This proposed system in this paper has many upcoming applications in educational institutions and organizations, crime prevention, traffic management, railways, advertisements etc. Been user friendly, long range and faster means of conveying information are major bolsters for this application. By using this proposed methodology we can enhance the security system and also make awareness of the emergency situations and avoid many dangers.

II. LITERATURE REVIEW

In paper' Display Message on Notice Board using GSM' by Foram Kamdar, Anubhav Malhotra and Pritish Mahadik ,published in Advance in Electronic and Electric Engineering.

ISSN 2231-1297, Volume 3, Number 7 (2013), pp. 827-832, it indicates that " Notice board is primary thing in any institution or organization or public utility places like bus stops, railway stations or parks. But sending various notices day to day is a tedious process. This paper deals with advanced notice board.

It shows an SMS-based notice board gathering the widely used GSM to serve the communication of displaying message on notice board through an user's mobile phone. Its operation is based on microcontroller ATMEGA32 programmed in assembly language. A SIM300 GSM modem with a SIM card is interfaced to the ports of the microcontroller with the help of AT commands. When the user sends a SMS via a registered number from his mobile phone, At receivers end it is obtained by SIM300 GSM modem. SIM300 is regularly interfaced through a level shifter IC-MAX32 to the microcontroller. The messaged is thus fetched into the microcontroller. It is further displayed on an electronic notice board which equipped with LCD display interfaced to microprocessor powered by a regulated power supply from mains supply of 230 volts ac.

This project is our experiment on real time noticing."[1]

In paper 'Wireless Electronic Notice Board Using GSM Technology' by Masood Khan, Pratik Bhosale, Sandesh Dalvi ,published International Journal for Research in Applied Science & Engineering Technology (IJRASET) ,it states that With the advancing technology nowadays, the wireless communication is proving its importance in each and every field of today's era. This paper focus with use of one such wireless technology like GSM for controlling electronic notice boards using LPC2148 microcontroller IC.

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Mr. Vikram Shinde, E&TC department, PuneUniversity / Raisonii college, Chas,Ahmednaga, e-mail: pravin.bavdhankar@gmail.com.

Mr. Vishal Bhope, E&TC department, PuneUniversity/ Raisonii college, Chas,Ahmednaga, (e-mail:vishal.bhope@raisonii.net).

The proposed system is a combination of hardware as well as software. The

hardware module constitutes of GSM modem, computer interface, microcontroller, monitoring system, and LCD and GLCD display. The software module also contains MATLAB based GUI (Graphic User Interface) so as to observe the information to be displayed on notice board efficiently as well as enter in the notices through the computer were the GUI is been used."[2]

In paper 'Digital - Notice Board ' by Jaiswal Rohit , Kalawade Sanket , Kore Amod , Lagad Sanket,published in International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 4 Issue 11, November 2015 ,it states that " Notice board is the one of the best medium to communicate with the mass media. Notice boards are basically used at the public utility places. The project, GSM Supported e-Notice Board is an SMS-based and Android-driven Digital display board system, designed to improve the noticing processes by using GSM. The proposed system will avail an user to display notices from anywhere with the help of user's Android mobile phone, wirelessly. Android application provides security to the system. User sends the notices by SMS, which is received at GSM modem and display on LCD notice board. This project is our experiment on real time noticing. "[3]

In paper 'Electronic Notice Board for Professional College ' by Anushree S P, Divyashree V Bhat, Moonisha G A, Venkatesh U C,published in International Journal of Science, Engineering and Technology Research (IJSETR), Volume 3, Issue 6, June 2014 ,it states that " Many state-of-the-art and cutting-edge universities in the world rely on wooden notice board hanging on the wall to display announcements. The effect of this practice in an university or institutions is still not enough to pass relevant information around as many problems are encountered. We focus on the case study of institutional Colleges, where information and data is a vital key for knowing the updates of the campus. The goal of this paper is to provide the access to notices and articles quickly not only within the college premises, also wherever and whenever they need to know. Also it observes at the development of the present notice boards, making it run by the internet access or by local area network (LAN) so as to increase the rate at which relevant information is being disseminated to the public with no location restriction. The main strength of the Electronic Notice Board implemented, which is basically an online web application is that, its usability is fully capable of passing relevant notices and announcements, and keeping the users updated from time to time. The user is kept updated each time the E-Notice Board is uploaded based on their preferences with respect to the departments and categories through a SMS. Also the users can view and observe the articles and notices from anytime and from anywhere by opening the web application E-Notice Board which is available online and this makes our project highly efficient and effective. "[4]

In paper 'GSM BASED WIRELESS NOTICE BOARD ' by Abhishek Gupta, Rani Borkar, Samita Gawas, Sarang Joshi,published in www.ijtra.com Special Issue 40 (KCEMSR) (March 2016), PP. 30-33 ,it states that " Various notices has been displayed in schools and various institutes over the years by using manual notice board and different methods which has been developed in the past. This paper represents the construction and design of E-notice board by using GSM technology. The system consists of four

basic units: GSM modem, Raspberry pi board, LCD monitor and Mobile device. The operation of the system is centered on Raspberry pi board. The operation of system is such that the notice which is to be displayed is send by the mobile device to the GSM modem and displayed on the LCD monitor using Raspberry pi board. The system is based on real time process and saves lot of resources i.e. human effort and mainly paper thereby saving world from global warming. "[5]

In paper 'Password Protected Multiuser Wireless Electronic

Noticing System by GSM with Robust Algorithm' by Sayidul Morsalin, Abdur Rahman ,published in Proceedings of International Conference on Electrical Information and Communication Technology (EICT 2015),it states that This paper elucidates a wireless digital noticing system to provide information in an innovative and smart way. The proposed notice board is a multiuser password-protected SMS based system fabricated with an LCD. The communication and information transfer between the authentic user and the LCD display unit is done via GSM to ensure remote display facilities, so any notice can be displayed on the electronic board from the user's mobile SMS from distant places. To ensure system flexibility, a multiuser noticing and displaying system has been implemented in the system which can display several notices simultaneously. In addition, the user also can print any notice which is of concern to them. The total system is designed with simple logic with a robust algorithm and fabricated with a PIC midrange microcontroller, LCD, GSM module and other commercially available electronic devices to ensure efficiency and reliability with less cost."[6]

III. SYSTEM DEVELOPMENT

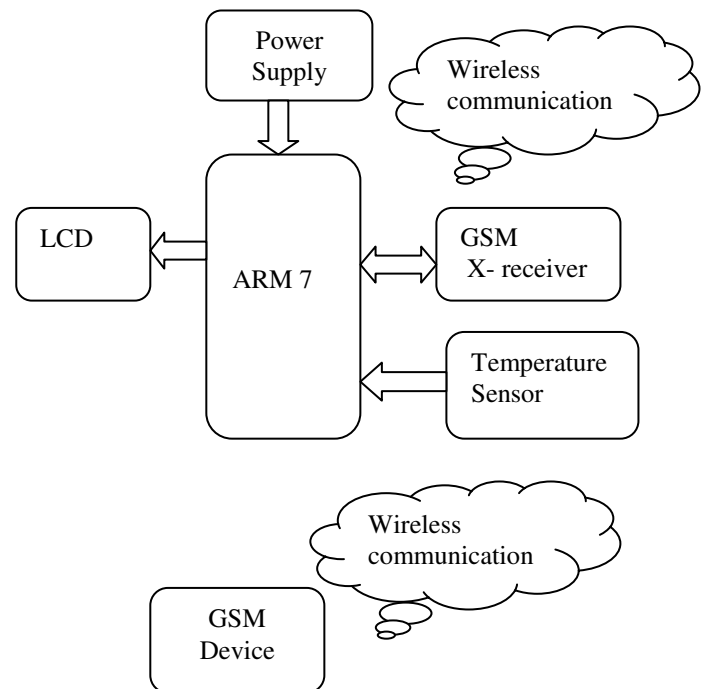


Figure. 1

As shown in Figure. 1 ARM-7 is used as a main controller which is used to control , monitor and convey information between sub units connected to entire proposed system. Here

GSM 900 A is used as trance-receiver section to ARM 7.it can be connected via Mx232 or directly to the ARM-7.The function of GSM is to receive message to be displayed on notice-board, received from authorized person only. As shown in figure LCD display is used to display message received from GSM technology. Temperature sensor can be connected to ARM-7. in case of absence of any message from GSM technology the notice board can be utilized to display temperature value. Here the authorized person can send message through any GSM device to Noticeboard.

IV. FLOW CHART

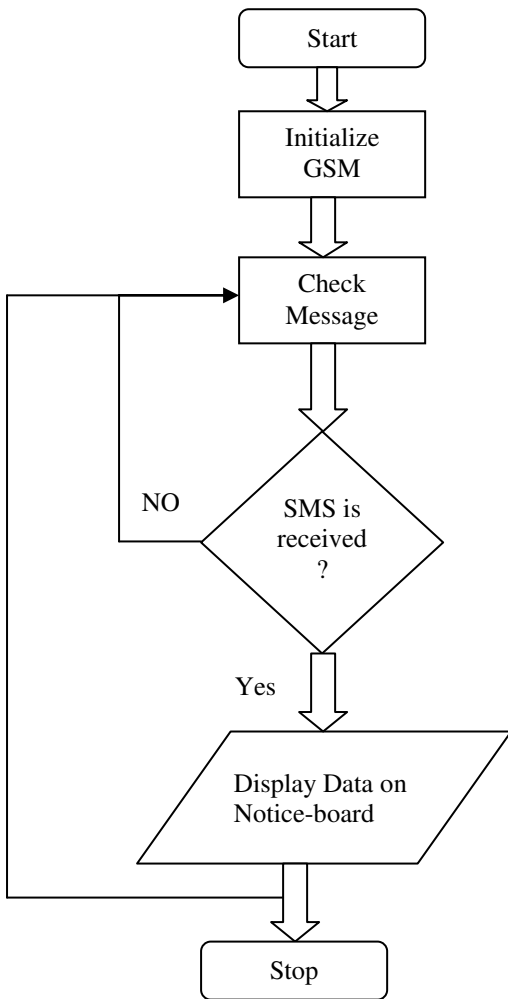


Figure. 2

V. CONCLUSION

The proposed system has been successfully implemented and it is working properly. It is been observed that required time to execute all system is vey minimum. it is going to be first step towards the efficient notice board research. the Implemented system at the moment looks better and efficient than existing system.

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Mr. Vikram Shinde has completed his bachelor of engineering in Electronic and telecommunication. now he is pursuig Master of engineering in VLSI and Embedded system from Raisonni college of engineering,Chas,Ahmednagar in Savitribai Phule,Pune University

Mr. Vishal Bhope has completed his Master of engineering in Electronic and telecommunication. now he is working as an Assistant professor at Raisonni college of engineering,Chas,Ahmednagar in Savitribai Phule,Pune University