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GSM Based Prototype Implementation of Digital Notice Board

R.Gayathri[1], P.Indhumathi[2], P.Janani[3] and S.Rajan[4]

[1,2,3]*Final year ECE Students, Velalar College of Engineering and Technology, Thindal.*
[4]*Asst.Prof. (Sl. Gr.), Department of ECE, Velalar College of Engineering and Technology, Thindal.*

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ABSTRACT

Notice boards are essential to promote important information to a large number of people. These are used in organizations, institutions and in public places. A separate person is required to stick the notices on the notice board. In order to avoid that, a new technique called GSM based digital notice board has been introduced. By using this technique the user can add, remove or alter the information at any time. This information will update the LCD display through wirelessly.

Keywords: Arduino, GSM, LCD, Mobile Phone.

1. INTRODUCTION

A notice board is essential in any organizations, Industries institutions, public places like railway stations, parks, shopping malls, bus stands. A manual operation is required to update the information in the notice board day-to-day. It is time consuming method. To overcome these problems GSM based digital notice board system is proposed. The main aim of this paper is to replace the conventional board into electronic display boards.

In this system, GSM module is used for wireless communication between mobile as well as controlling unit. The display units are capable of displaying any kind of messages including characters and numbers. Software like Embedded C for programming is used to control microcontroller. The Motivation behind this paper is to reduce the manual work and to minimize the over usage of paper in institutions for printing notices.

If the information is displayed electronically, it would reduce the usage of paper. By introducing wireless technology, the communication is more efficient and faster. This is an effective technique to display the message on notice board.

2. EXISTING SYSTEM

In an existing system updating notices on the notice boards using papers are time consuming and also there is wastage of paper. A new hardcopy is required to renew the notice. A separate person is required to take care of these notices daily.

3. PROPOSED SYSTEM

In this proposed system, this paper is to develop a GSM based notice board whose contents can be updated simply through an SMS which is realized through an embedded system with the microcontroller.

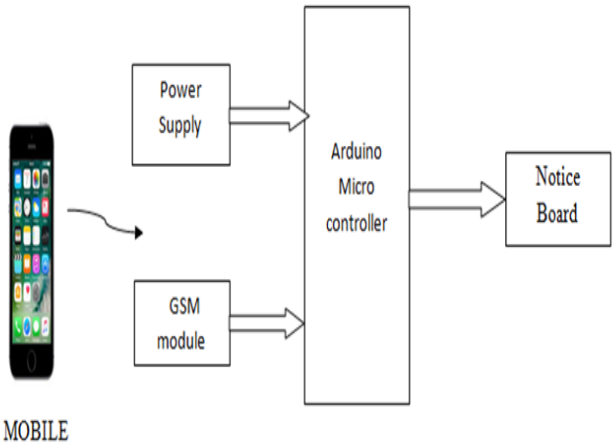

Fig 1: Proposed system block diagram

4. ARDUINO

Arduino is designed as an open source hardware and software company and single board microcontrollers are designed to build digital devices that sense, control and interactive objects in the physical world. Anyone can permit the manufacture of Arduino boards and software distribution under the license of GNU Lesser General Public License (LGPL) or GNU General Public License (GPL). The preassembled form of arduino microcontrollers is commercially available. The Arduino microcontroller is shown in Fig 2.

Fig 2: Arduino Microcontroller

Fig 3: GSM Module

5. GSM MODULE

In December 1991, the European Telecommunications Standards Institute developed GSM (Global System for Mobile Communication) to provide digital cellular network used in mobile devices to describe the protocol for the second generation. The first generation analog cellular networks are replaced by 2G networks for optimization of full duplex voice telephony which is described as a digital, circuit- switched network. The GSM module is shown in Fig 3.

6. LCD DISPLAY

The light- modulating properties of liquid crystals are used in a liquid–crystal display(LCD). It is designed as a flat -panel display or other electronically modulated optical devices that can be displayed or hidden, fixed images with low information content like digits, 7-segment displays, as in a digital clock. The coloured images are displayed by using backlight or reflector without emitting the light directly. The LCD display is shown in Fig 4.

Fig 4: LCD Display

7. MOBILE PHONE

The Mobile phone is a small portable radiotelephone. It is used to communicate with others. Mobile phone provides a variety of services like SMS, MMS, E-mail, internet access and etc. Advanced computing capability mobile phones are called as smart phones. It covers long distance communication. The mobile phone is shown in Fig 5.

Fig 5: Mobile phone

8. POWER SUPPLY

The electric energy is supplied to an electric load by a power supply, it is sometimes referred to as electric power converters. It converts one form of electrical energy into another. Some power supplies are built into larger devices

along with their loads. The Small size of power supplies are used in desktop computers and consumer electronic devices.

9. RESULTS

The proposed system was fully developed and tested to demonstrate its feasibility and effectiveness. The Fig 6. Shows that sending an SMS in the mobile phone. The Fig 7. Shows that SMS received on LCD board. The Fig 8. Shows that overall setup of the wireless digital notice board.

Fig 6: SMS send in mobile phone

Fig 7: SMS received on LCD board

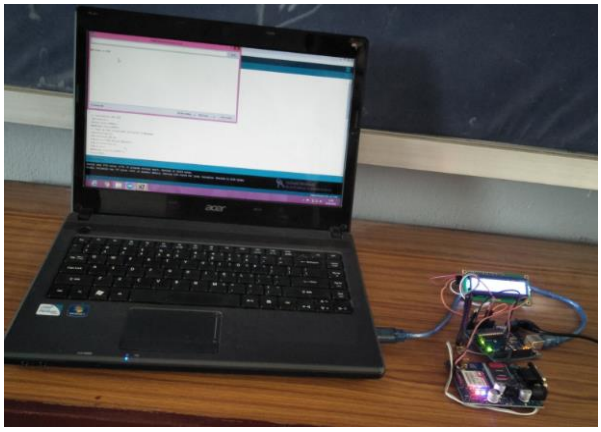

Fig 8: Wireless digital notice board

10. CONCLUSION

This paper is developed using Arduino microcontroller, GSM and LCD successfully. This digital display has very fast, cheap and quick response. This paper concludes by eliminating the usage of papers and manual display of notice board.

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