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Wireless Notice Board Using GSM Module and Arduino Uno

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ABSTRACT : GSM based Wireless Notice board is proposed in this project, the system is attended to be interface with user by using GSM technology with SMS messages, the user can sent the content to be displayed in the SMS and then the message will be display and shifted. The main processing unit used is Atmega328 microcontroller which dedicated with Arduino UNO board, shift registers are used to scroll the text in the screen from right to left, GSM module isused to enable cellular network functionality and SMS feature.

KEYWORDS: GSM Module , Arduino Uno ,16*2 LCD,Mobile phone.

I.INTRODUCTION

Wireless notice board is very selective term for this project, as it has a very wide scope rather than just being a simple notice board. First we should understand the purpose of this project, in this system we can display a message or notice to some display device like LCD, and this message can be easily set or changed from anywhere in the world, just by using the SMS facility of your mobile handset. Whatever notice we want to display, just send the SMS of that text, with some prefix and suffix.This is very useful in Hotels, Malls, college, offices and can be used anywhere, even at home.

1.1 OBJECTIVES:

To display information on notice board using GSM technology.

1.2 CONCEPT :

When we send SMS from mobile phone to GSM module then GSM receives that SMS and sends it to Arduino. Now Arduino read this SMS and extract main notice message from the receivedstring and stores in another string. And then sends the extracted message to 16x2 LCD by using appropriate commands.

II.LITERATURE REVIEW

Wireless communication has announced its arrival on big stage and world is going mobile. As we wish to control everything without moving an inch, notice board needs to have wireless access. Notice board is primary thing in any organization or public utility place like stations, railway station, parks etc. But sticking various notices day-to-day is a difficult process. In present digitalized word, the exploit of GSM and SMS is popular. A new display using the GSM technology to access it by communication between micro-controller and mobile would be effective.

III.METHODOLOGY

In this project we use mobile phone to text the message to be display on the LCD display. Whenever user wants to display the message, user sends the message using his mobile defining the message to the number of the subscriber identity module (SIM) which is inserted in the GSM. The GSM module receives the message. AT(Attention) commands are serially transfer to the GSM from Arduino and then in return the GSM modem transmit the store message through COM port. The Arduino validates the message and then display the message in the LCD display board.

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3.1 **PROPOSED SYSTEM** :

In this project, Arduino UNO is used for controlling the whole process, GSMmodule *(*SIM900A*)* to receive the SMS/message sent from mobile phone and LCD to display the message. Below shows the block diagram of the wireless notice board usingGSM module and arduino uno ;

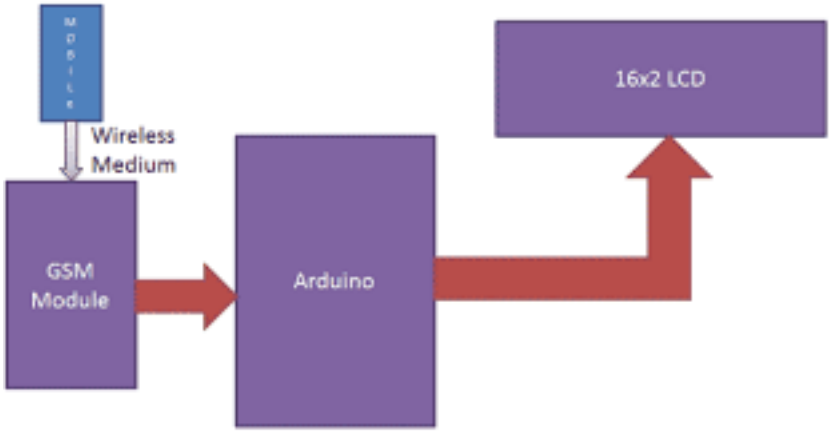

Fig 1: Block diagram of Wireless notice board using GSM module and Arduino.

3.2HARDWARE REQUIREMENT:

GSM based wireless notice board requiresthe following list of hardware :

- GSM module
- Arduino uno
- LCD (16*2)

GSM Module:

InGSM module (SIM900A) to receive the SMS/message sent from mobile phone and LCD to display the message.

The most basic command is “AT”, if GSM respond OK then it is working good otherwise it respond with “ERROR”.

Fig a : GSM Module

ARDUINO UNO:

In this project, Arduino uno is used for controlling the whole process,The Arduino is the brain of the project and GSM module is that heart of the project.

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Fig b: Arduino Uno

LIQUID CRYSTAL DISPLAY (LCD):

It is used for display the "Notice" or message, which is sent though the mobile phone as SMS. Data pins of LCD namely RS, EN, D4, D5, D6, D7 are connected to arduino digital pin number 7, 6, 5, 4, 3, 2. And Rx and Tx pin of GSM module is directly connected at Tx and Rx pin of Arduino respectively. And GSM module is powered by using a 12 volt adaptor.

Fig C:Liquid crystal Display

3.3 SOFTWARE USED:

- **ARDUINO IDE SOFTWARE**
- **AT COMMANDS**

ARDUINO IDE SOFTWARE :

Arduino consists of a physical programmable circuit board(know as a microcontroller) as well as software.The Arduino Integrated Development Environment (IDE) is a cross-platform applicationthat's runs on computer with the help of software.it is used is used to write and upload programs toArduinocompatibleboard. Program written the on the arduino software (IDE) are called sketches.

AT COMMANDS:

Hayes commands starting with 'AT' or 'at' are called AT commands.AT commands("AT " meaning 'attention')are The instruction used to the modem. There are two types of AT commands. Basic commands and extended commands.

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IV.RESULTS

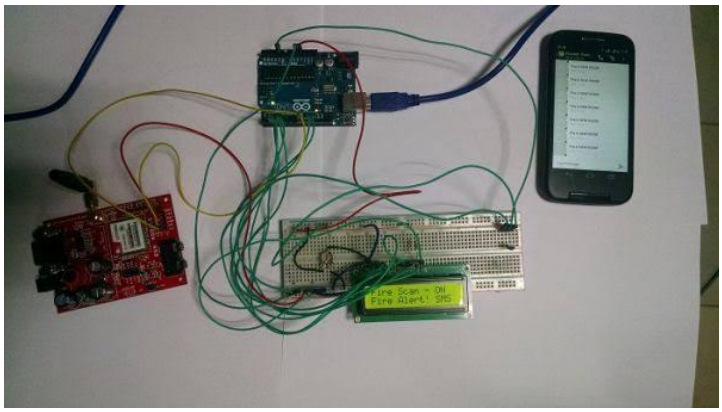

Fig 2: Wireless notice board using GSM module and Arduino.

V.FUTURE SCOPE

The proposed model consists of lcd to display message. However, bigger LED boards can also be used. Since, the proposed system can display only one message at a time. another very useful and significant improvement can be done by using higher end microcontroller and extended secondary memories so that it can display more than one message at the same time.

VI. CONCLUSIONS

The prototype of the GSM based notice board is designed successfully. It can be easily integrated with all general purpose display board and thus proving its mobility. The system accepts the message to be displayed in the form of Short Message Service(SMS), stores it , checks for its validation and displays it on the display unit if it from an authorized user. This system supports only one message at a time.The proposed system can be efficiently used for transfer of message instantly in the campus.

VIII.ACKNOWLEDGEMENT

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