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Scrolling Notice Board Using 8051 Microcontroller

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Abstract:-
The system is designed to display a scrolling text message on an electronic notice board using a PC to control it. This can be used in various facilities like schools, colleges, stadium, company, and factory, institutes in order to display notices, events or other alerts using a PC to control it .Well notice boards are usually used to pin news, events and other data to be displayed from time to time. It has an important feature, that it can be updated . The same functionality is provided by an electronic notice board. The pc is used as a controlling device for text to be displayed on the notice board .The system has great advantage over traditional notice boards. It can so be implemented at a variety of places including, banks, offices, training places ,colleges, institutes, railway, bus and many more areas. It makes message display very easy and convenient process. The message data sent from a pc is converted and fed to a microcontroller of 8051 family going through a Max232 interfacing IC. Data needed is stored in a microcontroller interfaced with external memory. After that an LCD screen used to demonstrate as a notice board is interfaced with the microcontroller to display the message sent through the PC as a scrolling text.

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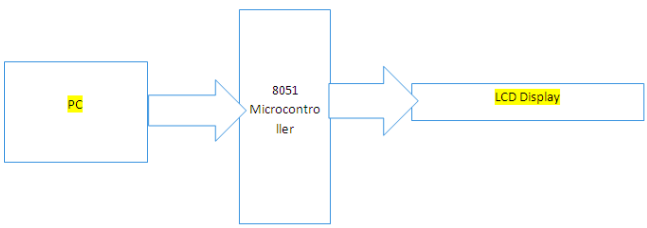
I. INTRODUCTION:-

Scrolling Notice Board can be easily constructed using a 8051 Microcontroller and 16x2 LCD Display. In this project, we will send message through the android device and display it on 16×2 LCD. Now a day's message display boards are using at different places like railway stations, public places, universities, colleges, hospitals, general stores, etc for giving information. Scrolling message means sliding text vertically or horizontally. Scrolling doesn't change the layout of the text but moves the user's view across what is a large message that is not wholly seen. They can be used to attract the attention of viewers also. Suppose if a message is written horizontally longer than will fit on the screen, it can't be displayed completely on the screen. By using scrolling message display units the viewers can see the message.

II. BLOCK DIAGRAM:-



Discription:-

8051 Microcontroller:

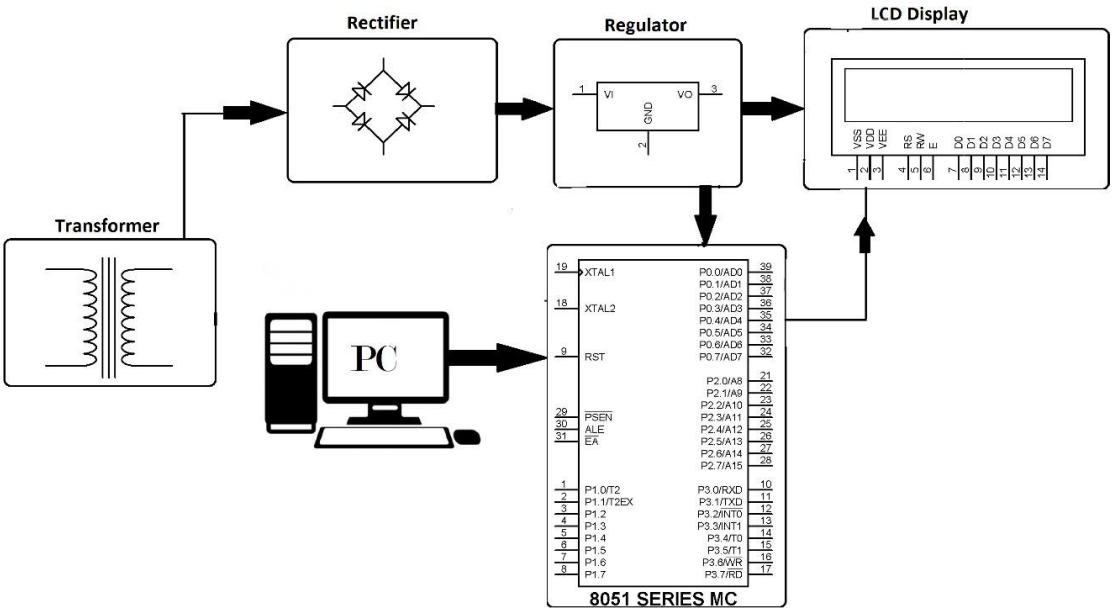
The micro-controller has on-chip fringe devices. The 8051 is a 8-bit microcontroller planned by Intel. It was advanced for math and single Boolean operations. Its family MCS-51 incorporates 8031, 8051 and 8751 microcontrollers. In spite of it's moderately , the 8051 is a standout amongst the most mainstream microcontrollers being used today. Numerous subordinate microcontrollers have subsequent to been produced that are in view of and perfect with the 8051. In this way, the capacity to program a 8051 is an essential ability for any individual who arrangements to create items that will exploit microcontrollers.

LCD:

It nothing but Liquid crystal display, we use 16*2 crystal display to show message for users. LCD is a flat panel display technology mainly used to display the message. Voltage required for the LCD is 5 volt (4.7V – 5.3V).

BLUTOOTH MODULE:

HC-05 module is an easy to use Bluetooth SPP (Serial Port Protocol) module, designed for transparent wireless serial connection setup. The HC-05 Bluetooth Module can be used in a Master or Slave configuration, making it a great solution for wireless communication. This serial port bluetooth module is fully qualified Bluetooth V2.0+EDR (Enhanced Data Rate 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband. It uses CSR Blue core 04-External single chip Rlue tooth system with CMOS technology and with AFH (Adaptive Frequency Hopping Feature).



III. CIRCUIT DIAGRAM:

Circuit Diagram Discription:-

After uploading the code in the micro-controller, power up the circuit using 12v adapter. The output of PC or Android System is fed to the controller. The controller controls the f low of the text from the PC. This text is in the form of digital signal . Then the text value is applied for displaying it into 16*2LCD.

Component Discription:-

1. 8051:

8051 microcontroller are electronic circuits that can be programmed to carry out a vast range of tasks. They can be programmed to be timers or to control a product online.

2. Capacitors:

When we apply a voltage over the two plates,an electric field is created. Capacitor works by storing energy electronically in an electric field. A capacitor is commonly used for filtering.

3. Crystal Oscillator:
A crystal oscillator is an electronic oscillator circuit that uses the mechanical resonance of a vibrating crystal of piezoelectric material to create an electrical signal with a precise frequency .

4.LCD Display:
LCD's are widely used where user interaction with the system is necessary and you might have come across static message display using LCD. The message displayed on the LCD can also be animated like blinking, scrolling etc. 16×2 LCD module is a very common type of LCD module that is used in 8051 based embedded projects. It consists of 16 rows and 2 columns of 5×7 or 5×8 LCD dot matrices. The module were are talking about here is type number JHD162A which is a very popular one . It is available in a 16 pin package with back light ,contrast adjustment function and each dot matrix has 5×8 dot resolution. The pin numbers, their name and corresponding functions are shown in the table below.

5. Potentiometer:
A potentiometer is a three-terminal resistor with a sliding or rotating contact that forms an adjustable voltage divider. If only two terminals are used, one end and wiper, it acts as a variable resistor or rheostat.

6 Bluetooth Module:
HC-05 module is an easy to use Bluetooth SPP (Serial Port Protocol) module, designed for transparent wireless serial connection setup. The HC-05 Bluetooth Module can be used in a Master or Slave configuration, making it a great solution for wireless communication. This serial port bluetooth module is fully
qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband. It uses CSR Blue core 04-External single chip Rluetooth system with CMOS technology and with AFH (Adaptive Frequency Hopping Feature). Scrolling Notice Board Using 8051 Microcontroller.

IV. CONCLUSION

The project we have undertaken has helped us gain a better perspective on various aspects related to our course of study as well as practical knowledge of electronic equipment and communication. We become familiar with software analysis, designation, Implementation, testing and maintenance concerned our project. The extensive capabilities of this system are what make it so interesting. Hence we are able to display the text from the pc or android system on 16x2 LCD Display

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