

BLUETOOTH BASED LED SCROLLING NOTICE BOARD

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ABSTRACT

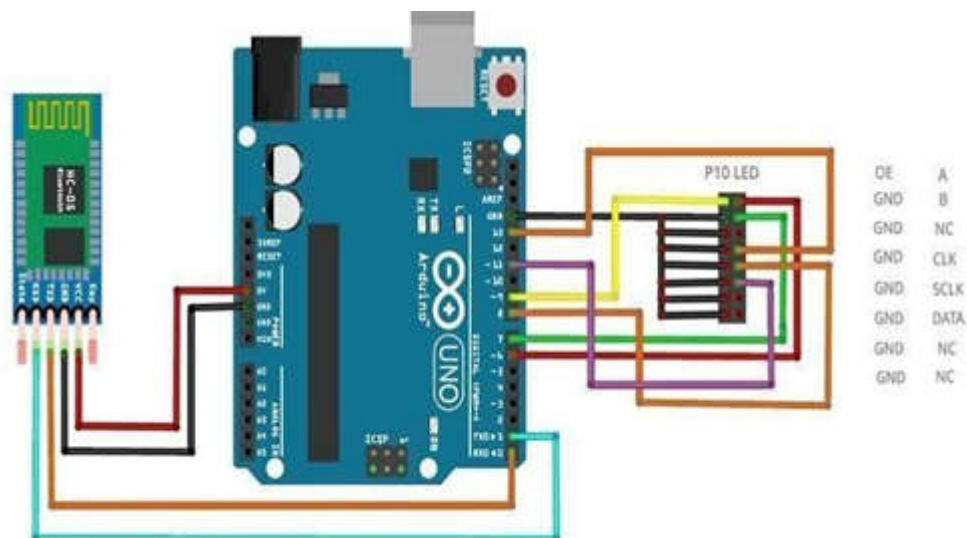
The best instrument for organizing and displaying information is a notice board, which is utilized in many establishments, including schools, universities, railway stations, etc. In this project, we suggested a cutting-edge wireless notice board, where we could add, remove, or change messages as needed. The primary goals of this project proposal are to significantly cut costs, use less energy, and contribute to service quality. A quicker option than traditional pin-up style message boards is wireless electronic notice boards. In this project, we'll use an Arduino to show scrolling text on a 32x16 LED dot matrix display module, also known as a P10 LED display module. The design and building of an electrical scrolling digital display system using Light Emitting Diodes are shown in this work (LEDs). LED placement resembles a dot pattern.

Matrix array used to display information. The institution's numerous departments and faculties can use this work to disseminate information. The system is made up of three components: a power supply unit, a control unit (which includes a microcontroller, a counter unit, and a driving unit), and a display unit (which is the output unit in form of LEDs). Alternating current (AC) from the power supply unit is drawn from the mains and reduced to 12 V using a step-down transformer before being rectified with a bridge rectifier, filtered with a real capacitor, and then regulated to 5 V using an ICs regulator.

INTRODUCTION

Communication and the requirement to stay in touch with one another are quite important and cannot focus enough. Communication is the deliberate act of transmitting information over a relationship using any available or preferred technical or common ways. A sender, a message, and a recipient are necessary for communication [1]. The Colleges and Universities are the primary target audience for the LED show system, which displays daily data continuously or at regular intervals throughout business hours [2]. Every commercial and piece of information is now digitally shown on a moving or scrolling screen. To distribute information to pupils, several schools still use wood boards. This leads to a variety of issues, including overcrowding, destruction, obstruction, stampeding, and compliance.

The goal of this work was to create a digital board with an LED scrolling display that could be utilized by departments and faculties from different universities to easily disseminate information.

CIRCUIT DIAGRAM:**IMPLEMENTATION**

This project's circuit operation is straightforward. The circuit will begin to function as soon as the circuit is given a 12V supply. The HC-05 module sends a string (or message) to the Arduino board, which then passes it on to the Matrix LED board. This board will then show the scrolling message. Although it's simple to select any preferred default message, at first the message "EEE Department" is displayed and scrolled on the board. Through the use of the Bluetooth-based application, the user can transmit a message (or string) using a Smartphone. Nevertheless, the user must first connect and pair their Smartphone with the HC-05 module (this requires the passkey "1234") in order to display the new message. Ensure that the module is still open. The message in the box.

LITERATURE SURVEY

1.Paper title: Android Phone with LED Scrolling Display

Authors: Tamboli, A. S., Patil, S. S., Deshmukh, V. R., and Karande, N. D.

The project's goal is to create an LED-based scrolling message display that can be operated using an Android smartphone. The suggested system communicates between an Android phone and an LED display board using Bluetooth technology. The system is actually split into two primary parts: an area for message transmission using an Android phone, and a piece for receiving and displaying messages. The text message that will be shown on an LED board is sent via an Android phone service. The Android phone is employed as a transmitter and input device at the input side of the system. Software for Arduino development is employed.

2.The Bluetooth-based Notice Board paper

Authors: Sheetal Garg, Rajat Kadwe, and Saloni Sahar

The system simulates an Android-based application and a Bluetooth-based message board. With this application, the user sends a message from an Android mobile, which the Bluetooth device then receives and retrieves at the display unit. The user will be the only one who knows the Bluetooth access password. The notice is subsequently transmitted to the microcontroller, which further displays it on the electronic notice board that has a 16x2 LCD display. A microcontroller from the 8051 series is used.

3.RajHakani (2014),

In his Journal (IJARCET) vol.3 RajHakani in 2014 worked on GSM based alphanumeric scrolling display system using PIC16F877A microcontroller interface with GSM modem via MAX232 level convertor. Hardware also included DS1307 real time clock, alphanumeric panel and multiple 16x2 character LCD displays and microcontroller coding was done using Embedded C and MP Lab. In his research, multiple

users were authorized to update notices on the digital notice board, and the design can only handle a maximum of 60 characters on the board. Based on this design, GSM is used which is costly and cannot work in remote areas where there is no network services, also in the display unit, LCD display is employed which is cost effective. But with the used of Bluetooth module which is cost free and a Dot matrix display board, we can improve on the display and also save some money.

4. Ibrahim, et'al(July 2014),

In their Paper, Ibrahim, et'al(July 2014), they presents the design of a Moving Message Crawler Display System (MMCDS)) via PS2 keyboard entry with serial communication using PIC16F876A microcontroller. In their work, keyboard was used as an input device, whereby, the input from the keyboard was sent to the processing unit in the PIC to process as required by the program. After being processed by the processor in the Central Processor Unit (CPU), it will send the output to the display unit through the drivers and the counters. This method involves the use of wired communication, in which the desired message has to be typed through the keyboard. But with Bluetooth module interfacing with the microcontroller, we can overcome that. Again the programming language involve in their work was assembly language and is not user friendly.

RECUITS AND DISCUSSIONS:

You may have seen a lot of typical digital notice boards where one has to manually change the message using a keyboard or another tool in order to update the displayed information. But it is simple to turn these notice boards into wireless notice boards; one such method is to use Bluetooth. The information on the LED panel can be wirelessly updated using our Smartphone by adding Bluetooth. Here, an Arduino Uno is connected to an HC05 Bluetooth module, which receives data given by the Smartphone application.

The information will then processed by Arduino and shown on the LED board.



CONCLUSION

This project explains how to create a led matrix that can display scrolling messages with the support of Bluetooth, Wi-Fi, and other specified devices. Wireless communication plays a crucial part in modern technology. Characters are displayed on matrices using the multiplexing approach, and the microcontroller may regulate the speed of scrolling. Given that it is based on wireless communication, this idea can be used everywhere. Its dynamic message display capabilities make it practical for usage in any industry where the material is constantly changing, such as the stock exchange, railroads, airports, and restaurants. The main benefit of this concept is advertising because there are no requirements for communication connections and the display board may be positioned at any height.

FUTURE SCOPE:

Display board systems are shifting from conventional displays to digital LED displays as technology advances daily. The suggested GSM-based wireless notice board system is a technical development of the notice board that will aid in time and resource savings and make the information instantly available to the

targeted individual. The technology quickly interacts with the intended consumers and is simple, affordable, and straightforward to use. The system can be used for a variety of purposes, including scoreboards for sports, banks, schools, restaurants, workplaces, and hospitals. This notice is displayed using an LED matrix. In this project extension, we'll create a display that will receive speech input from Google Assistant. Using Google's speech-to-text capability, the spoken input will be translated to text output and then shown on the LED screen. Our initiative aims to transform, or rather digitalize, the conventional use of paper-pin notice boards in schools, colleges, and other institutions. We can change the content to include one or more regional-specific local languages as well as emoticons.

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