

# Wireless Electronics Notice Board

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**Abstract—**This document discusses a novel and intriguing method of informing the public about a message via a wireless electronic display board that is synced utilising Bluetooth technology. This would allow us to convey any message nearly instantly and without delay just by sending an SMS, which is better and more trustworthy than the old traditional method of posting messages on notice boards. This proposed technology can be employed in institutions, public areas, malls, and large buildings to improve security and raise awareness of emergency situations, thereby avoiding many dangers. Display the message on the display board using the Bluetooth module. keywords:Bluetooth module, Arduino, 16x2 matrix display, microcontroller, and multi terminal are some of the terms used to describe this project.

## I. INTRODUCTION

Mobile phones and related technologies are becoming increasingly common in today's globe. In the sphere of technology, there are a variety of technological venues.Telemunications and embedded systems are two types of systems. People are becoming omnipresent. The use of cell phones Over the previous few years, the number of mobile phones has skyrocketed.ten and a half years Improvements in networking.The advancement of technology has aided in the growth and development of.The development of extremely dense networks. These days, the The majority of people like to communicate while driving. .As just a result, landline usage has decreased dramatically.decreased. One of the most regularly utilised types of notice boards is the bulletin board.Those ranging from elementary institutions to big universities groups to disseminate messages to a broad audience a large number of Paper is utilised and then thrown away by the government organisations.The primary goal of this study is to create an SMS-driven autonomous display board that can replace current programmable electronic displays and traditional notice boards. It is proposed that a display toolkit be designed to receive messages that can be used from an approved mobile phone. The transmitter and receiver sections can be used to describe the entire procedure. The message is extracted by the microcontroller from the BLUETOOTH module and shown on the MATRIX display board once the BLUETOOTH module gets it from the authorised mobile phone.From the WIFI module to the microcontroller, and from the microcontroller to the matrix display, serial to

parallel communication is employed throughout the process. In addition, an LCD display is used for acknowledgment.

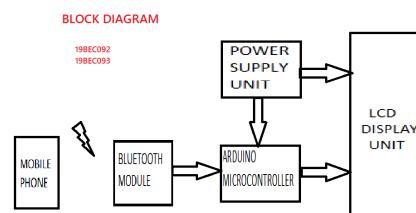
## II. RELATED WORK

People are being informed of the message via a wireless electronic display board that is synchronised using GSM technology. This would enable us to convey any message nearly instantly and without delay simply by sending an SMS, which is better and more trustworthy than the old traditional method of putting the message on the notice board. This proposed technology can be employed in a variety of public locations, malls, and large buildings to improve security, raise awareness of emergency situations, and prevent various dangers. The message is displayed on the display board using various AT commands. The display board is controlled by GSM technology, and information is conveyed by a message sent by an authorised user.

## III. BASIC PRINCIPLE

SMS applications are the only ones that use GSM technology. Bluetooth is an open remote conference for exchanging information across short, precise routes from fixed and mobile phones, allowing Personal Area Networks to be created (PANS). It began with the idea of a remote alternative for RS232 information lines. It can be used in conjunction with other devices to overcome synchronisation issues. The signal sent by the Android application device (cell phone) will be received by Bluetooth, which will then be transmitted to the microcontroller. To carry out this project, we'll need to create an Android application app that can perform the following duties. It has the ability to convert voice information to text. It uses Bluetooth to communicate the text to the microcontroller.

## IV. BLOCK DIAGRAM



## V. HARDWARE USED IN THE SYSTEM

The hardware used in this paper is divided into two categories. The first is the base control station hardware, which consists of a cellphone with a Bluetooth connection that allows communication between the mobile application software and the display system software, both of which are covered in the software section. The message display system hardware, on the other hand, comprises of a Bluetooth HC-06 module placed on an Arduino Uno board, as well as supporting hardware such as a power supply, LCD, and breadboard for component assembly.

### A. Arduino-UNO Microcontroller

A microcontroller is required to finish the related work and the Arduino Uno was chosen since it is a low-power consumption board and these systems give sets of digital and analogue I/O pins that can be interfaced to various extension boards and other circuits. Serial communications ports, including USB for loading programmes from personal computers, are included on the board.

### B. Liquid Crystal Display

Liquid crystal displays are available in a larger range of screen sizes than CRTs and plasmas, they were chosen to provide a high-quality view of the text. LCDs do not use phosphors, hence they do not suffer from picture burn-in (Fujitsu, 2011). The LCD panel consumes less energy and may be discarded more safely than a CRT. It can be utilised in battery-powered electronic equipment due to its low electrical power consumption. It's small, light, and uses very little power, and it produces very little heat during operation.

### C. Bluetooth Module (HC-06)

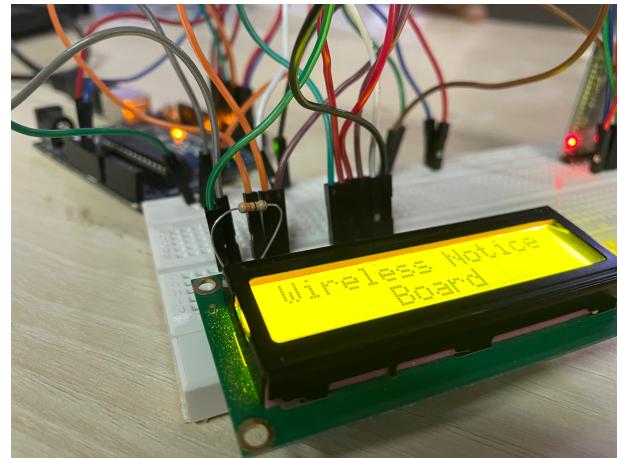
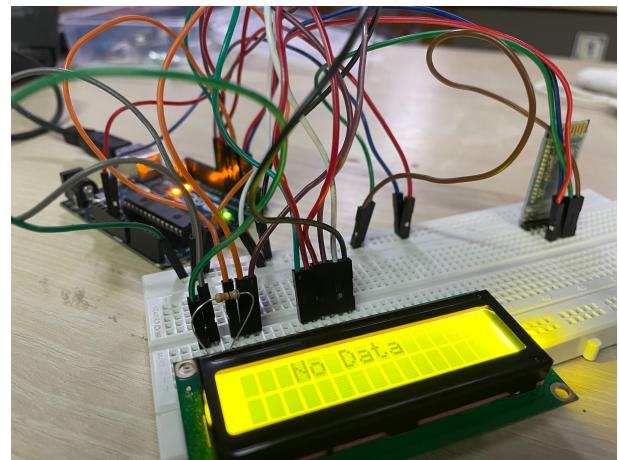
The Bluetooth module HC-06 was utilised in this project for wireless connectivity and convenience of usage. Any microcontroller with a regular RS232 serial port can interact with a PC or a Smartphone equipped with a Bluetooth Master module using this module. The Bluetooth HC-06 is designed to act as a masterslave system. Modules can only connect with one another, however the adapter can communicate with multiple modules. Because of the existence of an LED indicator, the Bluetooth HC-06 is simple to operate. The status of the connection is shown by the red LED on the Bluetooth module: while it flashes, the module is in the process of interconnecting with other modules in the same area. When the LED is on, it means the module has been synchronised (or "paired") with another Bluetooth master module and is ready to broadcast and receive data.

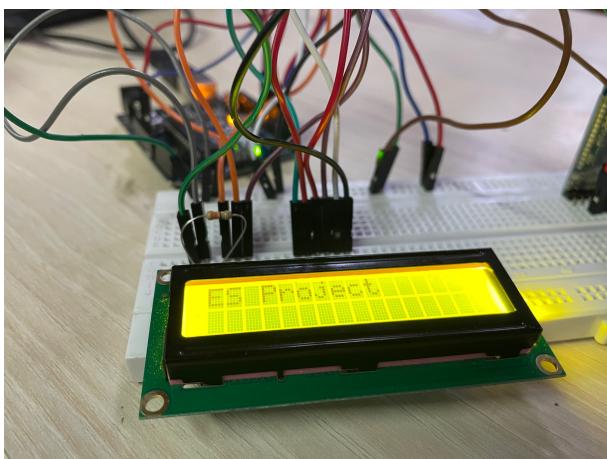
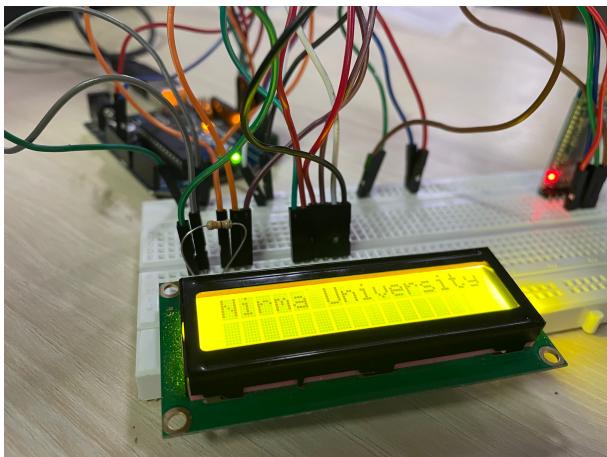
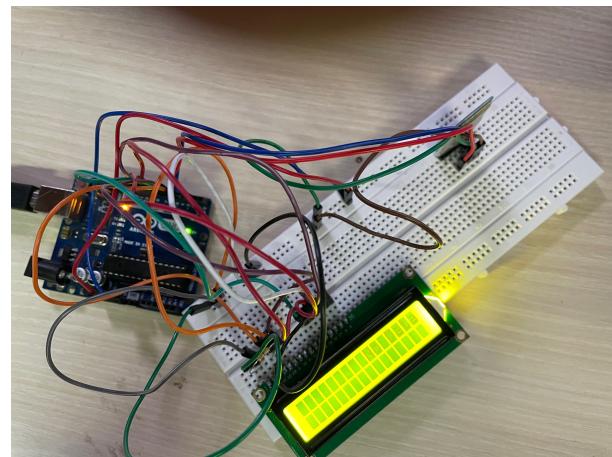
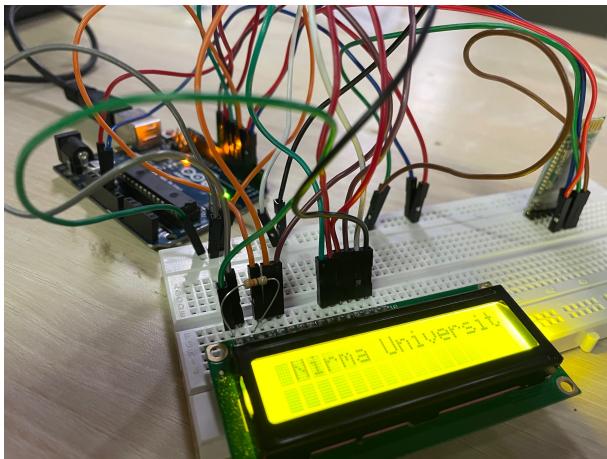
### D. Power Supply Unit

An external supply of 6 to 20 volts can be used to power the Arduino board. However, if the board is supplied with less than 7 volts, pin 5 may deliver less than five volts, making the board unstable. The voltage regulator may overheat and destroy the board if more than 12 volts is supplied. The suggested voltage range is 7 to 12 volts, which is why the 9volt battery was

chosen. The voltage regulator may overheat and destroy the board if more than 12 volts is supplied. The suggested voltage range is 7 to 12 volts, which is why the 9volt battery was chosen. The voltage regulator may overheat and destroy the board if more than 12 volts is supplied. The suggested voltage range is 7 to 12 volts, which is why the 9volt battery was chosen.

## VI. SIMULATION AND RESULT





## VII. APPLICATION

Wireless notice boards are commonly used to show information in public spaces such as bus stops, train stations, airports, shopping malls, and parks. Organizations, schools, and colleges have all used this initiative.

## VIII. CONCLUSION

As technology advances, display board systems are transitioning from traditional handwriting displays to digital displays. In addition to the Wireless Display Units. This study creates a photo-type laboratory model wireless notice board system with WIFI MODULE and BLUETOOTH connectivity that displays the user's desired message via SMS in densely populated or crowded areas. This proposed system has a wide range of potential applications in educational institutions and companies, as well as crime prevention, traffic control, trains, and advertising. The fact that it is user-friendly, as well as the fact that it can transmit information over a longer distance and at a faster rate, are important pluses for this application. We can improve the security system, raise awareness of emergency circumstances, and avert many dangers by applying the recommended methods.

## IX. REFERENCES

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- M. Grotschel, L. Lovasz, and A. Schrijver, "Geometric Algorithms and Combinatorial Optimization", vol.10,no.1, pp. 201-206,1988.7, Aug. 2009.
- SMS And MMS Interworking In Mobile Networks Arnaud Henry- Labordère , Artech House mobile communications, 2004 - Technology Engineering.

## **Appendix :**

```
#include <LiquidCrystal.h>
#include <SoftwareSerial.h>

LiquidCrystal lcd (4, 5, 6, 7, 8, 9);
SoftwareSerial mySerial (2, 3); //RX, TX);

String val = "No Data";
String oldval;
String newval = "No Data";
int i = 0;

void setup()
{
    // put your setup code here, to run once:
    lcd.begin(16,2);
    mySerial.begin(9600);
    Serial.begin(9600);
    lcd.setCursor(0, 0);
    lcd.print("Wireless Notice");
    lcd.setCursor(0, 1);
    lcd.print(" Board ");
    delay(3000);
    lcd.clear();
    lcd.print("Welcome!");
}

void loop()
{
```

```
val = mySerial.readString();
val.trim();
Serial.println(val);
if(val != oldval)
{
    newval = val;
}
lcd.clear();
lcd.setCursor(i, 0);
lcd.print(newval);
i++;
if(i >= 15)
{
    i = 0;
}
val = oldval;
}
```