

## CONTACTLESS NOTICEBOARD

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### ABSTARCT:

With the advent of Digital Technology, it is efficient to represent the information on digital devices. Now-a-days internet is the primary mode of communication everywhere. Notice board plays a vital role to convey the message in any organization. To achieve the green IT, it is mandatory to use the Digital media rather than earlier conventional media like paper printing. In this paper, it has been implemented a Smart Notice Board which uses Raspberry Pi.

With the help of this project, an authenticated person can convey the message/notice even from remote place on digital devices like Light Emitting Diode (LED). The proposed system reduces the resources like manpower and time. In this project, aside from displaying the message on the LED, it also speaks the message out through a speaker enabling the blind to receive the message as well.

**Keywords:** Smartboard, Bluetooth, LED, Arduino UNO

### 1. INTRODUCTION

The project aims at designing a LED based scrolling message display controlled from an Android mobile phone. The proposed system makes use of Bluetooth technology to communicate from Android phone to LED display board.

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. Android boasts a healthy array of connectivity options, including Wi-Fi, Bluetooth, and wireless data over a cellular connection (for example, GPRS, EDGE (Enhanced Data rates for GSM Evolution), and 3G). Android provides access to a wide range of useful libraries and tools that can be used to build rich applications. In addition, Android includes a full set of tools that have been built from the ground up alongside the platform providing developers with high productivity and deep insight into their applications.

The main controlling device of the whole system is a Microcontroller. Bluetooth modem and buzzer are interfaced to Microcontroller. The message sent through predefined application from user Android mobile phone is received by the Bluetooth modem. Bluetooth modem feeds this information to microcontroller which process it and displays it on the LED display.

### 2. LITERATURE SURVEY

Bluetooth based notice board is an android based application. In this application, user sends the message from the android application device, and then the message is received and retrieved by the Bluetooth device at the display unit. The Bluetooth access password will only be known to the user. It is then sent to the microcontroller that further displays the notice sent from the user on to the electronic notice board which is equipped with a 16X2 LCD display. It uses a microcontroller from 8051 family. GSM based display toolkit, the wireless communication has announced its arrival on big stage and the world is going mobile. We want to control everything. This remote of appliances is possible through embedded systems. This project designs a SMS driven automatic display toolkit which can replace the currently used programmable electronic display.

### 3. EXISTING SYSTEM

- In existing system wash basin, mirror lamp switches on when a person switches it on and switches it off.
- It consumes more power because the lamp is switched on all the time till we switch it off.
- The lifetime of lamp may decrease.
- The cost of electricity is more.

#### 4. PROPOSED SYSTEM

As people mostly use the manual process to update the notices, they need to update every time manually which is a tedious process. Following are the modules associated with our android application which helps an individual to easily update notice. A. Login User needs to get logged in for uploading the notice. By using this module the user can be able to update the notice directly from android phone that will be automatically updated on the digital notice board. B. Authentication The purpose of authentication is to see whether the user who logged in is the one who has been given the user oard.id and password by admin. Authentication is used so that only the faculties of the college or an individual who is responsible for updating the notice is able to update the notice on digital notice board. C.

#### 5. BLOCK DIAGRAM

##### Transmitter:

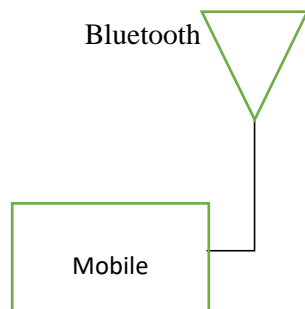


Fig:5.1.1 Transmitter

A transmitter is an electronic device used in telecommunications to produce radio waves in order to transmit or send data with the aid of an antenna. The transmitter is able to generate a radio frequency alternating current that is then applied to the antenna, which, in turn, radiates this as radio waves. A signal transmitter is a device that transmits data from one place to another. In the case of mechanical equipment, a signal transmitter sends a process signal like temperature, pressure or humidity from a measurement apparatus to an electronic device like a panel meter, controller or computer.

The transmitter combines the information signal to be carried with the radio frequency signal which generates the radio

waves, which is called the carrier signal. This process is called modulation. The information can be added to the carrier in several different ways, in different types of transmitters.

##### Receiver:

A communications receiver is a type of radio receiver used as a component of a radio communication link. This is in contrast to a *broadcast receiver* which is used to receive radio broadcasts. A communication receiver receives parts of the radio spectrum not used for broadcasting, that includes amateur, military, aircraft, marine, and other bands. They are often used with a radio transmitter as part of a two-way radio link for shortwave radio or amateur radio communication, although they are also used for shortwave listening.

Commercial communications receivers are characterized by high stability and reliability of performance, and are generally adapted for remote control and monitoring. For marketing purposes, many hobby-type receivers are advertised as "communications receivers" although none are suited for heavy-duty, reliable 24-hour use as the primary form of communication for an isolated station.

Communication receivers are suited for operation near powerful transmitting facilities and so must have good internal shielding, and effective front-end filtering. They have design features to provide high selectivity and stability.

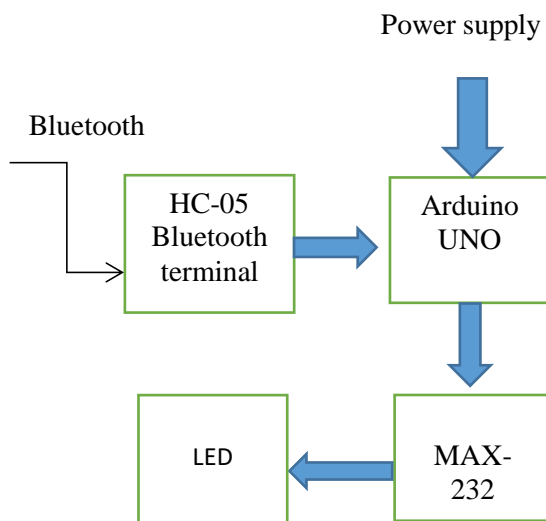


Fig :5.2.1 Receiver

## 6. WORKING PRINCIPLE

- Step 1: Gather the Required Components and Understand the Circuit. ...
- Step 2: Connect the LeD With Breakout Board. ...
- Step 3: Connect the Bluetooth With the Arduino. ...
- Step 4: Download the Code From the Attachment. ...
- Step 5: Switch ON the Hardware. ...
- Step 6: Open "Arduino Bluetooth terminal Control " App.
- Step 7: Display the Message on the LED.

## 7.SOFTWARE

Embedded C language is used to develop microcontroller-based applications. Embedded C is an extension to the C programming language including different features such as addressing I/O, fixed-point arithmetic, multiple-memory addressing, etc. In embedded C language, specific compilers are used.

Embedded C is a set of language extensions for the C programming language by the C Standards Committee to address commonality issues that exist between C extensions for different embedded systems.

## 8.PROGRAM

The program code which is dumped in the microcontroller of our project is shown below.

```
#include <16F73.h>

#include <string.h>

#use delay (clock=20000000) //20 MHz
Crystal frequency

#use rs232 (baud = 9600,
xmit=PIN_B1,rcv=PIN_B0,stream=LED_DISP
LAY) //Serial communication with LED display

#use rs232 (baud = 9600,
xmit=PIN_A0,rcv=PIN_A1,stream=BT)
//Bluetooth UART

void beep(int duration)
{
```

```
output_high(PIN_C4); //Buzzer ON

delay_ms(duration); //delay in milli seconds

output_low(PIN_C4); //Buuzer OFF
}

void main()
{
char notice_data[90]; //for storing data coming
from Bluetooth Module

output_high(PIN_C4); //Buzzer ON

delay_ms(1000); //delay 1 second (1000 milli
seconds)

output_low(PIN_C4); //Buzzer OFF

output_high(PIN_C3); //LED ON

delay_ms(1000);

output_low(PIN_C3); //LED OFF

delay_ms(1000);

output_high(PIN_C3);

delay_ms(1000);

output_low(PIN_C3);

while(1)
{
fgets(notice_data,BT); //Get string from
Bluetooth Module

output_high(PIN_C4); //LED flashes after
receiving data from Bluetooth

delay_ms(100); //100 milli seconds

output_low(PIN_C4); //LED off

send_data_to_LED_Display(); //Send data to
LED display
}
}
```

## 9. ADVANTAGES,DISADVANTAGES

### Advantages:

- It is very easy to operate and consumes less power.
- The circuit of the wireless notice board is portable.
- It is most secure.
- The system will reduce the man power as well as human work.

### Disadvantages:

- Power supply
- This system can be connected to only single device.

## 10. APPLICATIONS

- Can be used in colleges for showing notices and circulars for different departments
- .Weather forecast
- Display the availability of tickets in the line of a match or program.
- For multiple advertisements
- Controlling traffic on the road.
- Railway stations: Instead of only announcing only the delay we can display the current location.
- Traffic jam ahead .

## 11. RESULT

This project “IMPLEMENTATION OF CONTACTLESS NOTICE BOARD USING BLUETOOTH” is designed such that it is used to control the LED Notice board using wireless Bluetooth technology. Instead of using wire communication, one can use this device from certain distance.



**Fig:11.1 kit for the project**

## 12. CONCLUSION

The display boards are one of the major communications medium for mass media. This can be achieved by using graphics and other decoding techniques. Also we realize that this project saves time, energy and hence environment. Cost of printing and photocopying is also reduced as information can be given to a large number of people from our fingertips. Thus we can conclude that this project is just a start, an idea to make use of GSM in communications to a next level.

## 13.FUTURE SCOPE

Our project “Smart notice board using bluetooth terminal” is mainly intended to operate a LED Notice board using a Bluetooth terminal application.

- In future ,voice command typing.
- Addition of speaker.

## REFERNCES

1. Raj kamal –Microcontrollers Architecture, Programming, Interfacing and System Design.
2. Mazidi and Mazidi –Embedded Systems.
3. PCB Design Tutorial –David.L.Jones.
4. PIC Microcontroller Manual – Microchip.
5. Embedded C –Michael.J.Pont.