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Voice based Notice Board using Android

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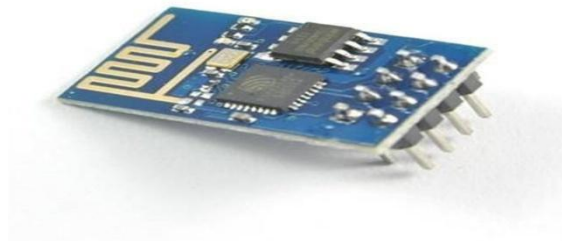
ABSTRACT: The voice-based notice board using Android is an innovative system design to display notice on a screen without the need for manual typing. This system uses an Android phone and Bluetooth technology to wirelessly transfer message spoken by the announcer or administrator to an LED screen. The LED screen is an interface with an arduino Nano microcontroller which receives and the code the message before displaying it on the screen. The system can be used in various places including railway station school's colleges and offices to display emergency announcement on the screen instantly without the need of manual typing. The use of this notice board system improve efficiency saving time and effort. The key component of the system is the Bluetooth module, Matrix LED display, Android phone and Android application. The Android phone act as the main controlling device of the system interfacing with the Bluetooth module to wirelessly transmit message to the arduino nano microcontroller the Matrix LED display is used to display the message on the screen. The voice-based notice board using Android is a cost effective and user-friendly solution for displaying notice on a screen in various public utility places. It utilizes advanced wireless Android development and is easily accessible through an APK application with this system anyone can send message through their Android phone using Bluetooth making it an efficient method for displaying important notices

I. 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. This project is used for instant information display using LED's by using android Bluetooth module. Now a day's every advertisement or information is displayed digitally. The big shops and shopping centres are using the digital moving/scrolling displays at railway station, bus stands right from arrival/departure information to, platform number etc. displaying the information in digital form. But in these displays if the concerned authorities want to change the message, they are able to direct their messages through this Bluetooth based display system. LED displays are used in variety of applications, like store signs, billboards and many more. In recent years it is commonly used in destination signs on public transport vehicles. LED panels are also used for the purpose of general illumination, task lighting and for stage lighting. Display systems are classified into single line displays, and multiline displays. This system is actually divided in main two parts, one is message transmission section which is android phone and another is reception and displaying section. The Android phone is service which is used to transmit the text message which is to be displayed on LED board. At the input/transmitter side the android phone is used to generate input to the system. The software used is arduino development tool. In that tool APK application is used for sending texts or numbers using Bluetooth access. The message sent by Bluetooth is in the form of ASCII codes. At the receiver side Bluetooth receiver is used. It receives ASCII codes from transmitter and gives to arduino development board which is controlled by AVR controller.

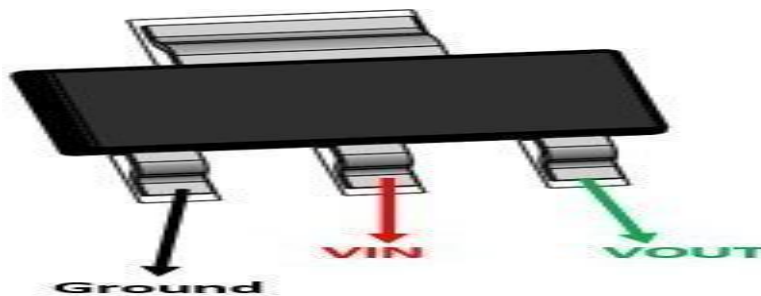
II. RELATED WORK

Components used for connection are as following: -
BLUETOOTH-HC05:

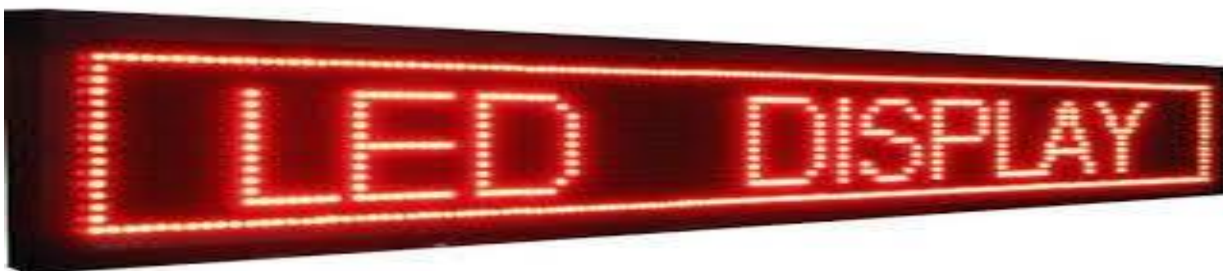


HC05 HC-05 module is an easy-to-use Bluetooth SPP (Serial Port Protocol) module, designed for transparent wireless serial connection setup. Serial port Bluetooth module is fully qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband. HC-05, the HC-06 module can reach a range of up to 9 meters (30 ft) If you need a Bluetooth module to talk to your Smartphone and an Arduino board.

VOLTAGE REGULATOR: Voltage regulator Two separate voltage regulators are used after the filter capacitor to generate constant DC voltage supply of 5 volts and 12 volts. We have used 7805 and 7812 as a voltage regulator. Both are three pin IC which are namely input, ground and output. We have to give output of filter capacitor to the input of regulator, and we get 5 volts and 12 volts supply at the output pin of the respective regulator.



LED DISPLAY:



A LED display is a flat panel display that uses an array of light-emitting diodes as pixels for a video display. Their brightness allows them to be used outdoors where they are visible in the sun for store signs and billboards

ANDROID DEVICE:



Android is software stack for mobile device that includes an operating system middleware and key application. Android boost a healthy array of connectivity options including Wi-Fi Bluetooth and wireless data over a cellular connection.

III. METHODOLOGY

The Working principle of Voice Based Notice Board Using Android is very simple, we have Android application and Bluetooth module, in order to successfully connect with the Bluetooth module, you need to pair the HC-05 module with the android app. Once connected, we can send the message we want to display, once the message has been sent, Arduino will process the cable and convert it into a signal that the 74HC595 shift resistor can detect, after the data has been sent to the shift. resistor, ready to display. Arduino is the heart of the circuit. processes all data sent by the Bluetooth module. The p10 module is widely used in day-to-day operations and is used in professional activities such as in stores for advertising purposes, and in shopping malls to inform the safety and management system of parking spaces and hospitals to alert safety in emergencies. Initially the Bluetooth terminal is turned on and it should be connected to the device by entering the correct password. If the password is correct then the initial message will be displayed which we written in the code. After that the user must send his/her voice commands through the android app. This app will convert voice to text and sends the data serially. If numbers of characters are less than 100 then the message will be displayed on the P 10 LED matrix display panel. As it is Notice so the message will be Scrolling. If the number of characters is greater than 100 then the previous or old message will be displayed

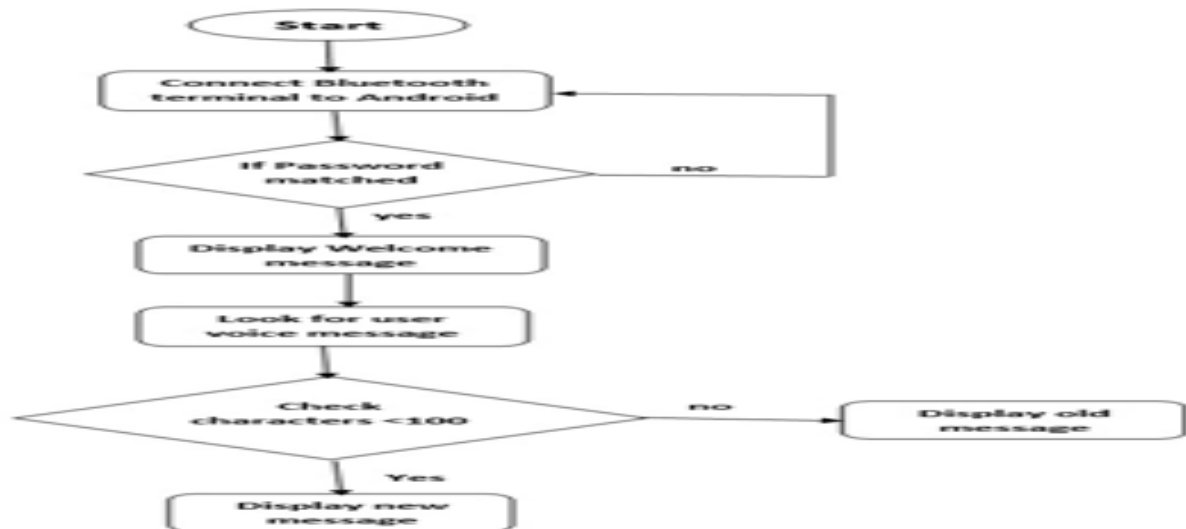


Fig. 2. Flow Chart

V. EXPERIMENTAL RESULTS

III. RESULTS



Fig. 3. Hardware results

VI. CONCLUSION

By introducing concept of wireless technology using Bluetooth in the field of communication we can make our communication more efficient and faster, with higher efficiency. We can display the messages with less errors and maintenance. This model can be used very efficiently in schools, chain restaurants, in colleges where in students and staffs can be informed simultaneously in time. It can be used at public transport places like railways, bus station, and airport and also at roadside for traffic control and in emergency situations.

It is cost efficient system and user friendly. We are concluding that, by introducing the concept of wireless technology in the field of communication we can make our communication more efficient and faster, with greater efficiency we can display the messages with less errors and maintenance. We have presented an approach of using the Bluetooth technology for mobile printing from a palm handheld and explained the application for the purpose of printing from a mobile device

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