

# Electronic Nameplate System

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**ABSTRACT** - A name plate is used for displaying the name of a person, logo, or product, and is made from a variety of materials to serve as a long term identifier. The disadvantage with the existing name plate system is that it is too much trouble when you want to replace text on a digital desk nameplate, so you need a solution to facilitate the programming of text on a digital desk nameplate. So this issue of the nameplate is solved in our project using application for changing text. This project aim is to develop and design a text mutable digital name plate using android application with Bluetooth as a wireless connection. User can send the text as per the requirement using the application. The person within the range can change the text on name plate with the help of application which is installed on their mobile phone with minimum time and efforts, this project is very user friendly. In this proposed method, the development of a simple and low cost wireless Android application based electronic name plate is presented. The proposed system uses Bluetooth displaying messages on a name plate. Android based application programs available for Bluetooth text messages. Using the Bluetooth serial data communication technique, the corresponding transceiver module has been interfaced with microcontroller board at the receiver end. To achieve this, microcontroller board (Arduino Uno) is programmed to receive alphanumeric text messages in any of the above selected communication modes. The proposed system will help in reducing the human effort, and cost for manual changing of the names on name plates.

**Key Words:** Mutable, transceiver, alphanumeric, ArduinoUNO, Bluetooth, etc.

## 1. INTRODUCTION

This method's development of a straightforward, inexpensive wireless customized LCD display is presented. The suggested system makes use of Bluetooth to show messages on an LCD. There are application programmes for Bluetooth text messages that are based on Android. The corresponding transceiver module has been interfaced with the microcontroller board at the receiving end using the Bluetooth serial data communication method. A cheap microcontroller board (Arduino Uno) is programmed to accept alphanumeric text messages in any of the previously mentioned communication modes for this purpose. The suggested system will assist in lowering the cost, paper, printer ink, and labor required for manual changing of notices. The advent of AMPS (Advanced Mobile Phone System), which used analogue transmission, was a result of

the development of cellular networks in the 1970s in response to the growing frequency shortage in radiotelephone services. Cellular networks of this generation were acknowledged to be the first generation. The second generation, known by a variety of abbreviations as GSM, was built on digital transmission (Global System for Mobile communications) numerous standards for cordless phones were also introduced at this time only. With the fusion of various technologies, the third generation has emerged. Some of these technologies include FPLMTS (Future Public Land Mobile Telecommunications System), UMTS (Universal Mobile Telecommunications System), and IMT-2000 (International Mobile communication). BLUETOOTH technology is now one of the most widely used methods for wireless data transfer. It is versatile and effective in its work.

### 1.1 PROBLEM STATEMENT

Setting a digital desk nameplate by using a PC connection (personal computer), the disadvantage is that it is too much trouble when you want to replace text or text on a digital desk nameplate, so you need a solution to facilitate the programming of text on a digital desk nameplate [1].

### 1.2 LITERATURE SURVEY

This paper describes the creation of a straightforward, reasonably priced wireless notice board that runs on Android. The proposed system uses wireless serial data communication that is based on Bluetooth or Wi-Fi. For this purpose, Bluetooth and Wi-Fi communication between Android-based personal digital assistant devices and a remote wireless display board is facilitated by application program for Android. A low-cost microcontroller board (Arduino Uno) is setup to receive and display messages in any of the aforementioned communication modes at the receiver

A group of LEDs (Light Emitting Diodes) are tightly arranged in specific patterns to create a digital table signboard that can display specific writing that can be used as informational media. One way to communicate a changeable announcement or piece of information is through digital media. The drawback of setting up a digital desk nameplate using a PC connection (personal computer) is that it is too difficult to replace text or text on a digital desk nameplate, so you need a to make text on a digital desk nameplate easier to program. Using Bluetooth as a wireless connection is one

option. It is possible to use Bluetooth communication as a data transfer medium on digital devices. Smartphones with the android operating system use practical principles in

The GSM-based notice board is intended for use in colleges and universities for continuously or irregularly displaying day-to-day information during working hours. It provides flexibility to display flash news or announcements more quickly than a programmable system because it is a GSM-based system. a) To create a GSM-based notice board, which will be implemented through an embedded system with a microcontroller, whose contents can be updated via an SMS. To design a project simple, easy to install, user friendly system, this may receive and display notice in a very specific manner. b) An SMS-based notice board that uses the widely used GSM to enable communication between users' mobile phones and the notice board. SIM 800 GSM modem with a SIM card is interfaced to the ports of the Arduino with the help of AT commands [3].

## 2. BLOCK DIAGRAM

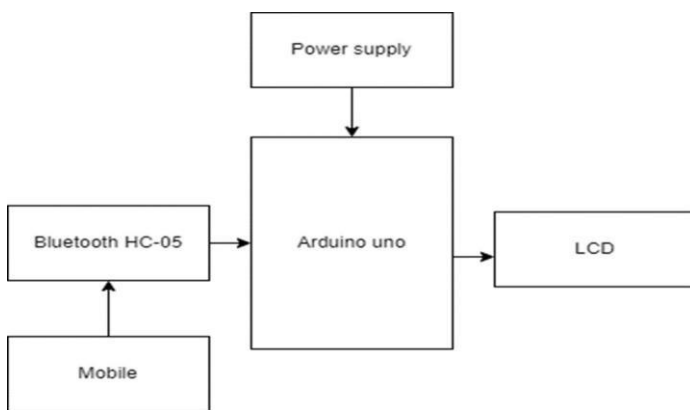


Fig -1: Block Diagram

## 3. PROPOSED SYSTEM

Power supply, Arduino UNO, LCD module, Bluetooth HC-05, and a mobile application make up the suggested solution. When we upload the programme to the Arduino UNO, all of the equipment's features are turned on. At that point, we will use a mobile application to pass the Name that we want to display on the nameplate. After then, Bluetooth will receive this Name. And this Name will be displayed on LCD using Arduino(nameplate).

## 4. HARDWARE IMPLEMENTATION

### 4.1. Arduino Uno

Here, we've employed The Arduino UNO board, which is one of their standard boards. Italian word UNO here means "one" It is regarded as the strong board that is employed in many projects. The Arduino UNO controller board was created by Arduino.cc. The ATmega328P microprocessor is the

every application that supports Bluetooth as a data transfer medium [1].

foundation of the Arduino UNO. When compared to other boards, such the Arduino Mega board, etc., it is simple to use. The board is made up of shields, numerous analogue and digital input/output (I/O) pins, and other circuitry.

The Arduino UNO has 14 digital pins, a USB connector, and power jacks in addition to its 6 analogue input pins. Integrated Development Environment, or IDE, is used to program it. It has both online and offline operating systems.

### 4.2. Bluetooth HC05

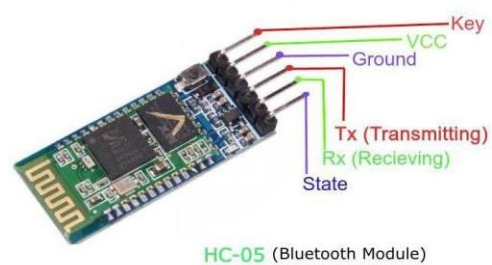


Fig -2: Bluetooth HC05

HC-05 Bluetooth Module is a low-cost, easy-to-operate & small-sized module used for wireless communication in the Bluetooth spectrum. It supports Serial Port Protocol (SPP), which helps in sending/receiving data to/from a microcontroller (ex:Arduino UNO).

Its baud rate is 9600 for data communication and 38400 for command mode communication. HC05 can operate in master/slave mode and thus multiple slavenodes can be controlled using a single master node it is also called mesh networking.

### 4.3. LCD Display

The Nameplate display is an LCD panel. In our project, an LCD is used to display the application's output. Millions of pixels make up an LCD display. The quantity of pixels in a display affects its quality. 3840 pixels make up a 4K display. Two glass panels make up an LCD, which has the liquid crystal material sandwiched in the space in between. Transparent electrodes are employed and covered on the inside surface of the glassplates.

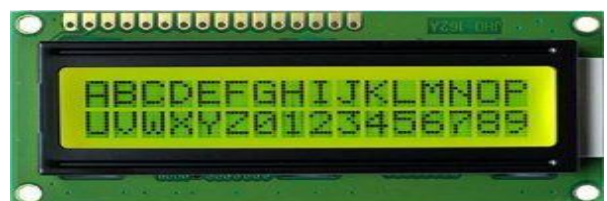


Fig -3: LCD Display

to identify the character, symbols or patterns, and the polymeric layers are present between the electrodes.

### 5. SOFTWARE REQUIREMENTS 5.1 Android Studio:

An Integrated Development Environment (IDE) called Android Studio is used to create Android applications. Numerous tools that Android Studio offers help us build applications more productively.

#### Characteristics of Android Studio

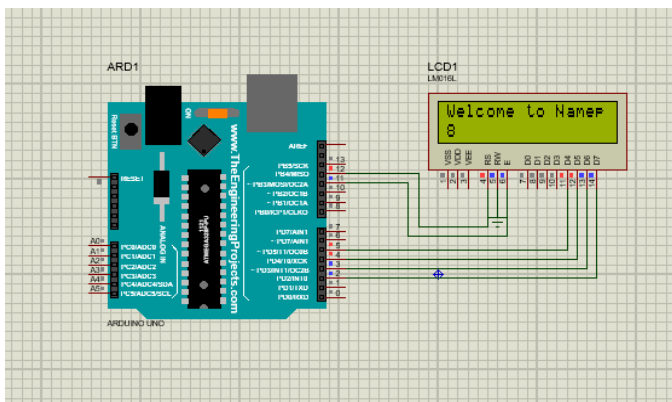
- A flexible build system is present. It provides an emulator with lots of features for testing apps.
- All Android devices can be developed using Android Studio's centralised environment.
- Update the source code of an application that is already running without having to restart it.
- Android Studio offers a wide range of powerful testing tools.
- It works with NDK and C++.
- It comes with built-in support for Google Cloud Platform, and integrating it with Google Cloud Messaging and App Engine is a breeze.

This project creates a Bluetooth-connected name plate system that displays the user's preferred name using an Android application. I'll now introduce the idea of Bluetooth technology in the communication field. With the usage of Bluetooth for communication, communication has become faster and more effective. Less upkeep and mistakes can be made when displaying the text on the nameplate. A true advancement in technology

### REFERENCES

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### 5.2 Simulation:



### 6. FUTURE SCOPE

The nameplate board systems are transitioning from traditional handwriting display to digital display as technology improves day by day. In the future, we will be able to update the nameplate's name from anywhere. As needed, we can reduce the size of the nameplate.

### 7. CONCLUSION

The technological period has advanced throughout the years, and it is now imperative that we all improve our technologies.