Iot Based Smart Notice Board

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ABSTRACT: This project gives the best solution to replace the present paper-based notice board system with advanced electronic notice board. Wireless electronic notice boards have been designed, which completely eliminates paperwork and reduces the manual work and time. Building a IoT based projects gives the fast transformation of data and the user can access the data from anywhere in the world. In this project, we have developed a IoT based smart notice board. The main objective of this project is developing an automatic, self-enabled and highly reliable electronic notice board. A display connected with the cloud will continuously waiting for the message from the user, if the user uploads the data through the server, it will automatically upload to the LED. By using Wi-Fi moduleESP8266, the user can upload the message to the LED by accessing through the website connected to server. The user can write the data from anywhere in theworld to the LED. This will reduce the time to update the data as well as it will efficiently transfers the data to the end user.
Keywords: Arduino Uno, LED, Wi-Fi module, AT89S52 Microcontroller, SMPS for LED board

I.INTRODUCTION
The main purpose is to design this electronic notice board system is to interface it with user's mobile phones for displaying the latest information. In other words, the user sends the information from remote areas and this information is received through Wi-Fi module on the Arduino board at receiving end. This system is designed withAT89S52Microcontroller, which is interfaced with Arduino Uno and level shifter through serial cable. LED matrix is also used this system for displaying the information or data. The Wi-Fi module is wireless component that will maintain connection with server. We are using server and it has URL link that can be used by the authorized person and that person can write or re-write the information which want to display. This system is designed with AT89S52 microcontroller, which is interfaced with Wi-Fi module and level shifter through serial cable. LED Matrix is also used in this system for displaying the information or data.

The heart of this system is micro controller, this will receive data from Wi-fi modem using UART (universal transmitter and receiver), update this message on LED board through same UART only. This system also alerts the buzzer when new message is received. In this we are using Atmel AT89S52 controller, it is 8bit controller which has inbuilt 8k 8 bytes flash memory,256 bytes RAM and 32 I/O pins and UART. The advantages of this controller are low cost, availability of tools and resources are more.

Wi-Fi technology is a long-range wireless communications technology. It has beendeveloped rapidly in recent years. In this we are using Wi-Fi module and its operating voltageis 12v and 1 amp, data format is UART with 9600 baud rate. The advantages of Wi-Fi aremore secured and can sendmessagesfrom anywhere.Electronic noticeboards are userfriendly and echo friendly, they are replacing present paper usage notice boards. We can useeitherLCD orLED boards.LEDboardsare moreattractive.

II.LITERATURE SURVEY
Yash Tekkamaki [1] described "Large Screen Wireless Notice Display System" with an aim to increase the usability of electronic notice board, deals with wireless reception and display of message using Raspberry Pi. Practically, all output resolution is supported. This paper presents a way to incorporate messages in HTML script. It offers

an edge over other notice boards because of features such as customizable font size, color and background color. The size of the screen, a major limitation of other methods, is overcome by this system.

Dharmendra Kumar Sharma [2] This paper describes the "Small and Medium Range Wireless Electronic Notice Board using Bluetooth and Zig Bee" introduces a low cost, handheld, wireless electronic notice board by using Atmel's ATmega32microcontroller and different wireless technologies (Bluetooth and ZigBee) and their performance analysis based on the parameter such as range, BER (bit error rate), RSSI (Received signal strength indicator), signal attenuation and power consumption. In this project a low cost, office/ industry usable, portable wireless notice board has been successfully developed. The graphical LCD displays transmitted character and its functionality satisfies all definitions of notice board.

KruthikaSimha [3] proposed "Electronic Notice Board with Multiple output display" aims at iterating the results of a project focused on developing a wireless electronic notice board, which offers the flexibility to control information display within a given range on multiple displays. The notice board will display information being transmitted to it from a central controlling unit, using a serial communication protocol.

KruthikaSimha Shreya Chethan Kumar, Parinitha C and Shashidhar Tantry [4] has developed a Display Message on Notice Board using GSM. This paper deals with an SMS based notice board incorporating the widely used GSM to facilitate the communication of displaying message on notice board via user's mobile phone. Its operation is based on microcontroller ATMEGA32 programmed in assembly language. ASIM300 GSM modem with a SIM card is interfaced to the ports of the microcontroller with the help of AT commands. When the user sends a SMS via a registered number from his mobile phone, it is received by Display Prof. KruthikaSimha Shreya SIM300 GSM modem at the receiver send. Electronic Notice Board with Multiple Output. In this paper simha, it can be easily integrated with general purpose display board to provide its mobility. The system accepts the message from of SMS and display on the notice board. Development of Simple and low-Cost Android Based Wireless Notice Board.

Ravindra Joshi, Abhishek Gupta, Rani Borkar, SamitaGawas and Sarang Joshi [5]. This paper describes the design and construction of E-notice board using GSM technology. The system consists of four basic units: GSM modem, Raspberry pi board, LCD monitor and Mobile device. The operation of the system is centred on Raspberrypi Board. The operation of system is such that the notice which is to be displayed is send by the mobile device to the GSM modem and displayed on the LCD monitor using Raspberry Pi board. The system is based on real time process and saves lot of resources i.e., human effort. The main objective of this paper is to develop a wireless e-notice board that displays message sent from the user and to design a simple, easy to install, user friendly system, user friendly system. Wi-Fi provides higher data rates for multimedia access as compared to Bluetooth which provides lower data transfer rates. Bluetooth are intended for communication (about 10m), while Wi-Fi is designed for WLAN about 100m.But when using GSM, we cannot display message without Network connectivity.

Savan Shah [6] In this paper a project model for electronic notice board is described which uses two different technologies, GSM and Bluetooth for displaying on LCD screen. Here the main part is Microcontroller 8051. The microcontroller is interfaced with GSM Modem via MAX232 level convertor. It is used to convert RS232 voltage levels to TTL voltage level and vice versa. The hardware also has a 64K EEPROM. This EEPROM is used to store the timings and messages to be displayed. While using Bluetooth technology, Bluetooth modem fetch the message and sends it forward to the display board. When using GSM technology GSM Module is used.

Neeraj Khera [7] proposed "Development of Simple and Low-Cost Android Based Wireless Notice Board". The proposed system uses either Bluetooth or Wi-Fi based wireless serial data communication in displaying messages on a remote digital notice board. In this the technological advancement of the notice board is proposed that will help in saving time and resources and making the information available instantly to the intended Person. The system is simple, low cost and easy to use that interacts with the intended users instantly. This system can be used in various applications like banking, schools, restaurants offices, hospitals, score boards for sports etc. The voice calling feature can be added with the proposed system as a further enhancement for using the system in railways, airport or bus stations.
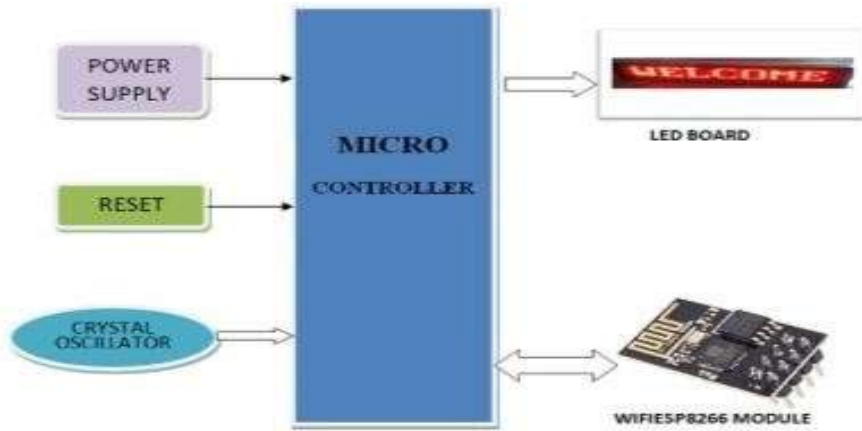
III. IMPLEMENTATION

Figure3.1: Block Diagram

The AT89S52 Microcontroller is designed with static logic for operation down to zero frequency and supports two software selectable power saving modes. The Idle Mode stops the CPU while allowing the RAM, timer/counters, serial port, and interrupt system to continue Functioning.

The ESP8266 Wi-Fi Module is a self-contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. The ESP8266 is capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor.

Arduino is an open-source electronics platform based on easy-to-use hardware andsoftware. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language (based on Wiring), and the Arduino Software (IDE), basedon Processing.
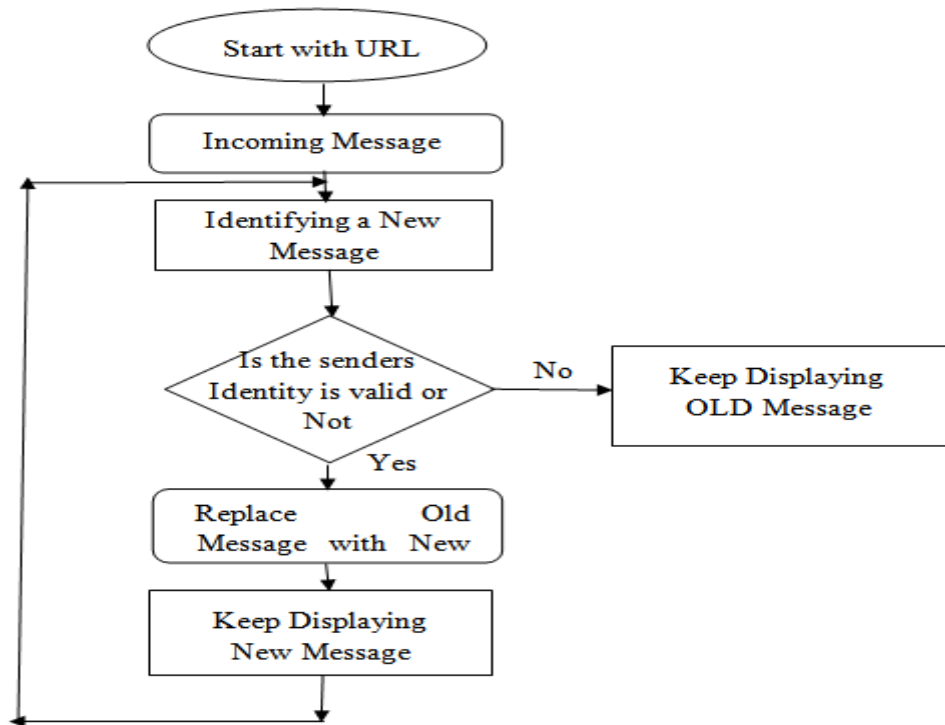

Fig.3.2: Flowchart Diagram

Upon system start up the incoming message is from the user (sender) and it identifiesthe new message it checks whether the message is from sender is valid or not. If it is fromsender,itreplacestheoldmessagewithnew messageanditkeepdisplayingthenewmessage.

If the incoming message from unknown user it displays the "Identity is invalid" andkeepsondisplayingtheoldmessage.

IV. RESULTS

The functional operations are implemented in the Arduino IDE software.

1.The URL is http://notice.orgfree.com/index.php by using this URL we are giving message to the notice board.

2. We have to add "#"after giving the message.

3. After that we select the message "WELCOME TO" and inserted in 1_{st} line.

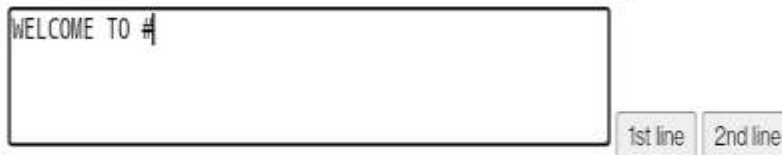# Update Your Message From Anywhere

Enter Your Message

WELCOME TO #

1st line   2nd line

Fig6.1 : Update Message in 1st line

4.Afterinsertingthemessage.Itshowsthatyour messageisinsertedsuccessfully.

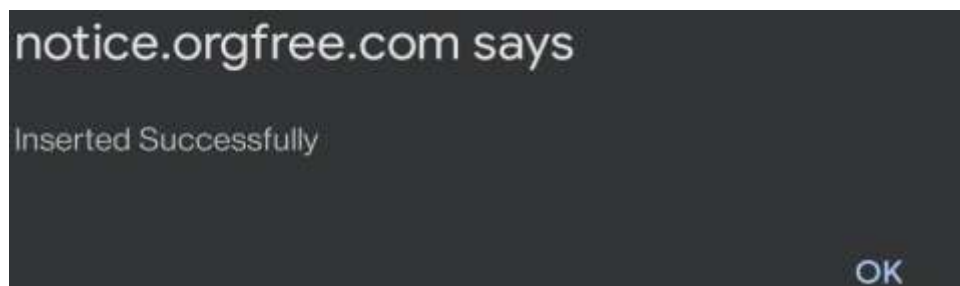## notice.orgfree.com says

Inserted Successfully

OK

Fig.6.2: Inserted Confirmation Message in 1st line

5.Now click the ok.

6. After that we select the message "ECE DEPARTMENT" and inserted in 2_{nd} line

Update Your Message From Anywhere

Enter Your Message

#ECE DEPARTMENT

1st line   2nd line

Fig.6.3: UpdateMessagein2ndline

7. Afterinsertingthe message.Itshowsthatyourmessageisinsertedsuccessfully.
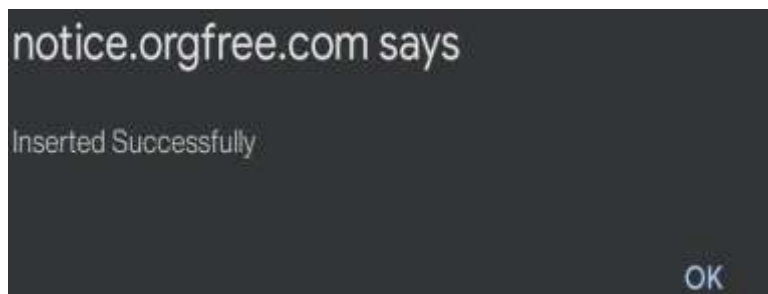
Fig.6.4: InsertedConfirmationMessagein2nd line

8.The display shows WELCOME TO in 1st line and ECE DEPARTMENT in 2_{nd} line.

Fig.6.5: LED Display

V. CONCLUSION & FUTURE SCOPE

5.1 Conclusion

The proposed system accepts the message, stores it, validates and displays it on the LED board. LED boards are used to display messages in Railway stations, shopping malls fordisplaying advertisement, educational institution and organizations, managing traffic in smart cities and other public utility places. Cost of printing and photocopying is also reduced because the information can be delivered to a large number of people in a very short time. It provides faster transfer of information and are easy to install and maintain. It provides an efficient way of displaying messages on Notice Board and also get auto notifications using Wireless Technology. It also provides user to easily receive the important information or message.

5.2 Future Scope

Electronic Notice Board is one of the applications where WI-FI can be used effectively. It can also be used in Malls and Highways for Advertisement purpose. A moving display with variable speed can also be used in place of static display. We can control the loads at class room. We can implement automatic electronic college bell. We can implement automatic time table and notice display system.

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