# LED Advertising board based on IOT E – Circular notification for students through Wi - Fi

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***Abstract— The project focuses on creating a notice board by interfacing the NodeMCU Arduino board with a P10 LED display. The objective is to display data entered on a web server onto the notice board. The Arduino acts as the central controller, receiving data from the web server with the help of NodeMCU and controlling the P10 display to showcase the information. The project involves three main components: the NodeMCU board, the P10 display, and the web server. The NodeMCU is equipped with built – in Wi – Fi capabilities, which allows it to connect to the internet and communicate with the web server. The P10 display consists of a matrix of LED modules, which can display text. To implement this project, the NodeMCU board is programmed to establish a connection with the web server using the Wi – Fi module. The web server serves as a platform where users can input data or messages to be displayed on the notice board. The NodeMCU retrieves this data from the server and processes it.***

***Index Terms— Wi-Fi, Display, Board, Microcontroller, Scrolling, Program***

## I. INTRODUCTION

The importance of placing notice boards in institutions or organizations and public utility places like airports, bus stations and railway stations to display and pass information can never be overemphasized. However, day-to-day changing of notices in these places is a difficult task. Wireless Electronic Notice Board is used for transmission of text data through wireless GSM interfaced with microcontroller It displays online message on public places. The system consists of a GSM receiver and a display unit which can be messages GSM Based Wireless Electronic Board helps in passing messages almost immediately by sending SMS which is better and more reliable than the old traditional way of pasting messages on notice board. It is used in enhancing the security system and also to make awareness of the emergency situations and avoid many dangers in industries. The main aim of this paper is to design SMS driven automatic display board which can replace the currently used conventional wooden notice boards in most universities. The notice board displays messages sent from the user's mobile.

## II. LITERATURE REVIEW

This is a literature review on research on wireless digital notice board using wi-fi. The author states that as old means of conventional notice boards are outdated as it requires a huge amount of time, resources and manpower. Hence, using digital noticeboard through wireless communication can interconnect the people easily in a less amount of time and using wifi network gives a wide area network that permits to transfer the information into text message through LED display that will act as a notice board. As stated in the research the main propose is to develop a wireless notice board that display message or the information sent from the user through a simple interface and which displays it on LED screen. To originate a Wi-Fi driven automatic display Board which can replace the presently used paper based notice board and conventional notice boards. So this document gives us clear idea of how to change the contents of Digital display using Wi-Fi. So for that we use some Embedded as well as communication idea and using Arduino board we try to implement our system.

## III. EXISTING METHOD

The preprogrammed notice board method, while simple and cost – effective, suffers from several drawbacks. Firstly, it lacks flexibility in displaying real – time or dynamic information. Once the content is set, it cannot be easily modified or updated without manual intervention. This limitation makes it

unsuitable for situations where frequent updates or the ability to showcase real – time data are necessary.

Furthermore, updating a preprogrammed notice board can be a time – consuming process. It requires physically replacing the existing content with a new information, which can be labour – intensive and inefficient, particularly for larger notice boards or scenarios where information needs to be updated frequently. Additionally, someone must be physically present at the notice board location to perform the updates, further complicating the process.

DRAWBACKS: Lack of Flexibility
Time consuming updates
Inefficiency of communication
Do not allow for real-time updates.
It requires physically replacing the existing content with new information.

## IV. PROPOSED METHOD

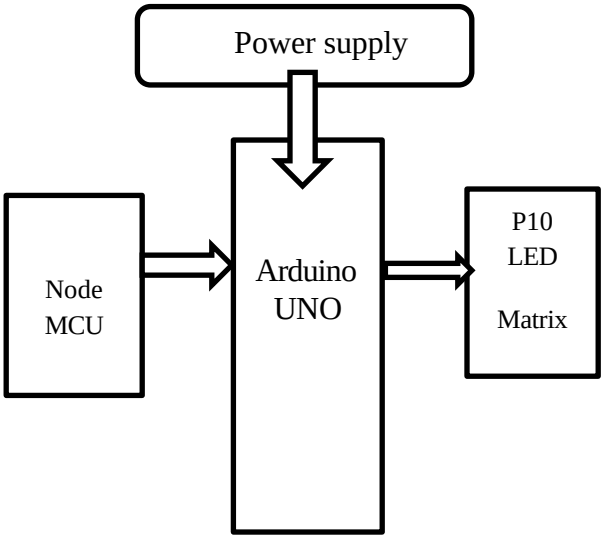
An alternative and more advanced approach to notice boards is the integration of IOT technology. By leveraging IOT, notice boards can become smarter and more efficient in delivering information. This proposed method involves connecting the notice board to the internet and enabling dynamic, real – time updates through a web server or other means. By incorporating IOT into the notice board system, several advantages over the existing preprogrammed method can be realized.

The proposed system can be used for accessing notices on android devices, students need not visit the notice board every time, and they get notifications regarding any information related to their college. Existing system is fully manual. Occasion expenditure is additional for penetrating the in sequence.

## V. WORKING

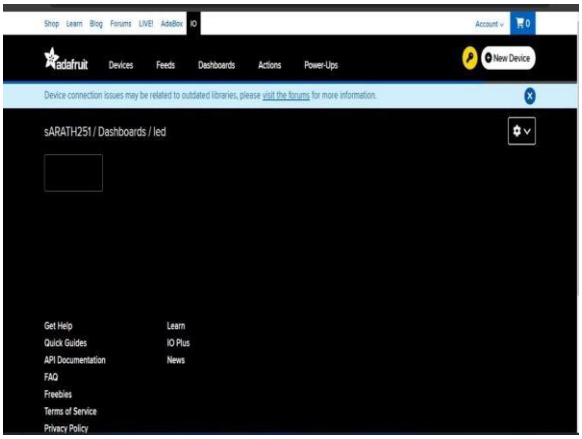
Firstly, we can create an account in Adafruit IO then after login we can create the dashboard name as text and same as create feeds. Feeds also in the name of text. Then create a block name is text box, the text box is available in settings which is shown in right side up corner in your Adafruit account. After we can interface the NodeMCU to the mobile/laptop we can publish the information using Adafruit text box to LED display.

## VI. BLOCK DIGRAM OF PROPOSED METHOD

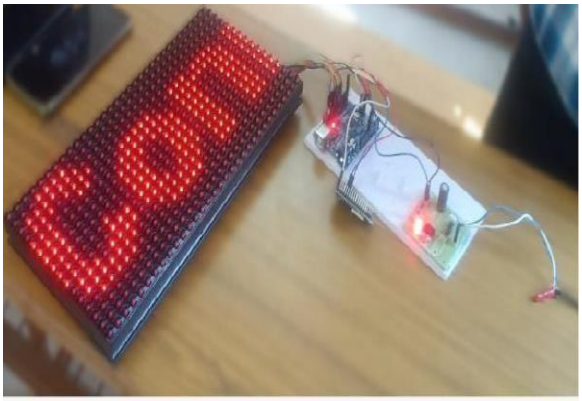



## VII. RESULTS AND DISCUSSIONS

This is the input text box in adafruit io platform used by user to give message to display on p10 display.




The output message was shown in the p10 display.



First of all, include all the dependent libraries in the program. Here we are using *"*DMD.h*"* Library for P10 led operations, download this library and install it in Arduino IDE. After that include the library for "TimerOne.h" which will be used for interrupt tasks. This library can be downloaded.

In the next step, define the number of rows and columns for the LED display board. In our case we are using only one module, so ROW value and COLUMN value will be 1. Then define the font name- Arial_Black_16 for the text scrolling on display board.

## CONCLUSION

In conclusion, introducing this technology in the field of communication holds immense potential for revolutionizing how we convey messages, enhancing efficiency, and speed. By leveraging this system, messages can be transmitted with greater accuracy and reliability, minimizing errors and the need for frequent maintenance. Its versatility allows for widespread adoption across various sectors, including colleges, schools, offices, railway stations, and commercial establishments. Whether it's disseminating important announcements in educational institutions or displaying real-time updates in public spaces, the system offers seamless communication channels. Its applicability extends to personal use as well, enabling individuals to convey messages effectively within their homes or communities. Furthermore, the system's scalability ensures it can accommodate the communication needs of both small- scale environments and large-scale infrastructures. Embracing this technology promises to streamline communication processes, fostering productivity and collaboration across diverse settings. Overall, its integration signifies a transformative step towards achieving more efficient and error-free communication in our interconnected world.

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