# WIRELESS INFORMATION HUB:BUILDING A SMART NOTICE WITH Wi-Fi

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## ABSTARCT

A notice board is used to display the information in an effective way to the people but to update messages instantly is not easy on the notice board. It is becoming a problem as they require manpower for printing and maintaining the notices up to date. Considering all these difficulties paper pin notice boards has to be upgraded to digitalization. In this project we are using a new concept of notice board based on Internet of Things (IOT) technology that makes the process of posting every notice very efficient and easy. So, we introduced the scrolling display which displays everyday data continuously. This system is interfaced with wireless fidelity (WI-FI) which offers speed and agility to display the information quicker than the programmable system. A microcontroller (Arduino uno) is used at the receiver to receive and display messages in the LED display. To update the notice board, one just need to login to the application and update the information. This system can be used in schools and colleges, public spaces, transportation system and events for displaying real time information such as schedules, directions and announcements.

**Keywords**:Arduino UNO, Wi-Fi module (HD-W3-P10 controller), LED P10 panel

## INTRODUCTION:

Inanageofinnovation,Traditionalnoticeboardsareundergoingaremarkabletransformation.The emergence of notice boards from physical to digital platforms has led to an advancedsolutionswithpracticalfunctionality.Thesmartnoticeboardshowcasesashiftincommunication methodologies, where it offers a dynamic alternative to conventional noticeboards in various settings such as schools, colleges, public spaces and community centers. Byutilizing the advanced digital technology, this innovation system aims to reform the wayinformationis circulatedand acquired.

## LITERATURE SURVEY:

Traditional notice boards consist of information which is paper printed and pins which has to be maintained well. This creates much problem for updating information and maintaining the notices up to date. So, this system came up with a solution of technological innovation i.e. maintain the notice boards using IOT technology. This method is much efficient compared to the traditional method. To update the information, one must need to login to the android application and update the message. The main theme of the system is to convey the information on the basis of android application and Wi-Fi technology. This results in decrease of paper waste and notices can be easily visible and conveyed to the people.

**EXISTING SYSTEM:**

Present notice boards are digitalized by using [1]GSM module is a communication-based tool that enables remote updating and display of notice via SMS. This notice board consists of a Arduino uno,GSM module which helps in send or receive the messages over the cellular network. This GSM module is connected to the Arduino via UART communication, the message which is received to SIM card, processthe received the message extracts the notice content along with any additional instructions.Once the notice content is extracted, the microcontroller updates the display accordingly. Later. GSM module is updated to [2] Bluetooth connection where u can send the notice or instructions through a mobile application, But the Bluetooth connectivity can engage only for a limited distance.

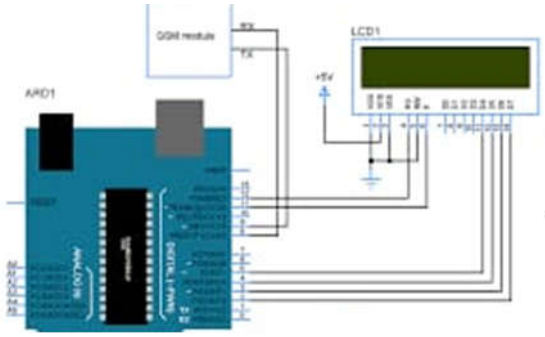


Fig:[1]GSM module connection diagram

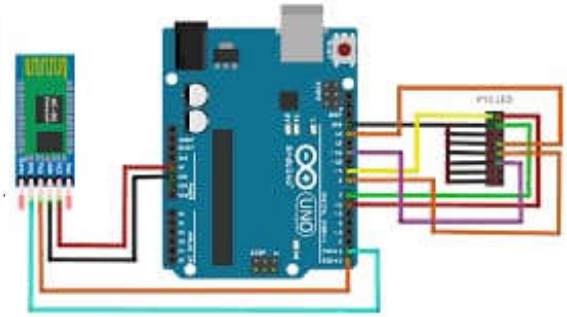
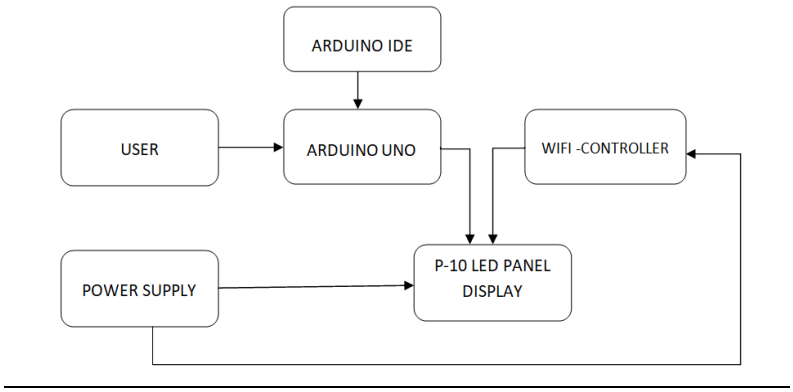


Fig:[2] Bluetooth module connection diagram

**PROPOSED SYSTEM**:

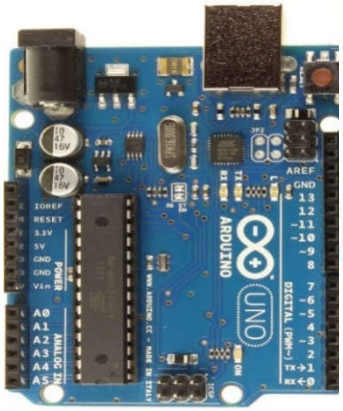
Usually, traditional notice boards consist of information on papers. As day-to-day life is running with updated versions our notice boards are also innovated to digital boards with latest IOT technology. As of now the latest technology is implemented by IOT up to Bluetooth connectivity, but the main drawback of this is that the information which has to be updated to the receiver is getting restricted only to a limited distance. So, to overcome this drawback we came with a new idea i.e. replacing the Bluetooth with Wi-Fi module.[3] Proposed system consists of Arduino uno with IDE software, Hd-w3-p10 controller, LED matrix display, male to female connectors. We developed the firmware for the Arduino uno to control the display screen and connectivity. Using C programming and implemented features such as displaying notices and receiving commands over Wi-Fi. This logic helps in updating the daily notices. By using Wi-Fi module, we connect it to local WIFI network, which helps in communication in an effective way. The display content and layout can be customized according to specific needs and preferences making it versatile for various applications such as offices,schools, public spaces, and events. Smart notice boards utilize low-power components and technologies like e-link displays to minimize energy consumption, making them suitable for continuous operation. Smart notice boards using WI-FI modules offer a modern and efficient solution for sharing information in both public and private settings, enhancing communication and engagement.




FIG[3]: Block Diagram of smart notice board using wi-fi controller

**SYSTEM DESCRIPTION AND IMPLEMENTATION**:

The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller (MCU).The microcontroller board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. Arduino Uno is connected to P-10 LED display, is a device consisting of an array of light-emitting diodes (LEDs) arranged in a grid pattern.LED matrix panels are often controlled by microcontrollers like Arduino, Raspberry Pi, or other embedded systems, some panels support wireless communication protocols like Bluetooth or Wi-Fi for remote control and updating content.The W3 Controller is a powerful LED display controller designed for users who need to control single-color LED displays. Its user-friendly interface, compatibility with P10 single-color LED modules, and intuitive controls make it a reliable and cost-effective solution for both beginners and professionals. This system is implemented by connecting Arduino uno and LED panel display to Hd-W3-P10 controller for sending and receiving the messages over any network configurations for efficient communication. When user sends a data over network through Wi-Fi module which is transferred to LED panel and displayed on it.



FIG[4]: Arduino uno

FIG[5]: Hd-w3 p10 controller

EXPERIMENTAL RESULTS:


Fig : Output for the command”WELCOME TO VIGNAN”


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Fig : Output for the command ”SMART NOTICE WITH WI-FI”


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**CONCLUSION**:

In conclusion, the smart notice board project is based on the wi-fi technology for efficient communication and provides real time updates. Hd-w3-p10 controller enables a seamless communication between the notice board and other devices. This flexibility ensures compatibility with various network configurations, making the system adaptable to different environments. In this system the controller connects the notice board with the wifi and updates the information and notifications from Android application and displays it on the notice board. Through this project one can convey the information through Android app within the Wi-Fi range. This implementation is much more efficient in the schools and colleges as the main people in the institution can update the information easily and convey it to the students in an efficient way.

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