



## LED Display Board using Raspberry Pi and IoT

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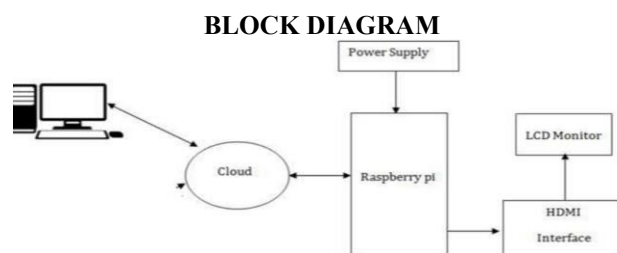
### ABSTRACT

IoT is “Internet of things” which describes physical objects that are embedded with sensors processing an ability, software and other technology that connect and exchange data with other devices and system over the internet. Automation is the most often spelled term within the field of electronics. The hunger for automation brought several revolutions within the existing technologies in electronics in our country. Notice board could be a primary factor in any establishment or public places like bus stations, railway stations, colleges, malls, market lines etc. Sticking out numerous notices day to day could be a tough method and wasting times also. A separate person is needed to handle this notice display. This project is IoT based Web Controlled Notice Board, Internet is employed to wirelessly send the message from Browser to the liquid crystal display. A local web server is created, this could be a global server over net. At the Raspberry Pi, LCD is used to display message and flask for receiving the message over network. When Raspberry receives any message signal from web browser its displays on led.

**Key words:** Raspberry 3, HDMI Interface, Web Server, Graphics LCD, Internet of Things

### INTRODUCTION

The Notice is mostly used in multiple places needs urgent notices such as colleges, railway stations, bus stations, malls, market lines etc, and this notice should be in real time, so we need real time notice board. This project is our experiment to give start to the real-time notice board using IoT. (1) Ganesh E. N. IRJCET 2019 Wireless Innovation provides fast transmission over the transmission of long extended information used in this paper. It saves time, tolls cables, estimates the framework. Information can be sent anywhere in the world. Username and password sorting confirmation framework is provided to include security. A tech note board using a Wi-Fi module has already been used. In that, the scope was limited, in our framework the web is used as a medium of communication. (2) Divyashree M, Harinag Prasad, Sandeep GT, Bhavya SN, Pournima S IRJET 2018. This paper uses advanced remote IoT based web-controlled tech note board, web to send messages wirelessly from browser to fluid gem show. Neighborhood web servers can create servers around the world on the net. In Raspberry Pi2, the LCD is used to display the message and the camera is used to receive the message. (3) M. Arun. P. Monica and G. Elegance IJCAT 2017 The IoT based web-controlled notice board has Raspberry Pi2 with LCD display as the smart system acts as the central server of the proposed system and the notification panels are accessible only by logging in. Proper credentials in Raspberry Pi Server. Raspberry Pi2 serves as a server and is connected to the Internet using the appropriate IP address, so a certified user of this system can log in from anywhere. It is simple way to introduce client neighborhood framework which may get and show take note in specific manner with pertinence and time which is able offer assistance the client to essentially keep the track of notice board each day.

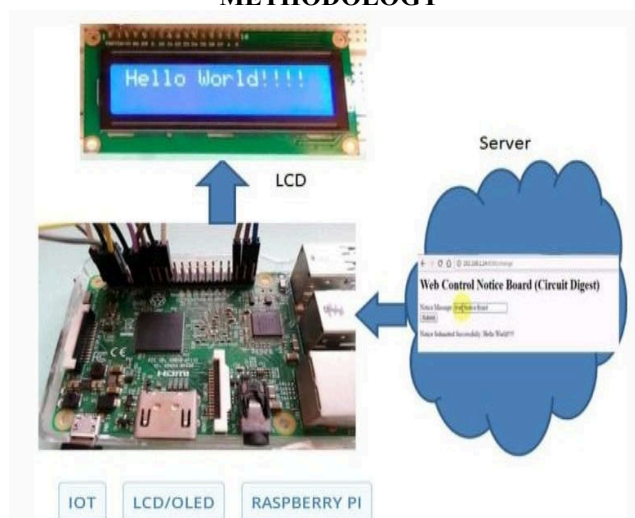


**Fig. 1** Proposed Methodology of IOT and Raspberry System

### OVERVIEW

The figure above shows the block diagram for the proposed system. The main objective of this system is to develop wireless notification boards displaying notifications in image, text, pdf format. It uses raspberry pie as the processor. Raspberry Pi is equipped with a portable projector / LCD display. We can display messages and easily set or change from anywhere in the world. In addition, mobile applications are used to convert voice into text. Here the voice is passed through a voice rearrangement system and converted into text. The system will send this message to the cloud. It then goes to a notification board connected to the Internet via Wi-Fi. Processor, process it and display it on the screen. We can send messages all over the screen or to the desired screen.

### METHODOLOGY



The main function of the proposed system is to develop a digital notification board that displays messages sent by users via the Internet, and to create a simple, user-friendly system that can receive and display notifications in a specific way in terms of date and time. It will help the user to easily keep track of the notification board every day and every time he uses the system. The system consists of two sections, sender and receiver, as shown in Figure 1. The sender is responsible for sending valuable information over the wireless network. To access the digital notification board, the sender must access the relevant web address. We provide security authentication, such as usernames and passwords, to prevent unauthorized access to web addresses. If the username and password entered are invalid, the user cannot access the digital notification board. When the user enters the correct password and username, the web address will open and there will be space to transmit information.

The user can access this web address using a personal computer or mobile phone. We build an Android application to make the proposed system more user friendly. The sender can access the web address directly using this application. In addition, the Android application has a voice to speech converter. So, the sender can send a text message in his own voice without typing the message. These messages will be sent to the cloud along with the text file, image file and PDF file. In its simplest language, the cloud is all about storing and accessing data and programs on the Internet instead of your computer's hard drive. The cloud is just a metaphor for the Internet. In the receiver section, Raspberry Pi is connected to Wi-Fi to access the Internet. The Raspberry Pi is a low-cost, credit-card-sized computer that plugs into a computer monitor or TV and uses a standard keyboard and mouse. It is a capable little device that enables people of all ages to explore computer.

### CONCLUSION

The proposed system was successfully tested to demonstrate its effectiveness and feasibility. This system eliminates the need for manual display of notice boards and can be used as a replacement for ordinary display boards.

In the future, a database may be created to store displayed messages, so that old messages can be tracked. Illustrations are more imaginative than content when it is not possible to have an illustration LCD screen attached to the display hub. It would be nice if you could put a message in the database and flash it for a predefined period. Using the e-notification board instead of the traditional notification board, we will move towards the green planet.

In this paper we have displayed a curious e-notification board which can show the message immediately without any delay. It's very customizable and messages can be customized for each show. We have an office to send the same message to all show hubs. This is exceptionally very solid because intranet associations can be much better than GSM based frameworks. Furthermore, since the Raspberry Pi3B server is connected to the web, authorized clients can send data from anywhere. This framework distributes tech note sheets with manual show cause and can be used as a substitute for normal show sheets.

### REFERENCES

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