

Real Time Notice Display System using Cloud

Sachin Darekar¹, Bhagyashree Davane², Swati Khose³, Alisha Panigrahi⁴

¹Asst. Professor, Dept.of IT, Bharati Vidyapeeth College of Engineering, Navi Mumbai, Maharashtra, India.

^{2,3,4}UG Students, Dept.of IT, Bharati Vidyapeeth College of Engineering, Navi Mumbai, Maharashtra, India

Abstract - Now a days the advertisements are digital. Notice boards are widely used ones ranging from primary schools to bus or railway stations to convey messages at large. In schools and colleges notices are displayed on paper. So this is very hectic process to write a notice on paper then take permissions and signatures from faculties and HODs. To reduce the waste of paper and time we have developed the Real Time Notice Display System which displays notice on the board by using raspberry pi with cost effective method and in a convenient way to display notice. One of most obvious reason is the drastic effect of LED display to capture attention. Which gives good impression in front of people and crowd. Applications are developed having a feature called real time update. These applications include domestic devices such as TV, smart phones etc., so why not smart boards.

So this project is developed with Raspberry pi 3. The Raspberry pi provides all the functionality to display notices. Real Time Notice Display System using Cloud is a task of displaying notice on the notice board using Raspberry pi which will be sent only by authorized user through cloud. The notice board is a user friendly system which can receive and display notice in a particular order with respect to date and time which will help the authorized user to easily keep the track of notices on the board each time when user uses the system. It provides user a simple, fast and reliable way to put important notices on LCD Display.

Index Terms – Raspberry Pi, LCD Display, Web Server, Electronic Components.

I. Introduction

This project provides ease of communication between administration and students in colleges. Whenever a notice is passed, it can be directly displayed on the Digital notice board, without efforts like printing on a paper and then attaching it manually to the notice board. Many of the students don't have a habit of continuously check and read the notice board. But using digital notice board we can directly display it on a big LCD display board, which can be easily read by many students at a time. Hence most of the students can quickly come to know what is the notice and the important message is conveyed to all. The notice keeps on rolling over and over. Keeping these importance of display system we are presenting our paper to help in improving the communication between administration and students.

This has been implemented on LCD (Liquid Crystal Display). The URL which will be used by users has been hosted on a web server and a raspberry pi use to display text on display device. The entire system is modular with scalable and secure authentication levels, real time syncing of notices and an omnipresent cloud support. Practically, all resolutions are supported. The font size is customizable and it can display written documents as well as images at the same time.

The main aim of our project is to eliminate the use of paper in many organizations and institutions by replacing paper with LCD display.

II. Literature survey

Ashmita, Aarthy, Aditi, Dr. R. Ranihemalini Abhineyaa, 2017 proposed a Digital Notice Board Implementation via power line communication. Power Line Communication (PLC) provides high speed communication of voice and data. Power Line Communication uses lines for transmitting data. When a message is received, it is initiated using voice board.[1]

Dhara G. Rangani, Nikunj Tahitramani, 2017 proposed a Smart Notice Board System. Here MQTT protocol and Arduino is used. MQTT is a light weight client server message exchange protocol. MQTT is even lighter than HTTPs protocol. Message sent from from an android phone or web interface goes to MQTT broker. ESP8266 will be connected to MQTT broker to receive an messages that MQTT receives. And then eventually a process will take place to display message on LED screen. [2]

Neeraj, Divya, Sambhavi Awasthi, 2016 proposed a Development of simple and low cost Android Based Wireless Notice Board. Bluetooth or Wifi based communication is done by the android users. Transceiver module with the microcontroller Bluetooth or wifi for data communication.[3]

Yash, Radhika, G. Shiva Shridhar, 2015 proposed a Large Screen Wireless Notice Display System. It uses only HTML script and uses Raspberry pi. SMS is received by GSM modem and stored in Subscriber Identity Module (SIM). Only few text messages is been displayed in LED. This HTML output can be displayed by web browser running on the Raspberry Pi.[4]

Dharmendra, Vineeth, Krishnan, B.A. Botre, S.A. Akbar, 2015 proposed a Small and medium range wireless electronic notice board using Bluetooth and Zigbee. Common compatibility receiver hardware for notice board having compatibility with both wireless modules (Bluetooth and Zigbee). Zigbee can transmit or receive data using a terminal software. It uses for data transmission range test.[5]

III. Methodology

The architecture of the system is as shown –

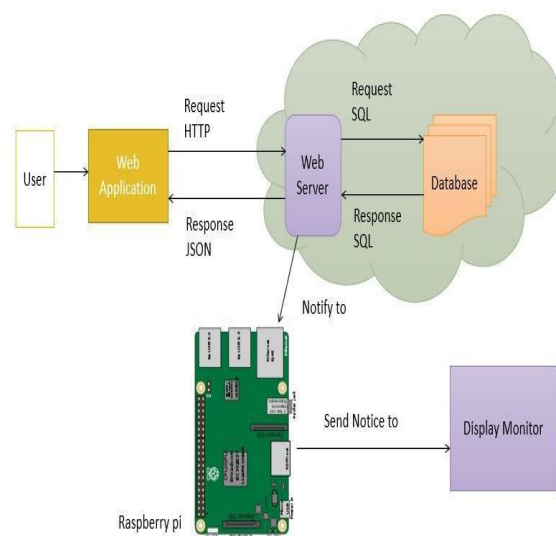


Fig : System Architecture.

Figure describes the proposed architecture. The ultimate goal of the system is to develop a wireless notice board that displays notices in the form of text and images as per the need. It uses a Raspberry pi as a processor. Raspberry pi is equipped with a Portable LCD display. We can display messages and can be easily set or changed from anywhere in the world. For that we will buy server and upload a script to insert data which we will access through URL. Using that URL we enter message then system will sent this message to cloud. Then it passes to the notice board which is connected to raspberry pi and then displayed on the screen. System consist of two section called as sender and receiver. Sender is responsible for sending valuable information through the wireless network. In order to access notice board the sender must enter into the corresponding web address. For preventing unauthorized access to web address we provide security authentications like username and password. If the username and password entered are invalid then the user can't access the notice board. When the user enter correct password and user name web address will opened and get space for the Information transmission. User can access this web address using personal computer. To make the proposed system more user friendly we have created URL. By using this URL sender can directly enter these messages includes text file will send to the server. And here we have used **000webhost** server for hosting the website.

In the simplest terms, server means storing and accessing data and programs over the Internet instead of our computer's hard drive. Raspberry pi is connected on Wi-Fi for accessing internet. Raspberry pi is a capable little device that enables people of all ages to explore computing, and to learn how to program in languages like Python. It's capable of doing everything you'd expect a desktop computer to do, from browsing the internet and playing high-definition video, to making spreadsheets, word processing. Raspberry pi is activated by supply power around 5v. After switch on Raspberry pi, it will collect data from the cloud. The web address for collecting data from the cloud is already specified through program written in the processor. Upon receiving messages it will displayed on the monitor. Raspberry pi has no VGA port. So in order to interface LCD monitor with Raspberry pi, HDMI interface is used. The received text messages are displayed on the screen like scrolling manner. Python code is used to creating the panel on which the notice will be display. Similarly received images will display on the screen. To achieve this, monitor screen is splitted into two sections. Each section displays each page. By certain delay notices are scroll up and down for fixed time interval.

1. System Requirements :

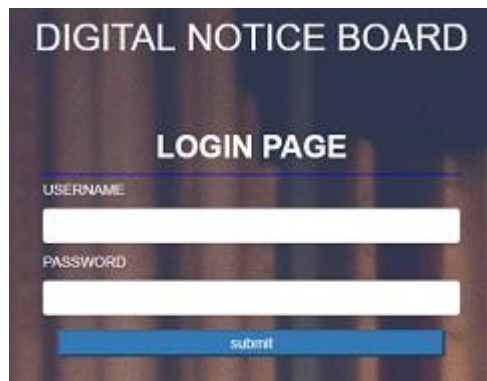
Softwares : Raspbian OS , Apache Server, MySql

Hardwares : Raspberry Pi 3 , SD Card , HDMI to VGA connector , LCD Monitor.

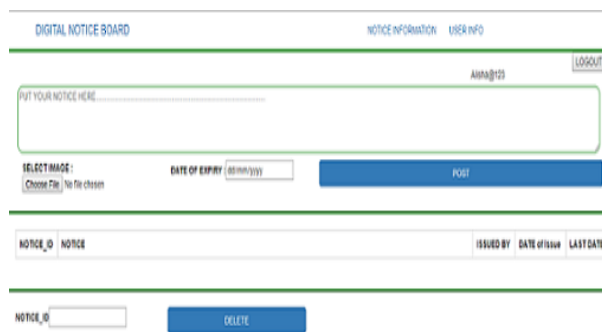
Languages : HTML , PHP , JavaScript.

2. Stepwise procedure to display notice:

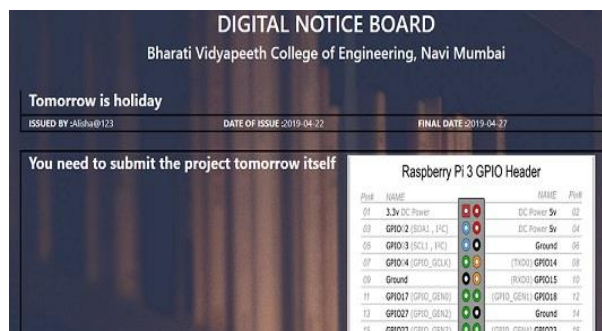
1. User need to sign up first
2. Log in with the correct credentials



3. Enter the notice and attach image



- 4. All data store in the database
- 5. Raspberry pi fetches the notices from web server
- 6. Display into the monitor screen/ LCD screen



3. Description of raspberry pi configuration with the monitor screen:

Monitor display is connected to Raspberry pi. The kiosk script is used to handle the bulk of the work for raspberry pi kiosk, including launching Chromium itself.

```
@xset s noblank
@xset s off
@xset -dpms
```

These commands are important as they help to stop the Raspberry pi's display power management system from kicking and blanking out of screen. These three commands set the current lxsession not to blank out the

screensaver and disables the screensaver altogether. The third command disables the dpms that make desktop interface should never blank out the screen

sudo nano/etc/xdg/lxsession/LXDEpi/autostart

To enforced desktop auto login and written kiosk script, need to go ahead and modify the lxsession autostart script by running above command on the raspberry pi.

@chromium-browser - -kiosk

http://bvcoenotice.000webhostapp.com

This flag sets Chromium to operate in Kiosk mode, this locks it into a particular set of features and only allows limited access to both the web browser and any other OS functionality. Chromium's kiosk functionality takes full control of the screen, maximizing Chromium to the full size of your screen and stops user input from being accepted by the OS.

http://bvcoenotice.000webhostapp.com

This could be the web page that the script will open when power on display monitor.

IV. Conclusion

Thus we have successfully designed a simple, user friendly system which can receive and display notice in a particular order with respect to date and time which will help the authorized user to easily keep the track of the notice board whenever authorized user uses the system. Thus it saves time and resources and making the information available instantly to the intended person. Thus we have achieved the aim of this project of digitizing the existing conventional bulletin notice board with a much more efficient and versatile digital one. This system can be used in various applications like banking, schools, restaurants, offices, hospitals etc.

V. References

- [1] Ashmita, Aarthy, Aditi, Dr. R. Ranihemalini, Abhineyaa, Digital Notice Board Implementation via power line communication, IEEE international conference on computer and information science (2017).
- [2] Dhara G. Rangani, Nikunj Tahitramani, a Smart Notice Board System IEEE (2017).
- [3] Neeraj, Divya, Sambhavi Awasthi: a Development of simple and low cost Android Based Wireless Notice Board, seventh IEEE/AACIS international conference on computer and information science (2016).
- [4] Yash ,Radhika, G. Shiva Shridhar, Large Screen Wireless Notice Display System. IEEE (2015)
- [5] Dharmendra, Vineeth, Krishnan, B.A. Botre, S.A. Akbar a Small and medium range wireless electronic notice board using Bluetooth and Zigbee (2015).
- [6] Bhawna Saini, Rachna Devi, Shilpi Dhankhar, Mohammad ziaul-Haque and Jagandeep Kaur, "Smart LED display boards", International Journal of Electronic and Electrical Engineering (ISSN 0974- 2174), Volume 7, Number 10, pp 10571067© International Research Publication House (2014).
- [7] Ms.Shraddha J Tupe, Ms A. R. Salunke, "Multi Functional Smart Display Using Raspberry-PI" Volume 2, Special Issue (NCRTIT 2015), ISSN 2348 - 4853, January 2015.

[8] GSM Based e-notice board: Wireless communication International journal of soft computing and engineering (IJSCE). ISSN: 2231-2301, vol-2, issue-3, July 2012

[9] Vinod B. Jadhav, Tejas S. Nagwanshi, Yogesh P. Patil, Deepak R. Patil. "Digital Notice Board Using Raspberry Pi" IJRET, Volume : 03, Issue: 05 | May-2016.

[10] S. Arulmurugan, S. Anitha A. Priyanga, S.Sangeethapriya. "Smart Electronics Notice Board Using WiFi" IJSET, Volume: 03, Issue: 03 | March 2016.

[11] Jaydeep Raiyani¹ Mr. Dharmisht Dalsaniya. "Digital Signage Using Wireless Network" IJSRD, Volume: 03, Issue: 04 | 2014.

[12] Ajinkya sGaikwad, Tej Kapadia, Manan Lakhani, Deepak Karia. "Wireless Electronic Notice Board". ISSN, Volume: 02, Issue: 03 | 2013.