IJTRET "Voice of Innovative Minds"

International Journal of Trendy Research in Engineering and Technology
Volume 4 Issue 7 December 2020
ISSN NO 2582-0958

DIGITAL NOTICEBOARD USING IOT

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ABSTRACT

Notice Board is important thing in any college or institution and sticking various notices every day is a hectic task. Also to show all the notices on a small piece of paper is difficult. In this paper, we are presenting an idea of digital noticeboard which will be easy to operate and also support digitalization of india.

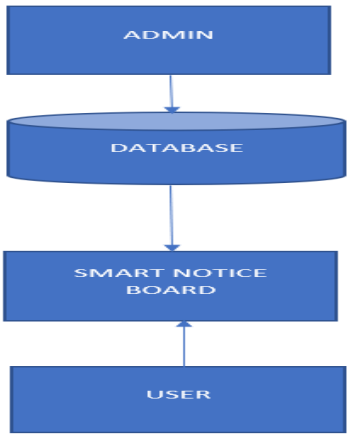
Digital notice board will be iteractive. For making display interactive we will use raspberry pi. Only authorized users like office staff and teaching staff can put the notices or can modify the old notices. Also we are going to use mic for speech to text conversion which will help to take input from user(student). WIFI module will use for data transmission which will be connected to raspberry pi. Here, we will use wireless system.

Key Words: raspberry pi, wifi, iot

1.INTRODUCTION

In the today's world of connectedness, peoples are becoming accustomed to easy access to the information. In this world everyone needs a relax living life. Man has researched various technology for his sake of life. Whether it is through the internet or television, people want to be know all the things and up-to-date with the latest events happening around the world , Wired network connections such as Ethernet has many number of limitations depending on the need and type of connection. The idea is to make a smart notice board using iot. Concept of Project revolve around making a smart notice board on which notices can be sent wirelessly. Project needs a Raspberry pi, HDMI, camera, microphone. Firstly, the user will be able to view general notices, searching for notices, etc. If the user wants some personal data or he/she wants to view notices related to them then they have to log in using QR code which will get sent personally on their email ID, mobile phones from college or institute. Once authentication is done using QR code the user can access any information using voice commands.

Traditionally used notice boards are current notice boards which have a lot of disadvantages in themselves like use of large amount of paper work, also involvement of peons for displaying notices.



Basic block diagram of project

The project's ultimate aim is consumer convenience and time efficiency. This goal can be achieved by using a digitized notice board implemented using Raspberry pi. The notice board will not only be digitized but also will be voice assisted. This will migrate the old system to new automated notice board. The user can access various notices using voice commands. Further more, the problem of displaying notices daily will not be hectic as notices can be sent from anywhere. Also, the use of paper work will get eliminated and the notice board will be

more convenient and user friendly. Using digital notice board this entire process can be simplified and made more user-friendly.

The remaining sections of this paper are organized as follows as: Section 2 gives a brief related work. Section 3 describes the methodology with Random forest machine learning algorithm. Section 4 describes the experimental results and discussion. We present our conclusions in Section 5

2.RELATED WORK

Literature Survey of Wireless Notice Board using Raspberry Pi (IJSRD-2017)

This project is built on ARM controller raspberry-pi (a small computer) which is the heart of the system. A display is obtained on the LCD. A Wifi is used for Data transmission. The good part of this project is it can display various data and files on the screen as well as it can set the timer for individual notice or video's which can be enabled or disabled according to requirements of the authorized user(office staff or teaching staff).[4]

Smart Notice Board:

In this paper, a GSM based smart notice board is developed . It includes two major units. The first unit is a mobile phone. Another unit is the control unit. The control unit contains a display(where notice will display), Arduino board, and the GSM module. The control unit will placed in different places. When ever any information or message has to be display on screen the user can send the messages as an sms to control unit. For sending messages to the display user has to be use the mobile handset.[3]

Implementation of voice recognition system using mic (ASCII):

The aim of this research paper was to illustrate the implementation of a Voice Command System(speech to text conversion). This system works on the primary input of the user voice. After taking voice commands as an input, they will able to convert it to text using a speech to text converter. The text made was used for query processing and finding relevant information. When the information was fetched, it will then converted to speech using speech to text converter and the relevant output to the user will given[6].

Exploring Concept of QR authentication and Its advantages in Digital Education System (ICACCI-2016):
This technical paper is based on concept of the Digital Authentication using QR Code in the Digital Education System. The purpose of paper to provide a better solution to Digital Security. This paper presents a prototype for digital document security specially. It is system which will store the record of any entity and generates the QR Code for the same. The generated QR code then used for checking either 1:1 or 1: N matching. The main purpose of this paper was to make a system which authenticates users.[5]

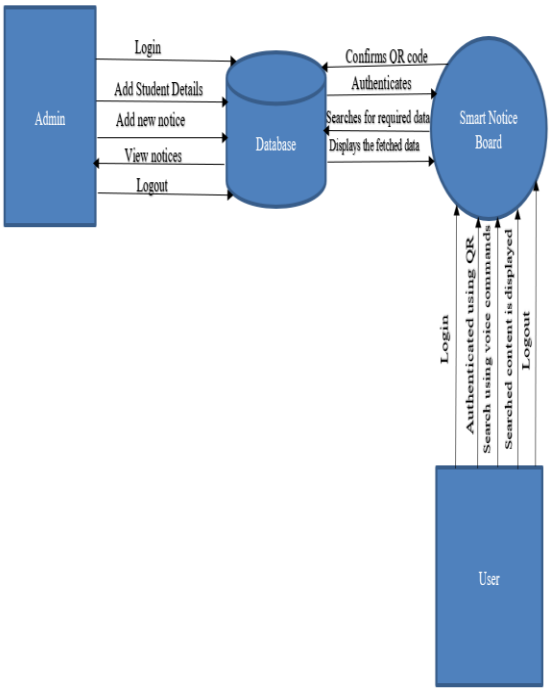
Smart Notice Board Using Raspberry PI (IRJET-2016)
This project aimed that a user sends a notice to Digital Monitor from an Android application(app) based on Raspberry Pi. Notice Board has been recalled at the first. In the second part, an application has been developed based on the Android frame work. A Wifi module is used for Data transmission. The authenticate user can add or remove or alter the text according to their requirement. At transmitter authorized computer is used for sending notices. At receiving end Wifi is there. The data will received from the authenticated user.[1]

3.METHODOLOGY

The aimed system includes how we will be using various techniques to make a better notice board. Earlier notice board was just a simple display of notice but the notice board we are making will be interactive. In this project, we will use Raspberry Pi for making our Display as interactive. We will use the mic to take a primary input. To take input voice through the microphone, we will do speech to text conversion. If there is too much noise and machine are unable to get input properly from the mic, then there will be a secondary input device i.e. synaptic(optional). For communication between Raspberry Pi and main machine we will be using the client server model. There would be a portal from which faculty will be able to upload any notice any time. To make the system more secure there would be

only internal network i.e. LAN connection. For student authentication, we will use QR authentication. For teachers and office staff there will be a Different layout of the notice board. They can see the student's statistical data on his or her performance by simply giving the voice command. Earlier the digital notice board had limited options because of the GSM module but in our project, we will use a Wifi module which will give us more options and flexibility.

We are using a implementation of speech to text conversion in this paper for taking input from the student. If the user wants to see specific data, the system will take voice as input for this purpose and it will get converted into text so that we can process the request and can give user appropriate data.



Working of the project

General notices can view by the student without any authentication. To see details specific to them, a student can authenticate to themselves with the help of QR code authentication.

Software and hardware tools used:

A. Raspberry pi :The Raspberry Pi is a small computer that costs around RS 3000 . Its available every where and can work as a proper desktop computer or can be used to build a smart devices. The Raspberry Pi Model B+ is the latest production of Raspberry Pi 3 featuring a 64 bit quad core processor run at frequency of 1.4 GigaHz. To take benifits of the improved power management on a Raspberry Pi and provide the better support for even more powerful devices on the USB ports, a 2.5 Ampere adapter is recommended.

B. HDMI:
HDMI is stands for High Denition Multimedia Interface and is most frequently used HD signal for the transferring both high denition video as well as audio over a single cable. It is used to see content on notice board from the Raspberry Pi.

C. Display:
It is an electronic device use to see content on it. It is available in various sizes depending on the place or area where it installed, after approval of the notice, it's the display which shows the intended notice to its user with the help of raspberry pi.

D. Microphone: microphone can used to take input sound.
The sound is detected by microphone and an electrical signal will transmitted to Raspberry Pi. Special API is use to convert this analog data into the text so it can get stored and manipulate.

E. QR code and Scanner:
It is use for authentication purposes. A unique qr code will get generated to check the authenticated users. A camera is used for scanning of QR code and the user will get authenticated if he/she exist in the system.

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4.FUTURE SCOPE

The Scope of our project is to give ease to display notices. With Digital Notice Board we can simply update, remove or can enter notices without wasting too much of time. A student can also see information related to there choice. For example his performance, any event reminder or kt results, etc in which he/she participated. Even teachers can access this notice board and see students information and performance. The performance of students will get displayed in text or a visualized format with the help of data mining and the data visualization. Notice board will not only get used in the field of colleges or institutes but also in other sectors like business organizations, banking and other places too.

5.CONCLUSION

In today's date the world is migrating towards the automation of things, so in the world, if we want to do some sort of changes in the previously used system we have to use the new techniques. The wireless operation provides the fast transmission with the huge range for communication. It saves resources as well as time. Data can be sent from a remote location. User's authentication is provided. In earlier versions of digital notice board, it were using GSM, in that there was the limitations of messages but in our project Multimedia data can be store on a chip or on SD card.

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