IOT Based Digital Notice Board

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ABSTRACT

Digital notice board is designed with Raspberry PI which provide android app too. This is IOT based product. We can post notice through android app and it will show on digital notice board. We can remotely change the notice through our app and registered user also get notification on their phone. Notice board is a common device that is used to display information. Many universities and other public sectors relay on wooden notice board for displaying the announcements.

This paper emphasizes on basic idea of IOT based digital display using raspberry pi. The primary aim of the proposed system is to ensure that information send from remote place is displayed on digital screens. Notice boards are playing very important role in our day to day life. By replacing conventional Analog type notice board with digital notice board we can make information dissemination much easier in a paperless community. Here the admin can control notice board through internet. So information can be send anywhere in the world and can be displayed within seconds.

Information may be in the form of text, image, pdf etc. PC is used for sending information and Raspberry pi is connected to internet at the receiving side. In addition to this an application which is installed on the admin's mobile phone can serve the same purpose. This application also contains a speech to text converter. So the admin can send text messages through his/ her own voice.

The application area of college or college department, retailer shops, advertisements, jewelry shops, showrooms, malls. We can also display multimedia notices. We can access it from anywhere. We can post notices, advertisements, thoughts, and many of things. Natural calamities will affect the hardware. The hardware should be maintaining properly.

Keywords: Android system, Web server, Raspberry pi, Wireless notice board, authorized user, IOT, digital information distribution, digital information broadcast, internet.

INTRODUCTION

The main aim of the notice board is to locate all college events like international conference, workshop and other college event. The design is done in such a way that the system is less in space. This digital project is design to develop a pc controlled scrolling message display notice board. As technology changes the way we live our day to day lives, it is fascinating to imagine what the future will bring. People want to be informed and up to date with latest events happening around the world.

Nowadays, people prefer wireless connection because they can interact with people easily and it requires less time. Wireless is a popular technology that allows an electronic device to communicate with other devices without any linking of physical media between them. The main objective of the project is to present a notice on a digital display using the widely used technology IOT, to facilitate the displaying of the notice on digital unit through an administrator's mobile application.

The notice board is authorized as important information of element or public like transformed area as bus, railway station, airport etc. is use of notice board. The technology of use in daily routine sticky notice in old situation. At the individual is take care is this notice is display the replaced is the required the advance wireless notice board. Basic of the project in display is every day the notice and backup off all history. IOT use of Ethernet module in notice board.

INTERNET OF THINGS (IOT)

The term Internet of Things generally refers to scenarios where network connectivity and computing capability extends to objects, sensors and everyday items not normally considered computers, allowing these devices to generate, exchange and consume data with minimal human intervention. There is, however, no single, universal definition.

The Internet of Things (IoT's) can be described as connecting everyday objects like smart-phones, Internet TVs, sensors and actuators to the Internet. The devices are intelligently linked together which enables new forms of communication between things and people, and between things themselves. Building IoTs has advanced significantly in the last couple of years since it has added a new dimension to the world of information and communication technologies.

RASPBERRY PI

The Raspberry Pi is in 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 computing, and to learn how to program in languages like Scratch and 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, and playing games. The Raspberry Pi isn't just a great platform for building Internet of Things (IOT) project: It's a super platform for learning about the IOT.

LITERATURE SURVEY

1. Display Message on Notice Board using GSM. [1] Reference no 1. This paper deals with an SMS based notice board incorporating the widely used GSM to facilitate the communication of displaying message on notice board via user's mobile phone. Its operation is based on microcontroller ATMEGA32 programmed in assembly language. ASIM300 GSM modem with a SIM card is interfaced to the ports of the microcontroller with the help of AT commands. When the user sends a SMS via a registered number from his mobile phone, it is received by SIM300 GSM modem at the receiver send.

Electronic Notice Board with Multiple Output Display Prof. Kruthika Simha Shreya Chethan Kumar, Parinitha C, Shashidhar Tantry (Department of Electronics and Communication Engineering, PES Institute Of Technology, Banglore College of Engineering Belagavi, India) In this paper simha, it can be easily integrated with general purpose display board to provide its mobility.

The system accept the message from of SMS and display on the notice board. Development of Simple and low Cost Android Based Wireless Notice Board Neeraj Khera, Divya Shukla, Shambhavi Awasthi In this paper the technological advancement of the notice board is purposed that will help to save time and resources. Also it makes the information available fast to the person. GSM based Smart Home and Digital Notice Board This paper is based on home controlling application and notice displaying using android has been built. This project is based on the LCD display and LPC2148 Microcontroller.

Limitations:

a. SMS Based system.
b. Unable to display Audio and Video.
c. No Scheduling.

2. WIRELESS ELECTRONIC DISPLAY BOARDUSING GSM TECHNOLOGY.

[2] Reference no 2 .This paper discusses the design of SMS driven automatic display Board which can replace the currently used programmable electronic display and conventional notice boards. It is proposed to design

receive cum display toolkit which can be programmed and later be used from an authorized mobile phone.

Limitations:

a. Uses LED Board.
b. Unable to display Audio and Video.
c. Limited number of Character.

3. Design and Implementation of Digital Notice Board Using Power Line Communication.

[3] Reference no 3. The paper proposes one such application for automating an educational institution by replacing manual notice boards or circulars by digital notice boards. With a centralized database, frequent updating is easily possible. The system uses existing power lines to send the data to a special node or to broadcast to various power line nodes. The address is assigned to each receiver and it response based on their appropriate commands.

Limitations:

a. Limited number of Character.
b. Unable to display Audio and Video.
c. Need Power Line Communication.

PROPOSED SYSTEM

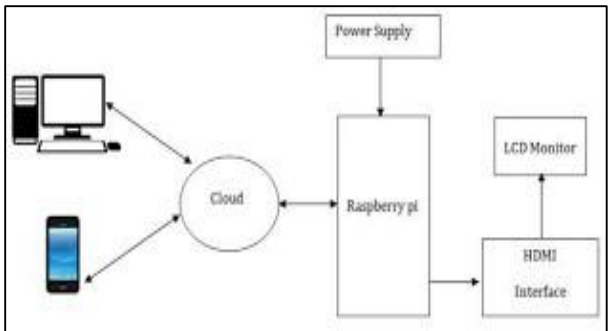

Figure 1: Proposed Methodology of IOT and Raspberry System

Input:

The data to be inputted is in the form of pdf format. The user can send multiple notices one after another to one or more display screens.

The input consists of two sub components:

- **Mobile Device:**

  This device can be a smart phone or a tablet which has an android application in it. With the help of this application, the authorized user is able to post the notice from any remote location via his mobile phone or a tablet. Information from this device that is to be outputted on the digital display screen is further sent as an input to the web server via internet i.e. Wi-Fi.

- **Desktop:**

  The input information that is being posted and displayed on the digital display screen (LCD) can be sent from a laptop or any computer device. The notice is sent from a desktop computer or a laptop just with the help of url access in web browser.

Server Processing: (cloud)

In order to access the notice board and distribute the notice to various other display units, it is necessary to have web platform. Thus to achieve this, creation of the web server is essential and the n notice is hosted on the 3rd party cloud service.

Server Processing consists of 2 major sub components:

- **Internet/Wi-Fi:**

The notice sent from the input unit is hosted on the web server via internet or Wi-Fi. Distribution of notice which is in the pdf format to multiple display screens is done over the internet from any remote location.

- **Web Server:**

This is also called as web portal based on cloud service. The notice is hosted on a web page using the cloud service with the help of accessing the web browser. Therefore, at server side, web platform enables the notice which is

posted on the web server to be broadcasted to multiple various digital display screen (LCD) through the internet. The notice is further sent to the digital display unit after selecting the post notice button on the web page. At a time, the notice is broadcasted to multiple different digital screens.

Raspberry Pi:

Here, the data is received from the incoming source and checks for the format of the incoming notice. If the format of the message is appropriate, then only it forwards the data to the display device and if not it keeps displaying the older message discarding the new incoming message. This mechanism is done by the operating system of raspberry pi called as raspbian using the programming language python. Each digital display unit is associated with different raspberry Pi to output the notice received from the web server. Pi 1, Pi2, Pi3 are the 3 raspberry Pi's linked to the desktop located at different places over a certain geographical area. This System makes use of Raspberry Pi3 which is the third generation Raspberry Pi. Pi3 is being replaced by Raspberry Pi2 which has built-in Wi-Fi and also consists of four USB ports, Bluetooth connectivity, 900 MHz RAM and many other advanced features

Client Processing:

The client side consists of multiple digital display screens or units called as LCD. Each display unit has a raspberry Pi associated with it. The final output is displayed on the digital display unit which can be a TFT, VGA, HDMI all these belonging to the LCD display unit. Display unit used for displaying the notices to multiple screens can also make the use of a normal television.

CONCLUSION

The IOT based digital notice board project in the using network. The resource of any time any place use of notice in advantages in messages in data transmission rate better messages quality. The friendly community environmental. Username password in security in project. The data backup, human resource, time saved, cables. The using multimedia chip data stored in SD card. Communication in messages and using WI-FI and Bluetooth. The text message and multimedia is better quality.

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