

Smart Info-Board System Based On Voice Recognition

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Abstract— Info-board is a fundamental military activity framework in way of life. Regular anticipated paper notice framework is long and not proper for quick sharing of information. We as a whole realize that the information tallies are unending. In this manner there's a use of huge amount of paper for showing those unlimited tallies of information. To beat challenges, quite a while ago looked by wood and conventional sort notice board, web may be utilized as a vehicle of moving data. During this arranged framework, web of Things(IOT) innovation is utilized that delivers the strategy prudent conjointly data in any type may be shown that's, content, pdf, pictures, word, and so forth., on the information board. PC is utilized for causing data and Raspberry pi is associated with web on the getting feature. A product is kept up to post the substance and this should be possible from anyplace utilizing web. This shrewd info- board will likewise show the data by simply questioning its document name through the voice of the approved individual.

Keywords: *Raspberry Pi 3+, Internet of things.*

I. INTRODUCTION

Noticing information is much essential on daily basis in most of the places like educational institutions, railway stations, banks, hospitals, shopping malls, and other organizations. In most of the places traditional and conventional method of noticing information is followed using paper and clip method. That requires a third party to replace and update information and maintain them. Also information is endless in this modern world use of huge amount of paper is required. To overcome all these challenges lots of systems has been in existence. One of them is by using GSM and Bluetooth, but data can be received only within specific metric distance. To display information LED display is used and only data in text format alone could be displayed, not in other forms like pdf, doc, images, excel, etc. Another system where without using GSM and Bluetooth, Arduino is used where through internet the data could be shared. The idea behind this proposed system is making noticing system in a smarter way by sharing the data anywhere at any time and in any form of data that can be in pdf, doc, images, excel, etc., In this modern and busy world, data must be transferred instantly hence internet is chosen as a common medium. Raspberry pi which is that the Heart of our framework. A screen is interfaced with Raspberry Pi. So data inside the kind of content, picture and pdf can show on the gigantic screens. In Educational establishments dominant part of information given from the upper specialists inside the kind of pictures or pdf design. So showing these sorts of data make our framework more easy to understand. on account of the utilization of web, the sender can send message

anyplace inside the world. there's no range constraint for the effective trade of information.

II. LITERATURE SURVEY

The paper [2] gives complete specification about how a notice board is essential in all public places and its importance. There for transferring of data Bluetooth is used which could cover only limited distances. Notification that is data is sent from any device to notice is displayed in a LED display, where only text could be displayed. Also data is sent which will be received by GSM modem and microcontroller is used with both transmitter and receiver at the sender side and receiver side respectively. the event technique incorporates accepting notification from cell phone by Bluetooth, Communication with NRF24L01 Transceiver, interfacing with GSM electronic gear, scrolling notice in speck grid LED show and parole insurance of seeing framework. However, data in other forms rather than text messages can't be sent or received. Data can't be stored in this system for future retrieval. In the paper [3] the same concept with NFC empowered portable distinguishes the NFC tag, it connects to a web page any place all the necessary data is keep. the site contains all the notification that are blessing inside the announcement board. each notice is transferred inside the pdf design all together that client will get to the notification easily. during a notice board, there'll a few notifications to be shown in view of that we've separated the announcement board into assortment of spaces thus. each space contains one notification. NFC empowered notification loads up is efficient as far as sparing time and conjointly easy to execute

III. EXISTING SYSTEM

Formal notice board system is built using GSM technology to display the notice. The GSM module which is situated in advance notification board is utilized to get the reaction from the approved client and display it. But in this method it is inefficiency in displaying the messages, since only text message will be displayed. Later Bluetooth technology has introduced that enables communication faster and easier. With the help of android application data transferring becomes easier using Bluetooth as a medium. But Bluetooth sends to only specific distance say in certain distance in meters. Also only information in the text format could be displayed. Most of the educational institution will have all the information in any file format, that

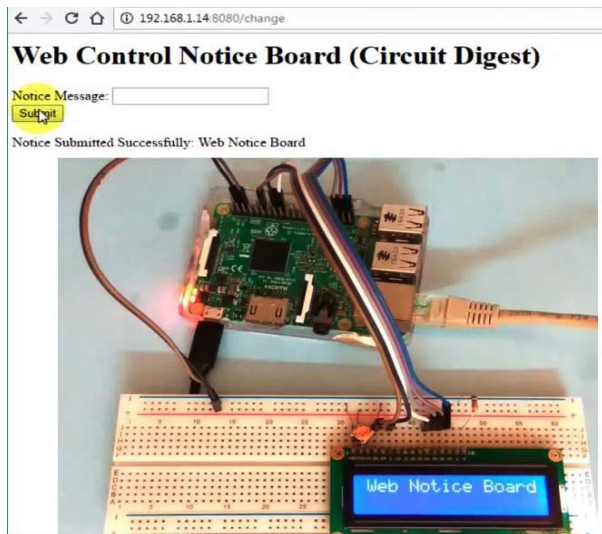


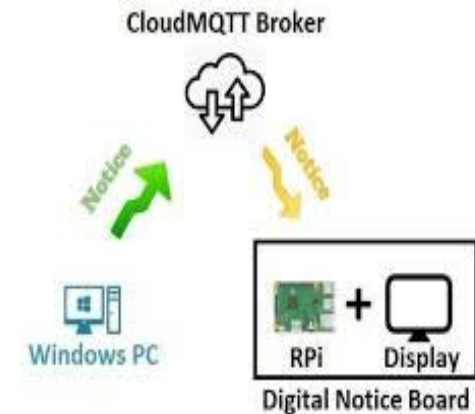
Fig: Existing system.

will not be supported by this system. To display information in all file format as well as storing the data has to be inbuilt there. Information must be transferred from anywhere at any time, but in existing system it was lagging. Data can't be stored in existing system, there was no medium for achieving retrieval process.

IV. PROPOSED SYSTEM

A. Overview

The main motto of this system is to develop a wise bulletin board system that displays notices within the kind of text, images, doc., pdf, excel, etc., Raspberry Pi is employed as a processor that is truly heart of this technique. Raspberry pi is provided with a liquid crystal {display|LCD|digital display|alphanumeric display} display. we are able to show messages and might be simply set or modified from anyplace within the world. The system can send this message to cloud. The cloud could be a virtual house that grants Users to store knowledge and several other services that gives us, which will be created through the web. At that point it goes to the notice board that is associated with net by Wi-Fi. The processor, technique it and showed on the screen. We can send the message to all the screens or wanted screen. For which a website is maintained to post the notices. In that site, we could decide the content of the file and its duration whether it has to be in the form of slides or to stay longer time. In addition to it, a mike will be placed in smart notice board to get the voice. By just querying the file name through the mike, the file will be displayed. Only authorized voice will be granted to display the requested file.



Fig(a): Overview of the proposed system. Fig(b): Raspberry Pi Model 3+

A. Methodology

This system consists of two sections called a sender and a receiver. Figure 1 illustrates the block diagram of the smart info-board system. The sender is responsible for the valid and informative content to be displayed on the screen, not all can post the content only authorized person can do that. For that sender must enter into specific website and enter into their account and shall perform various tasks, like posting and kind of file and its duration either in stay mode or in sliding. If the user is authorized, then they are allowed for information transferring else can't perform these action. User can access this web address either using personal computer or mobile phone. A server is maintained for hosting a web site, in that particular site only posting of notices can be done, also it is user friendly. To make this system more user friendly tkinter GUI framework is used where using a website we could login and post notice through PC, mobile, etc., Notices can be posted in any formats like pdf, doc., images, excel, etc., which will be there in the cloud server. In the simplest terms, cloud means storing and accessing data and programs over the Internet instead of our computer's hard drive. The cloud is the virtual space to store data and access through Internet.

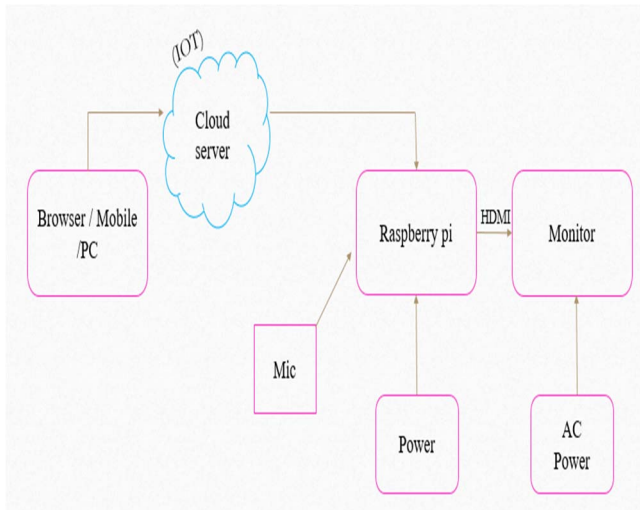


Fig: Block Diagram

In the collector area, Raspberry pi is associated on Wi-Fi for going to web. The Raspberry Pi could be a minimal effort, Visa measured PC that connects to a PC screen or TV, and utilizations a traditional console and mouse. it is a proficient little gadget that licenses individuals of any age to research processing, and to get the simplest approach to program in dialects like Scratch and Python. It can do all that you'd anticipate that a PC should plan to from perusing the online and playing top notch video, to creating spreadsheets, information preparing. Raspberry pi is initiated by supply power around 5v. After activate Raspberry pi, it'll gather information from the cloud. the web location for gathering information from the cloud is as of now indicated through program composed inside the processor. After accepting messages, it'll show on the screen. Raspberry pi has no VGA port. along these lines on interface fluid gem show screen with Raspberry pi, HDMI interface is employed. The got instant messages area unit showed on the screen like looking over way. similarly got pictures can appear on the screen. For showing Pdf records, introductory it conceived again into picture document by the program composed inside the Raspberry pi. when changing all the pdf pages in to photos then it'll appear. each 2 pages within the got pdf record can have shown directly to accomplish this screen is spitted into 2 segments. each area shows each page. once a particular defer future pages can have displayed. of those messages area unit showed back to back once brief pause. moreover, to this we provide Deletion and therefore the alteration plausibility at the web connection. On the off chance that sender must erase some picture or pdf record, he will just erase it by tapping the relating join inside the online content. Moreover, we tend to erase or change instant messages at whatever point we wish. once erasing the

messages from the cloud it'll precisely erased on the show once a fast pause. we will alteration the looking over content shading, content size, show illustrations, delay between the messages by simply made changes on the program.

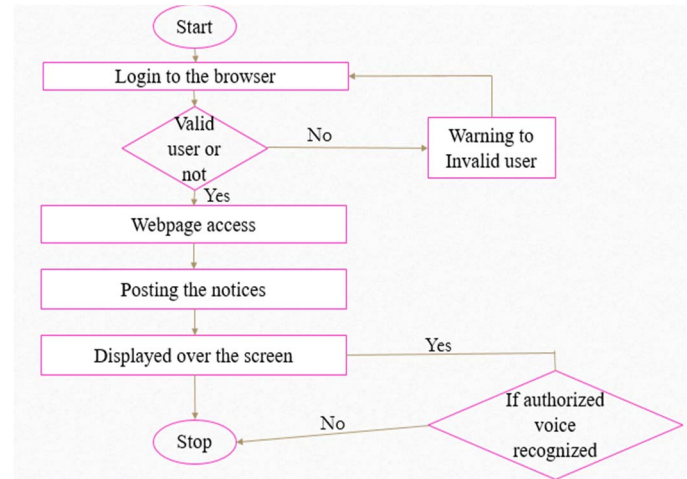


Fig: Data flow diagram.

B. Algorithm

The actual working of the smart digital board system are given below:

1. Start.
2. Enter into the webpage and login
3. If the user is authorized, then go to step 4 else go to step 2.
4. Choose the information in any format (pdf, image, doc, excel, etc.)
5. Save the message.
6. Set the duration of notice to be displayed in slide or stay longer.
7. Set the limit of the size of the file to be displayed.
8. If the received image is a smaller amount than the limit it'll directly displayed. Otherwise image can have resized.
9. Files received will be stored in FIFO (First In First Out)
10. Check for updates for every 5 minutes.
11. If it happens visit step eight, else visit step nine.
12. Repeat the higher than steps till power offer maintained.
13. Stop.

V. RESULTS

The smart info-board system is successfully implemented with efficiency and flexibility. In this paper, PC or mobile and a browser acts as a transmitter and Raspberry Pi acts as a receiver. Here both Sender and receiver is interfaced through a wireless network. A LCD monitor is connected at the receiver side. Raspberry Pi is connected with internet to access the data on cloud. Actually cloud is a virtual space that grants to store data and provides service to do task over it through the Internet. After establishing connection data stored on the cloud will be displayed.



Fig: login page for validating authorized user.

For noticing information, the sender has to login to the browser. If the sender is authorized, then it takes to the web page for posting notices else, it returns unauthorized access. So only entering correct user details it takes the sender to next page. In the next web page that is meant for uploading the post. There it contains icon for sending pdf files, image files, documents. Also setting the duration of each file can be done there. The screen can be split up into maximum of 4 split ups, since then we could get clear view of files. These will be uploaded in the cloud server. In addition to it, voice recognition is added where if one authorized person just say the file name to the mike which is interfaced with notice board, then it displays the queried file. The file will be stored in the cloud, the voice of the file name is converted into text and it retrieves the same and displays over the screen. The file will be converted into image, then only the notice will be displayed. Sometimes there comes the situation where images might be overlapped. For which predefined set of image size is required. When the image exceeds the defined size, it automatically resizes the image and display them.

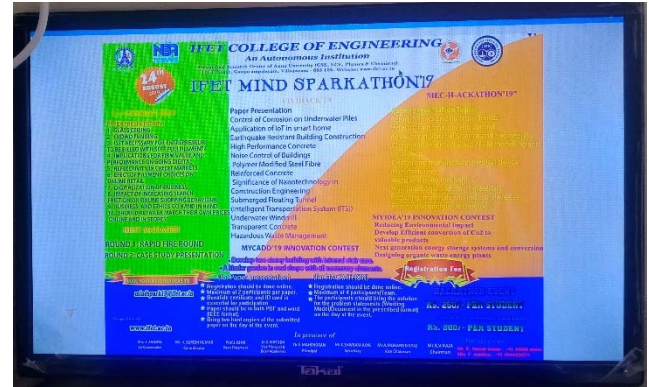


Fig: Notice displayed on the screen.

VI. ADVANTAGES.

Data can be in any form that is pdf, image, doc, excel, etc., all will be accepted and displayed in the screen. Data or information can be transferred anywhere at any time via internet. All data will be stored in the cloud server. LCD display provides high resolution than the LED matrix display. Power consumption is low and reduction of size comparatively.

VII. CONCLUSION.

Now our reality is moving towards clinical guide, along these lines on the off chance that we'd want to aim to try to a couple of changes inside the prior utilized framework we must utilize the new procedures. Remote innovation gives brisk transmission over long fluctuate information transmission. It spares time, cost of links, and size of the framework. information is going to be sent from wherever inside the planet. Username and Arcanum kind validation framework is accommodated adding securities. previously the board exploitation Wi-Fi was utilized. therein there was the verge of collapse of inclusion space, anyway in our framework net is employed as communication medium. Along these lines there is no downside with inclusion space. transmission information is going to be hang on chip or on South Dakota card. Instant messages and transmission information are going to be considered speedy to be potential with higher caliber.

Reference

- [1] Md. Eftekhar Alam, Shamima Akter Prama, Sanchita Sharm "Development of a Voice and SMS Controlled Dot Matrix Display Based Smart Noticing System With RF Transceiver and GSM Modem." International Research Journal of Engineering and Technology (IRJET), 23 April, 2019

- [2] Mr. Ramchandra K. Gurav, Mr. Rohit Jagtap, "Wireless Digital Notice Board Using GSM Technology", International Research Journal of Engineering and Technology, Volume: 02 Issue: 09, Dec-2018, e-ISSN: 2395 -0056.
- [3] Neeraj Khera, Shambhavi Awasthi, "Development of simple and low cost Android based wireless notice board", 5th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO), 7-9 Sept. 2017, Noida, India
- [4] Rajesh G.P1, Praveenraj Pattar, "Near Field Application: NFC Smart Notice Board", International Research Journal of Engineering and Technology, 4 august 2017.
- [5] S.ArulmuruganP, P.S.AnithaP, P,S.Sangeethapriya, "sensible Electronic bulletin board victimisation WIFI", - International Journal of Innovative Science, Engineering & Technology, Vol. 3 Issue 3, March 2017, ISSN2348-7968.
- [6] Jaiswal Rohit, Kalawade Sanket, Lagad Sanket, "Digital Notice Board", International Journal of Advanced analysis in pc Engineering & Technology (IJARCET) Volume four Issue eleven, Nov 2016.
- [7] Suma M N, Amogh H Kashyap, Sunain A Paleka, "Voice over WiFi based mostly sensible wireless notice board", SSRG International Journal of physical science and Communication Engineering (SSRG-IJECE) – Volume four Issue six – June 2017.
- [8] Modi Tejal Prakash, Kureshi Noshin Ayaz, Ostwal Pratiksha Sumtilal "Digital Notice Board", International Journal of Engineering Development and analysis, Volume 5, Issue 2, 2017, ISSN: 2321-9939
- [9] RajeebLochan Dash, Mrs. A. RuhanBevi "Realtime Transmission of vocalisation 802.11 Wireless Networks victimisation Raspberry Pi" International Journal of Engineering Development and analysis (IJEDR) two016 Volume 2, Issue one
- [10] GuoYinan, Zhang Shuguo, Xiao Dawei "Overview of Wi-Fi Technology" The second International Conference on pc Application and System Modeling 2017, revealed by Atlantis Press, Paris, France.
- [11] J. S. Lee, Y. W. Su, and C. C. Shen, projected a "A Comparative Study of Wireless Protocols: Bluetooth, UWB, Zigbee, and Wi-Fi", Proceedings of the thirty third Annual Conference of the IEEE Industrial physical science Society (IECON), pp. 46-51, Nov 2018.