

Real Time Notice Board Using Raspberry Pi

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Abstract : The system is about a remotely managed Real time notice board developed using Raspberry Pi and Python programming. It is a wireless notice board where a notice sent by the user is displayed on the LCD screen with the help of Wi-Fi connection. The notice or any information is sent to the Notice board through a website by authenticated users only. Since wired connections such as Ethernet has many limitations, the wireless technique is simple and easy. Notice Board is primary thing in any institution or public utility places like bus stations, railway stations, colleges, malls, etc. But sticking various notices day to day is a difficult process. A separate person is required to take care of this notices display. This project is about advanced wireless notice board. The proposed system aims to substitute another controller interface system with Raspberry Pi which will not only drastically reduces the cost involved but also will help achieving quality of services as the system will consume a smaller amount of power also. Using this user can remotely access & manage the notice board. Authenticated User can send notice from any mobile & computer which have internet connection. Authenticated user can use this from any place. No need to present in particular place. This notice board is real time so notice board update every time. Student can also see old notices in website.

IndexTerms – Raspberry Pi, Notice Board, HDMI cable.

I. INTRODUCTION

Everyone in this world wants a comfort living life. The Human have researched and developed many different technologies for sake of his comfort. In today's world people are getting habitual to easy access to information whether it's through the Internet or television people want to be informed and up to date with the latest events happening around the world. In this project we have designed a real time notice board through which a user can be able to display any information on the display screen from his phone or laptop. The main objective of the project is to design a robust and easy to use wireless notice board system, so that the common man can be able to use it to make his day to do life easier and faster. Since it is difficult for a person to pin up paper notices and information on a notice board as it needs lot of physical efforts. So the aim of the project is to develop a notice board which will be accessed with the help of wi-fi connection. The display is attached to the raspberry pi board which is connected to the wifi connection. The pi board is programmed with the Raspbian operating system, which is part of Linux. The user will be able to access this display through a website. The notice or information that the authenticated user sends from that website will be displayed on the display screen with the help of TCP connection. This display can be used at any crowded places to keep peoples informed all the time. As only authenticated users are being able to display data, so it will be more efficient if it is used as a virtual notice board at schools and colleges.

II. LITERATURE SURVEY

1. In 2012, Mr Vladimir Vujovic & Mr Mirjana Maskimovic explained the importance by how the pi can be used as a Wireless Router A wireless sensor network (WSN) is composed of spatially distributed nodes equipped with sensing devices to monitor and to measure characteristics of the physical environment at different locations. WSNs are designed and deployed for different purposes by various organizations. WSN based monitoring applications range from simple data gathering, to complex Internet-based information systems. In other words, the observations obtained from sensor networks may be helpful in many software applications like environmental, industrial and meteorological monitoring, building and home automation, medicine, urban sensor networks, intelligent transportation, security, military defense, etc

2. In 2016, Mr Aniket Pramanik, Mr Rishikesh, Mr Vikash Nagar, Mr Satyam Dwivedi. The message can be sent through an android application designed in this project, to the GSM SIM900 module which has a SIM card inside it. Similarly, a home automation system has been developed where home appliances like light, fan etc. can be switched on or off using the same android application designed in this project. So, using the android application, the home appliances can be controlled and notices can be put up in an LCD display from any location in the world. It uses a microcontroller for system control, GSM technology for communication and sends SMS containing the message through the android application. The project consists of a 32-bit ARM based microcontroller LPC2148, GSM SIM900 module, an LCD, a motor and an android application for user interface with the hardware. The device can be used anywhere irrespective of the place of deployment provided mobile network connectivity is available.

III. SYSTEM DESIGN

- Displaying notices on traditional notice board is time consuming as well as costly. There is time to time need of human intervention for changing the notices.
- The main objective of this system is to develop a wireless notice board that display messages sent from by the authenticated user using website and to design a simple, easy to install, user friendly system which can receive and display notice in a particular manner with respect to date and time which will help the user to easily keep the track of notice board everyday and each time user uses the system.
- Instant Information Update- No need to walk round pinning uplots of notices or posters.
- Environmentally Friendly- reduce paper and printer toner usage and costs.
- More Visual Messages- visual messages stand out more and attract attention.
- Live Information- can link to other computer systems for live information.

IV. IMPLEMENTATION

- When the raspberry pi is programmed with python language and is connected to the Wi-Fi connection, the TCP client and TCP server are generated.
- The Raspberry pi board will act as a server while user's Phone or laptop as a client
- The authenticated user will logged in to the user end website from there user is able to send any notice or information.
- There will be dynamic login for both user and admin. The admin is authorised to sent data to display while user can log in to see all the previous notices displayed on the notice board by the admin.
- The data sent by the user is stored on the SD card of Raspberry Pi as it acts as a server.
- Using python programming, that data is fetched from the SD card and displayed on the LCD/LED screen.

V. CONCLUSION

The proposed design of Real time notice board is integration of Software & hardware through which most of the complexities reduces, even systems sizes & costs are also reduced. Wireless technology allows the long distance communication in between transmitter and receiver without any use of wires. As wireless technology provides great accuracy, flexibility, proper displaying of text messages in the efficient way. Also in this system it user passwords or authentication is required so that there is no possibility to make the misuse of proposed system. Wireless communication exhibit long range communications efficiently than that through wires. The Raspberry pi automatically boots & displays the screen which avoids any configuration when there is power cut or raspberry is rebooted by mistake.

VI. REFERENCES

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