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DIGITAL NOTICE BOARD USING RASPBERRY PI

SHARDA PANDE[1], LAKSHMI KULKARNI[2], SHRILEKHA WADGURE[3], SANA SHEIKH[4],

PROF. M. P.DONGARE[5]

[1]*Student, B.E(Appearing), Department of Electronics and Telecommunication, Government College of Engineering, Chandrapur, Maharashtra, India*
[2]*Student, B.E(Appearing), Department of Electronics and Telecommunication, Government College of Engineering, Chandrapur, Maharashtra, India*
[3]*Student, B.E(Appearing), Department of Electronics and Telecommunication, Government College of Engineering, Chandrapur, Maharashtra, India*
[4]*Student, B.E(Appearing), Department of Electronics and Telecommunication, Government College of Engineering, Chandrapur, Maharashtra, India*
[5]*Assistant Professor, Department of Electronics and Telecommunication, Government College of Engineering, Chandrapur, Maharashtra, India*

ABSTRACT:- *Notice board is very important role in college, industry and any organization. The information can be send anywhere in the world and displayed within a second. Notice board are almost used in various departments such as offices, schools, hostels, hospital, colleges etc. Display important notice, advertisement, events. The information may be in the form of text, images, pdf etc. The mobiles or pc's is used to sending the information and raspberry pi module is used as a receiving side. The notice board are one of the best and important media to communicate. Notice board is provided easy communication between transmitter and receiver person. The notice directly displays on digital notice board using raspberry pi without any pen and paper use without any efforts. Notice board is basic concepts in any organizations or institute and it is also used in any public places. We can only type the notice in mobile phone and send the notice and display the digital notice board so time is saving and no use of any pen and papers. The main purpose of digital notice board is easy method to send the notice and spreading the notice in any public system and institutes.*

***Key Words*: - Raspberry Pi, Mobile phone, LCD, Wi-Fi.**

1. INTRODUCTION: -

Digital notice board is one of the best medium to convey the information to the people. The notice board are commonly use in institutes, organizations, conference hall and any public system. In a traditional notice board, we are using printed and a handwritten information on a board but in this case there is a wastage of paper and dependency on a person for display the notice and this problem is solved by using digital notice board.

In this system consist of voice alter digital notice board which based on raspberry pi and which include ARAM8 quad core processor and it has been implement on crystal display. Now a day this technology is used in everywhere.

Today people prefer for wireless connection because that can communicate with people easily and required the less time. The mains of the project to developed wireless notice board that display information to user and it user friendly system which can be received information and display notice in a proper way with respect to date and time. The problems faced by paper notice board would be resolved by the implementation of our digital notice board. GSM and Wi-Fi are the wireless technology used.

The main motto of this project is to present flexible notice board. The LCD display is connected to the Raspberry Pi and display the message.

In this system we are using n number of authenticated user can login in this application and send messages from anywhere and the message will be displayed in large screen LCD display.

1.1 BLOCK DIAGRAM OVERVIEW: -

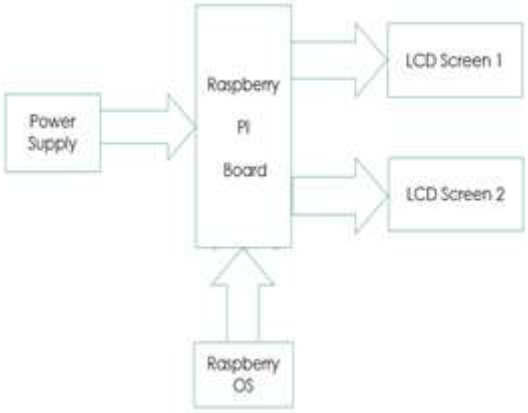
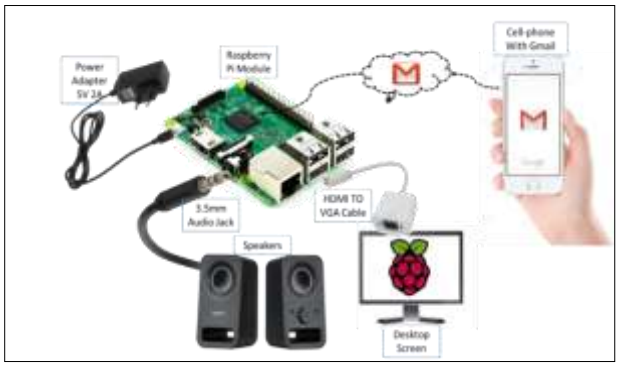


Figure 1: - Block diagram of this system

Figure shows the block diagram of the digital notice board. The system which include the Raspberry pi module. This system is based on the Raspbian operating system (LINUX Operating system.

The input on the system in form of text the user will be send the SMS or email to the system in form of text the process will work on the LINUX is based operating system.

1.2 SYSTEM ARCHITECTURE: -



2. HARDWARE REQUIRED: -

2.1 Raspberry Pi
2.2 DC Adapter
2.3 LCD Screen
2.4 DC Connectors
2.5 Mobile Phones

2.1 Raspberry Pi

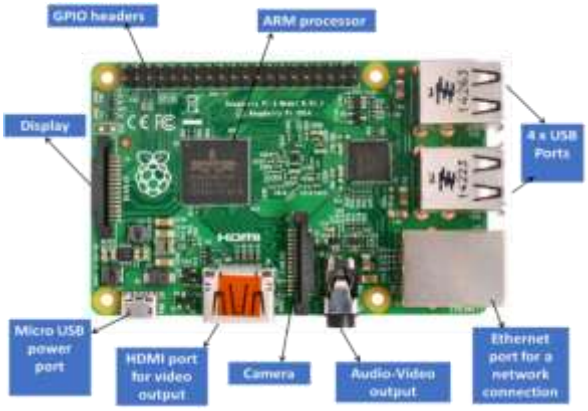


Figure 3: - Raspberry pi

Raspberry pi is a credit card size small CPU. This system is based on a LINUX operating system. It is a free operating system. It is simple operating system and easy to use. It has a simple connectivity connection to connect the power supply on Raspberry pi system, and connect the mouse, keyboard. We connect LCD display to the HDMI port. The Raspberry pi has the ability to interconnect with the outside the world and wide array.

SPECIFICATIONS: -

- A 1.2GHz 64-bit quad core ARMv8 CPU
- 802.11n Wireless LAN
- Bluetooth 4.1
- Bluetooth Low Energy (BLE) 1GB RAM

4 USB ports

- Full HDMI ports
- 40 GPIO pins
- Camera interface (CSI)
- Display interface (DSI)
- Micro SD card slot
- Ethernet port

2.2 DC ADAPTER

The raspberry pi module power by 5 v micro USB supply. The system required exactly how much current to raspberry pi is required is depended on what you can connect it. Typically, the model B due between the 700-1000MA. It is depending on your connectivity. The maximum power required the Raspberry Pi can use is 1 Amp. When we connect a USB device then we required power of 1 Amp. The power requirements of the Raspberry Pi are GPIO pins can draw 50mA safely, distributed across all the pins; an individual GPIO pin can only safely draw 16mA. The camera module uses 250mA and HDMI ports required 50mA and keyboards and mice can use 100mA or over 1000Ma.

2.3 LCD SCREEN

A LCD is electronically modulated optical device. It is also flat panel display. It is produce visible image. LCD are super-thin technology display screen that are generally used in laptops, computer screen, cell phones, TV etc. It is actually combination of two states of material solid and liquid. Liquid crystal display is composed of different layers which include two polarized panel filters and electrodes. LCD used for displaying the image in notebook or some other electronic devices like mini computers. Light is projected from lens on a layer of liquid crystal.

2.4 HDMI CONNECTOR

High Definition Multimedia Interface is an audio, video interface for transmitting digital audio data from an HD source device, such as a display controller, computer monitor, digital audio device. Replacement for analog video standards, we used HDMI connectors. The HDMI connectors defines the protocols, signals, electrical interfaces and mechanical requirements of the standard. The maximum pixel clock rate for HDMI 1.0 is 165 MHz, which is allow 1080p and WUXGA (1920×1200) at 60 Hz. HDMI 1.3 increases that to 340 MHz, which allows for higher resolution across a single digital link. An HDMI connection is single-link or dual-link and have a video pixel rate of 25 MHz to 340 MHz (for a single-link connection) or 25 MHz to 680 MHz (for a dual-link connection). Video formats with rates below 25 MHz are transmitted using a pixel-repetition scheme.

2.5 MOBILE PHONES

We need mobile phones to send the message (notice) and raspberry pi module to receive that notice.

3. SOFTWARE REQUIRED: -

Python Language

3.1 PYTHON LANGUAGE

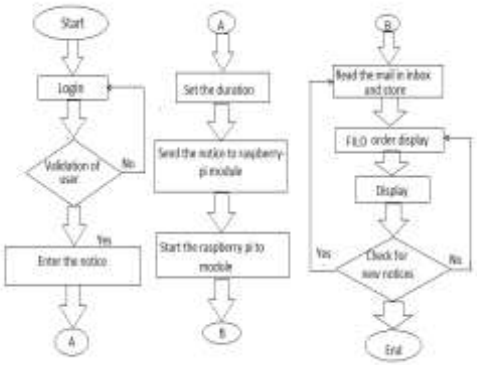
Python language is a open source general purpose language. It has object oriented, procedural, functional and easy to interface with C/C++/JAVA/FORTAN. Python is high level language it can used for developing desktop GUI application, web applications and web sites. It allows to focus on core functionality of application by taking core of common programming task. Python is very simple which leads to fast development.

Python's simple, easy to learn syntax emphasizes readability and therefore reduce the cost of program maintenance. Python support modules and packages, which encourage program modularity and code reuse.
Programmers mostly used python language because of the increased productivity it provides. There is no compilation step, the edit-test-debug cycle is fast. Debugging python program is easy: a debug or bad input will never cause a segmentation fault. Instead, when the interpreters discovered an error, it rises an exception. A source level debugger is allowing inspection of local global variable, evaluation of arbitrary expression, stepping through the code a line at a time and so on.
Following is a list of common operators in python:

Operators	Description
+	Addition
-	Subtraction
*	Multiplication
/	Division
**	Exponentiation
//	Integer division

Table: - Operators in Python

3.1 FLOWCHART: -



4. WORKING: -

In this system user has to login first. If the user is valid then software shows the page in which user can add the notice. Notice can be a text. While inserting the notice user has to set the duration for which notice well be display on to the notice board. For the purpose of scheduling we are going to use first in first out(FILO). As per the sequence of notice, notices are displayed on the board. Raspberry pi is using for connecting the software system and the LCD Board.

5. CONCLUSION:-

Current world prefers automation and digitalization in such a way this project will be more useful in displaying the messages, videos, pictures in Wireless E-Notice board through android app development application by Raspberry Pi. The message can be send by the users at anywhere from any location. The notice board will be more efficient in displaying the messages at low cost. Notices can be sent from anywhere in the world. The system can provide username and password type authentication for securities purpose. In previous the notice board Wi-Fi is used. In that system there is a limit of coverage area but in our system, internet is used for communication medium. So, there is no problem with coverage area. Notices can be stored in server cloud. Text messages and multimedia data can be seen fast with better quality.

6. REFERENCES: -

[1] Vinod B. Jadhav, Tejas S. Nagwanshi, Yogesh P. Patil, Deepak R. Patil, "Digital noticeboard using raspberry pi ", International Research Journal of Engineering and Technology (IRJET) , May 2016 : volume 3 , issue 5 : W-k Chen , Linear Networks and systems . Belmont, CA: Wadsworth, 1993, pp.123-135.

[2] Bhawana Saini, Rachana Devi, Shilpi Dhankhar, Mohammad Ziaul Haque and Jagandeep Kaur, (2014) "Smart LED Display Board", International Journal of Electronics and Electrical Engineering (ISSN 0974-2174), Volume 7, Number 10, pp 1057-1067, International Research Publication House.

[3] Lee J. S. Su Y W, and shen C Proposed an "A Comparative study of Wireless Protocols Bluetooth, UWB, ZigBee, and Wi- Fi", Proceedings of the 33rd Annual Conference of the IEEE Industrial Electronics society (IECON), November 2007 pp 46-51.

[4] ForamKamdar, Anubhav Malhotra and Pritish Mahadik Display Message on Notice Board using GSM ISSN 2231-1297, Volume 3, Number 7(2013), pp. 827-832 Research India Publications.

[5] Parched U. Keara, Kunal P. Tirade, Akash P. Kulkarni, Rajkishor Tugnayat: "GSM Mobile Based LED Scrolling Message Display System", International Journal Scientific Engineering and Technology volume 2, issue 3; pp:149-155.