International Journal of Recent Trends in Engineering & Research (IJRTER)
Conference on Electronics, Information and Communication Systems (CELICS'18)
Special Issue; March - 2018 [ISSN: 2455-1457]
DOI : 10.23883/IJRTER.CONF.02180328.005.PDVNH

WIRELESS E-NOTICE BOARD USING RASPBERRY PI 3

Dr.P.Gnana sundari[1],P.Sangeetha[2], M.Sowmiya[3], N.Soundarya[4]
Head of the Department of Electronics and communication engineering[1], Department of Electronics and Communication Engineering[2], Department of Electronics and Communication Engineering[3], Department of Electronics and Communication Engineering[4].
SNS College of Engineering, Coimbatore

***Abstract*— This paper deals with the complete framework about "Wireless E-notice board using Raspberry pi". In this proposed system the android app is developed and user can send the message through it from anyplace. Notice board is connected with Wi-Fi. The received message can be viewed in large screen Liquid Crystal Display (LCD). Additionally RTC is introduced for automatic ON\OFF and the notice board displays the message with user name and Mail id. Conveying the pictures and videos will be more fruitful.**

***Keywords* —Raspberry Pi , Notice board ,LCD, RTC ,Wi-Fi**

1.INTRODUCTION

Notice board plays a vital role in displaying the message up-to-day. Hence wireless technology is preferred y the people due to its high speed of data transmission. Maintaining manually creates a lot of wastage in natural resource like paper, ink and manpower. The main motto of this paper is to present flexible and reliable notice board with low cost. The LCD display is connected with Raspberry Pi to display the message. Here an Android App is developed by which n number of authenticated user can access through this app and send messages from anywhere and the message will be displayed in large screen LCD display by the web server or cloud server.PHP is a scripting language which is used for web development applications.The mobile web page and LCD web page are created by using PHP language .The android app is developed by using Android Studio. And they are interfaced by using cloud server. As per our concern this project will be more useful in updating the information then and there and hence provide a great platform in the path of digitalization.

2.PROPOSED METHODOLOGY

The operation of wireless e-notice board is that when a user sends a message through the android app that data is received through Raspberry Pi which is with Wi-Fi connection. The Raspberrian OS is installed in the SD card. The web link is developed to connect the android app and LCD display. HTTP is widely used to access the data on the world wide we so that the message can be send from any location. HTTP is mostly used between a web browser and a web server. My SQL stores and retrieves the message to LCD display through HDMI cable. My SQL is used as a we application stack finally the information will e displayed in LCD with help of PHP display.

It displays the message with user name and E-mail id. Additionally RTC is programmed for Automatic ON/OFF of notice board by using shutdown –h commands. When 'h' indicate the hours for automatic OFF of the system.

3. BLOCK DIAGRAM

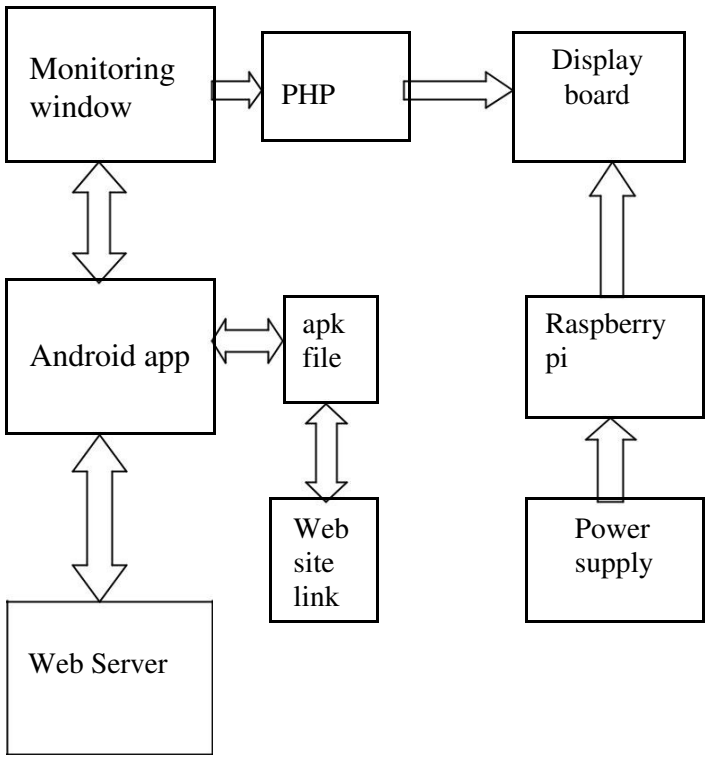


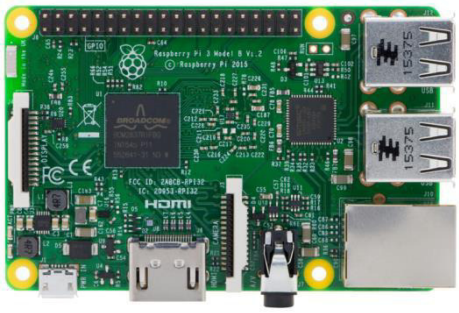
Fig 3.1 Block diagram of wireless e-notice board

DOI : 10.23883/IJRTER.CONF.02180328.005.PDVNH

4.COMPONENTS DESCRIPTION

HARDWARE

4.1RASPBERRY PI 3-MODEL B



GPIO:40-Pin

SOC: Broadcom BCM2837

CPU: 4XARM cortex-A53, 1.2GHZ

RAM:1GB LPDR2 C900MHZ

MEMORY: Micro SD card

Dimensions:85x56xMmm

Networking:10/100 Ethernet,2.4GHZ 802.1 1n wireless The ports available are HDMI ,3.5mm analog audio,video jack,4XUSB 2.0,Ethernet,camera serial interface(CSI) And Display Serial Interface (DSI)

Antenna is designed in such a way that its radios are connected to this chip antenna soldered directly to the board.

4.2 LCD DISPLAY

LCD is used to visualize the messages by which the user will send the text and the text will be displayed in LCD through Raspberry Pi. In general it act as a receiver and plays vital role in displaying output. It can be placed anywhere and protects the environment.

4.3 KEYBOARD AND MOUSE

All the four of the VSB ports are available to connect the keyboard and mouse. It is used for typing and searching. In notice board the web server is available and hence it also act as a device.

4.4 HDMI CABLE

HDMI cable is a proprietary which is video interface for transmitting the data. It is compatible to LCD display. Raspberry Pi is connected to LCD by using the HDMI cable.

SOFTWARE

4.5 PHP(Hyper text preprocessor)

PHP is a scripting language which is used forweb development. Additionally it act as general purpose programming language. It is imperative, functional and object oriented. It is specially designed for web template systems.

With PHP code the images and data can be generated and displayed in form of various we template system. The PHP is used to display the web page the android mobile phone and in large screen LCD display.

4.6 ANDROID APP STUDIO

Android is a mobile operating system. Android app studio is a open source software specially designed for smart phones and tablets. The language used to built Android app is Java, C , C++.

Android software development used to create many innovative ideas into reality and development for running android operating system. Here the android app is created for sending the messages. It is generated by using "Android App Studio" software which is an open source.

4.7 MY SQL

It is a relational database management system used in a web source code of My SQL. It is available in GNU (General Public License) and also in propriety agreement.

It works well in both in small and large application with standard SQL. It is scalable and easy to use.

The data in My SQL is stored in tables and it is used for storing information. It supports data end users

4.8 PYTHON

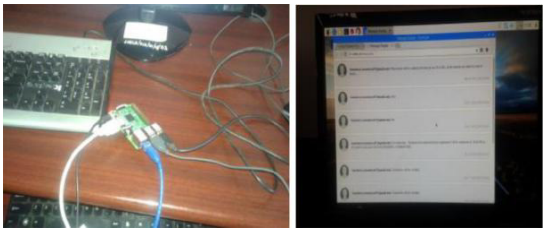
Python is mostly used high level language for general purpose. It includes object oriented, functional procedural reflect. The program reduces complexity comparing to C++ or JAVA. The program can coded in small lines. It has comprehensive standard library and open source software.

Python has a automatic memory management and users dynamic typing.

Python provides simple syntax and high text processing tool and mostly referred as natural language processing. It acts as a scripting language for web application.

RTC program is coded in python language for automatic ON/OFF process in digital notice board.

5.EXPERIMENTAL SETUP



LCD display is interfaced with Raspberry Pi through HDMI cable.

Micro USB power input upgraded switched power source is available which is connected with normal USB cable.

Special Issue; March - 2018 [ISSN: 2455-1457]
DOI : 10.23883/IJRTER.CONF.02180328.005.PDVNH

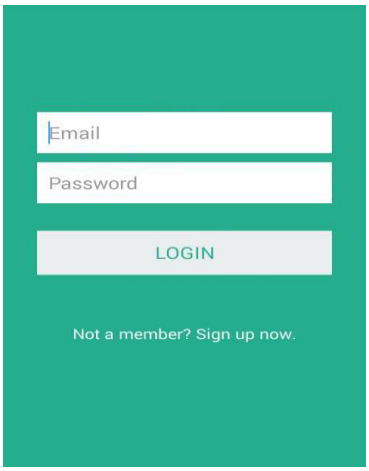
Keyboard and mouse are connected in any of four USB ports.

Separate LAN port is available to connect Ethernet cable.

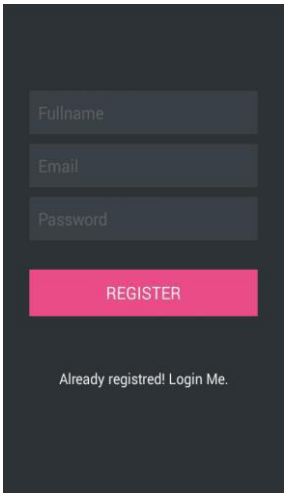
Mobile phone acts as a transmitter whereas LCD display as a receiver.

6. IMPLEMENTATION AND RESULT

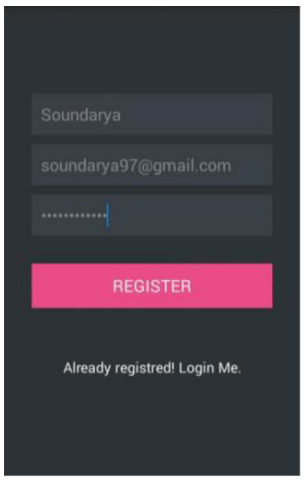
Step 1: Open the mobile app



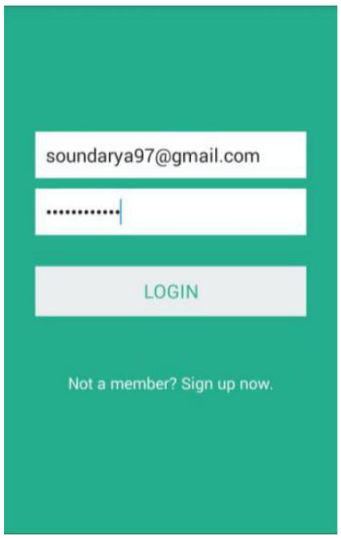
Step 2: If you are already a member you can enter the email id,password and login. In case of new member click the option "Sign up now".



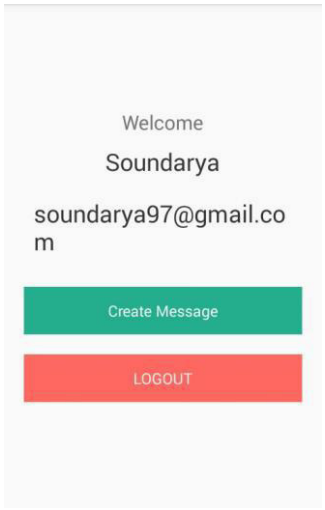
Step 3: Enter your full name,new mail id and password.Hence register accordingly.



Step 4: After registration a web page opens. Login by using that email id and password.

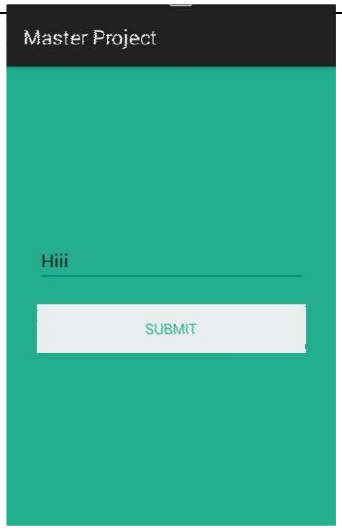


Step 5: Welcome page opens with registered mail id. Click the option "Create Message".



Step 6: Type the message and click submit.

Special Issue; March - 2018 [ISSN: 2455-1457]
DOI : 10.23883/IJRTER.CONF.02180328.005.PDVNH



Less power and man power

Step 7:And the result will be displayed in the LCD display accurately with profile,name and email id.

7.APPLICATION

Wireless notice board can be replaced by using Digital notice board in educational institutions and organizations.

It can also be used in hospitals, hotels, banking, shopping, bus stands and railway stations to display the important message.

Additionally it can be used to display the photos of criminals in public places.

8.ADVANTAGE

Complexity is reduced
User friendly device

DOI : 10.23883/IJRTER.CONF.02180328.005.PDVNH

9.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. By which the message can be send by the users at anywhere from any location with high data speed. Thus the notice board will be more efficient in displaying the accurate messages at low cost.

10.FUTURE SCOPE

- ✓ GLCD can be implemented for more advancement.
- ✓ Voice call can also be added for emergency purpose at public places.
- ✓ Voice messages and buzzer can be included to indicate the arrival of new messages especially in educational institutions.

11.ACKNOWLEDGEMENT

We are in immense pleasure to thank our guide **Dr.P.Gnana sundari** Head of Electronics And Communication Engineering department for providing us laboratory facilities and also we owe our deep gratitude for fruitful guidance to complete our project successfully.

12.REFERENCES

1.Vinod B. Jadhav, Tejas S. Nagwanshi, Yogesh P. Patil, Deepak R. Patil. "Digital Notice Board Using Raspberry Pi" IJRET, Volume: 03, Issue: 05 | May-2016.

2.Bhumi Merai, Rohit Jain, Ruby Mishra. "Smart NoticeBoard". IJARCCE, Issue:05|April-2015

3.J. S. Lee, Y. W. Su, and C. C. Shen,"A Comparative Study of WirelessProtocols:Bluetooth,Zigbee and WiFi",Proceedings of the 33rd Annual Conference of the IEEE Industrial Electronics Society

4. Shruthi K., Harsha Chawla, Abhishek Bhaduri"SMART NOTICEBOARD",DepartmentofElectronicsand Communication, Manipal Institute of Technology, Manipal University,Karnataka

5. Rajeeb Lochan Dash, Mrs. A. Ruhan Bevi "Real-time Transmission of Voice over 802.11 Wireless Networks Using Raspberry Pi," IJEDR1401144 International Journal of Engineering Development and Research 793 IJEDR, Volume 2, Issue 1 ISSN: 2321-9939, 2014.

6.About Raspberry Pi: www.raspberrypi.org: This is the official website of the Raspberry Pi project.

