Password Protected and Raspberry-Pi Based Muti-User Digital Notice Board

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ABSTRACT:

The idea behind this project is to develop a display system which overcomes the problems of a manual notice board. Notice board is an essential and primary thing everywhere in the places like schools, colleges, transporting sector etc.., Raspberry pi based digital display system is an application that can retrieve the data from the server by using wireless communication (internet) and the data is sent to the display via HDMI cable. This project will help the user in such a way that the user can send the message or an image from anywhere irrespective of time according to the requirement. This project is a real time monitoring, as it can update the information faster compared to the manual notice board without humans' involvement.

Keywords: Raspberry pi, Digital display system, Electronic components, HDMI cable.

Introduction:

As we can see the huge development in the digital technology and the growth of it drastically, people are being adopted to get the information in an easier way. Our project is one of the best suited device for this generation as we can access it easily and know the information and facts happening around us.

This process of transferring the information is achieved by adopting raspberry pi as it is the heart of the project. When the user sends the information it is displayed on the board as an image. This process is done by using python programming as when the user sends the information it will be displayed on the board, for this to happen a client-server protocol is established in order to display the information.

Objective:

The main objective of the project is to convey the information from one user to another without any time elapse. (E.g. Administration to the students, employees etc.,)

Problem Solving:

The problem is displaying the information sent by the user, this can be achieved by setting up a client-server protocol in order to transfer the information.

Literature Survey:

To continue the project, we had gone through the papers which were published prior to it for getting a clear view on it and some of them are

S.no	Author	Type	Limitations
1.	Foramkamdar, Anubhav Malhotra and Pritsh mahadik.	SMS based system	No scheduling
2.	N.Jagan mohan reddy, G.venkateshwarulu.	SMS driven display system	Limited number of characters

I. Block Diagram:

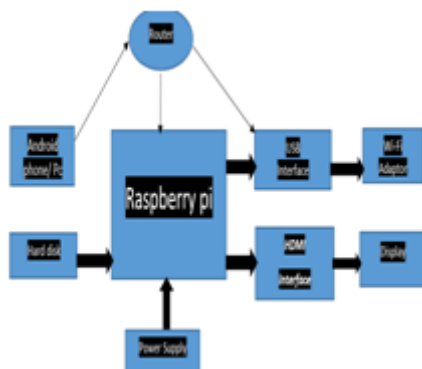The basic block diagram of digital display unit is represented as shown below:

Figure 1: Block diagram

II. Raspberry pi:

To achieve the process of transferring the information from user to the system we adopted Raspberry pi 2.The block diagram, features and various units present on the raspberry pi are described as below
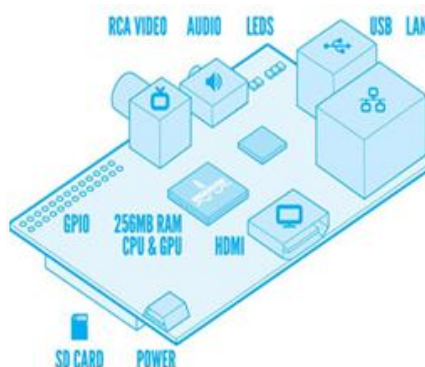

Figure 2: Raspberry pi

Raspberry pi is similar to the mother board in which the pins and chips are mounted.

1. ARM CPU/GPU: It is a System on a chip (SOC) made with ARM Central Processing Unit and Video core Graphics Processing Unit. In this the CPU handles all the computations whereas the GPU handles the output related to graphics.
2. USB: The term is abbreviated as Universal Serial Bus used for connecting the peripheral devices of all types which includes keyboard and mouse.
3. HDMI: High-Definition Multimedia Interface connector allows to tie up with television or compatible display using HDMI cable.
4. POWER: This is a 5v micro USB power connector into which the supply is given through suitable power supply.

Wi-Fi adaptor allows the wireless network access. Display is used to show the image that is sent by user.

WORKING:

Initially a python program is written to read the information that is sent by the user and it is stored in the Raspberry pi. For achieving this FTP server is used to store and upload the images. By accessing the link filegenie.com server gets started. The server is protected with a password so therefore only the authorised persons can use it.

The information or the text which the sender wishes to be displayed is displayed in the form of an image. Data is uploaded by the operator in the server from which the module downloads the images. This module can retrieve 10 images from server and displayed on LCD.The process of uploading and retrieving image is shown by below flowchart.
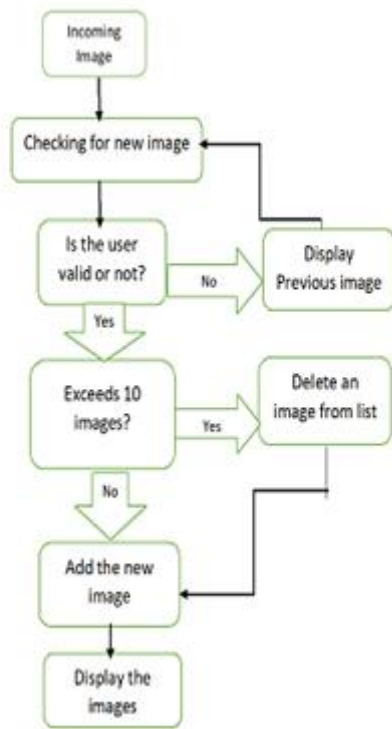
Figure 3: Flow chart

III. FUTURE SCOPE:

- To acquire a server that is flexible and programmable according to our requirements.
- To develop an OS based applications that have more options for digital display system.

IV. References

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V. Acknowledgement:

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