

Smart Mirror Notice Board

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ABSTRACT

Notice Board is essential to display in any organization or at public places to provide the information. In the present situation, the notice/advertisement boards are almost always managed manually. But pasting various notices on a daily basis is a difficult/long process. This wastes a lot of time, paper, and manpower. Android notice boards are developed recently but still, it is found that there is still ignorance in reading notice board. So to make people read the notices we use the mirror display. We present the development of an innovating appliance that incorporates interactive services of information, erred through a user interface on the surface of a mirror. Our work is based on the idea that we all look in the mirror when we go out, so why wouldn't the mirror become smart. In this system, we propose a remotely send notice to smart mirror from an Android application based on Raspberry pi card. Now the world is moving towards automation, so in this world, if we want to do some changes in the previously used system we have to use the new techniques. The wireless operation provides fast transmission over long-range communication. It saves resources and time. Data can be sent from the remote location. User authentication is provided. Previously the notice board using GSM was used in that there was the limit of messages but in our system Multimedia data can be stored on-chip or on SD card. Text messages and multimedia data can be seen whenever we want to see. They were using the LCD display to display the notice which was not attractive so we are using a new technology known as the smart mirror to display the notice.

Keywords: Raspberry Pi, Android System, Authentication, User Interface.

I. INTRODUCTION

Notice Board is essential to display in any organization or at public places to provide the information. In the present situation, the notice/advertisement boards are almost always managed manually. But pasting various notices on a daily basis is a difficult/long process. This wastes a lot of time, paper, and manpower. Android notice boards are developed recently but still, it is found that there is still ignorance in reading notice board. So to make people read the notices in this system use the mirror display. this system present the development of an innovating appliance that incorporates interactive services of information, erred through a user interface on the surface of a mirror.

Our work is based on the idea that we all look in the mirror when we go out, so why wouldn't the mirror become smart. In this system, we propose a remotely send notice to smart mirror from an Android application based on Raspberry pi card. Now the world is moving towards automation, so in this world, if we want to do some changes in the previously used system we have to use the new techniques. The wireless operation provides fast transmission over long-range communication. It saves resources and time.

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II. METHODS AND MATERIAL

Design and Implementation of Digital notice board by using raspberry pi board. The application has been installed on a Smartphone, a web server and a raspberry pi card to display text on display device. The main objective of this system is to develop a wireless notice board that display message sent from the user 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 every day and each time he uses the system.

A. Goals and Objectives

The main goal is to provide Exciting new innovative way to send information to your Staff visitors and Students. The main objective of this system is to develop a wireless notice board that display message sent from the user 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 every day and each time he uses the system. Wi-Fi is the wireless technology used.

B. Statement of scope

By using multiple screens for displaying the big size advertising purpose and the contents on the screen is made up of several images files and broadcasting display information and also remotely control it. The broadcasting information such as road highways

,subways, buses and bus station, train and train station, shopping malls, city squares, hospital, conference hall, colleges and schools for displaying notice for student information and displaying all institutional information for visitors and this same application in industry for displaying notices or useful information which has want to giving employees.

C. Major Constraints

- 1) Authenticated User can post the message.
- 2) Internet connection is mandatory.
- 3) Registration is necessary for new user.

D. Activity Diagram

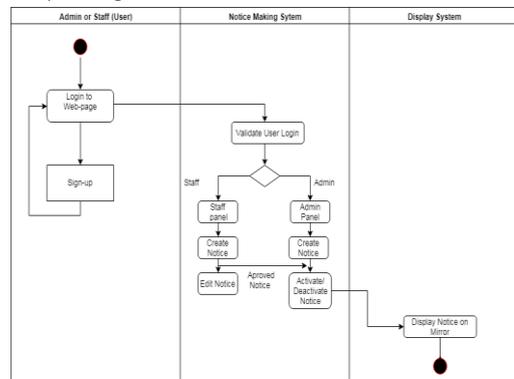


Figure 1

E. System Architecture

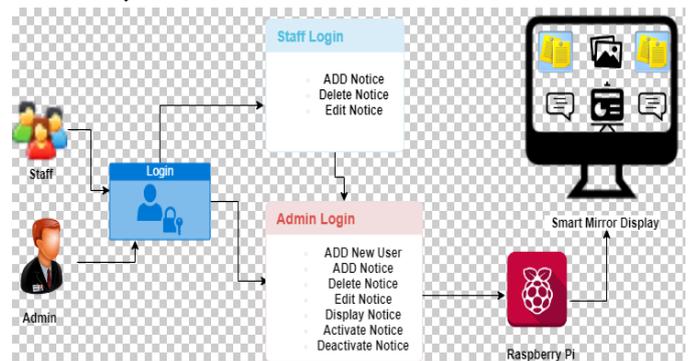


Figure 2

III. HARDWARE REQUIREMENT

A. Mirror Display

It is used to display the notice. User will post the text after the authentication. Notice will display through the raspberry pi.



Figure 3. Mirror Display

B. Raspberry-Pi

The solution that we have adopted consists of the exploitation of the Raspberry pi card. It is a single nano computer card ARM processor designed by designer David Braben video games, as part of its foundation "Raspberry pi". (single motherboard, without housing, power supply, keyboard, mouse and screen) with the aim to reduce costs and enable the use of recovery equipment. Around the central part, there are different connectors for connecting devices to interact with the computer.



Figure 4. Raspberry pi 3 model b

C. Hardware Setup

1) Connect the Ethernet cable from the Ethernet connector of the raspberry-pi to router. Internet connection should be working. We need to do this only first time when setup raspberry-pi, so that

program can update itself to the latest version. Updates are enabled by default and can be disabled later when we want.

- 2) Connect the HDMI cable from the HDMI connector on raspberry-pi to the HDMI connector on TV.
- 3) Plug the SD card into slot on the underside of the raspberry-pi. SD card should be pushed all the way in so that it is making a good contact with the connectors.
- 4) Plug the wireless adaptor from keyboard touchpad media controller into a USB port on raspberry-pi. Finally, insert the micro USB power supply. This will automatically boot the raspberry pi up. It shows raspberry-pi logo after successful installation.

IV. SOFTWARE REQUIREMENT

A. Android

Android provides a application platform that allows us to build the applications and games for mobiles in Java Programming language. The documents listed in the left navigation provide details about how to build apps using Android's various APIs. Apps provide multiple entry points Android apps are built as a combination of distinct components that can be invoked individually. For instance, an individual activity provides a single screen for a user interface, and a service independently performs work in the background. From one component you can start another component using an intent. You can even start a component in a different app, such as an activity in a maps app to show an address. This model provides multiple entry points for a single app and allows any app to behave as a user's "default" for an action that other apps may invoke. Apps adapt to different devices Android provides an flexible application platform that allows you to provide special resources for different device configurations. For example, you can generate different XML layout files for different screen sizes and the system decides

which layout to apply based on the current device's screen size.

B. JSON

JSON (JavaScript Object Notation) is a data structure format. The data are considered as objects with properties and sub-properties. This formalism is close enough is based on XML and JavaScript.

C. MySQL

MySQL is a relational database management system (RDBMS). It is distributed under a dual GPL and proprietary license. It is one of the database management software most used in the world.

V. RESULT

1) Login page

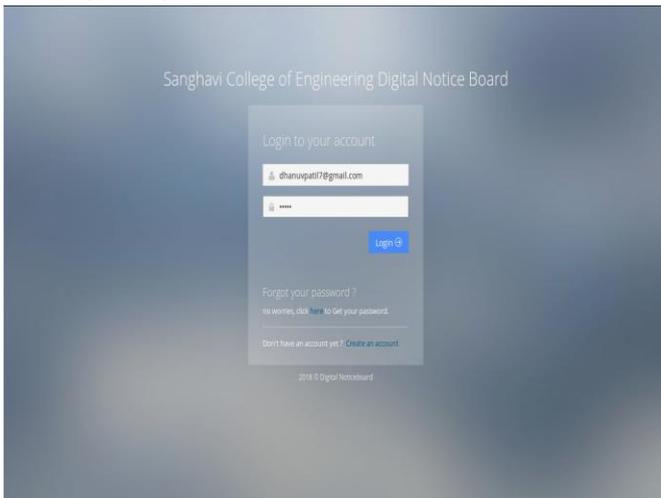


Figure 5. Login page

On login page user can login as admin or staff by using his/her user-id and password. If user forgot his password there is forgot password option through which user can recover his password. On login page there is create an account option where new user can create account.

2) Add Notice

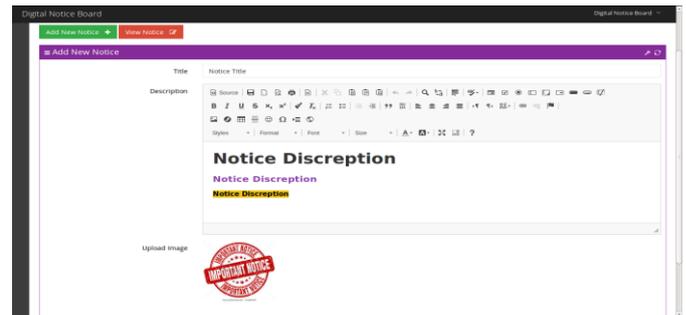


Figure 6. Add notice page

In this page user can add any notice which we want to display on the notice board. We can also add the image to the notice. We can set the font size, colour for the notice

3) Output



Figure 7. Smart Mirror display

This is the smart mirror display on this display you can see the notice that is send by the authorized user and at the same time you can see your face on the display.

VI. CONCLUSION

As to days generation is moving towards automation, so in this generation if we want to do some changes in the previously used system we have to use the new techniques. We have implemented a smart mirror

with the use of raspberry pi. Wireless operation provides fast transmission over long range communication and due to fast transmission resources and time is saved. Data can be sent from remote location. User authentication is provided. Multimedia data can be seen whenever we want to see. Thus raspberry-pi being a small yet powerful device can work efficiently in smart mirror notice board connected with softwares.

VII. REFERENCES

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