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Real -Time Library Information and Notification System

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Abstract— There are a variety of strategies for disseminating information to the intended recipients. Many are, however, inaccessible to each individual, necessitating the installation of particular display boards or screens that are immediately available and accessible to all the passersby. Similarly, notices must be communicated from time to time in colleges; therefore, the best place for displaying such notices is the library. Thus, the main goal of this project is to display a real-time notification on the LED TV placed at the library entrance by creating a webpage and then integrating it with the hardware (screen). Additional features such as real-time and temperature are also shown. As a whole, the project's flow is the creation and design of a webpage for display, which necessitates several back-end programming to alter the presentation of the display in an expected manner.

Keywords—Notification display through webpage, real time and real-time temperature.

I. INTRODUCTION

Notice displays are an effective way of disseminating important information to a large group of people. It is an ideal tool for organizing and displaying information; they are used in a wide range of businesses, including schools, colleges, hospitals, railway stations, bus stations, hotels, shopping malls, and so on because they can be used to display important notices or advertise upcoming events or meetings (Chouhan et al., 2017). Also, there exist various platforms through which information or notifications are disseminated, but some of the information may not be readily accessible at the appropriate time by the appropriate person. To do so, particularly in colleges, a library is a place where almost all students and staff gather for resources. As a result, it becomes the ideal location for displaying any real-time notices or information that needs to be communicated to the receivers or crowd at all times. This has sparked our project's main idea, which is a "real-time library information and notification system."

The webpage design, which includes numerous scopes such as notification display, real-time and temperature display to be displayed along with the notification is part of the overall execution and presentation of the project. It also includes an extended page that can be accessed from the webpage that is being displayed so to look for more information regarding the library. The two fundamental aspects of webpage design are HTML, which employs various tags and components to enclose distinct parts of the contents for layout and formatting to create attractive web pages, and CSS, which selects HTML elements and applies attributes or styles that we wish to change. Additionally, programming languages like JavaScript enable more dynamic web pages. PHP is a server-side language that is also a scripting language created specifically for web development. This all constitutes the first set of abilities required for the project. Following the creation and customization of the webpage, the interfacing and the integrating part must be

completed to display the webpage created for notices on the LED TV. While the project aims to display real-time notices, it also leaves room for new ideas and lookouts.

II. METHODOLOGY

A. Literature Review

(Kamdar et al., 2013) has researched the SMS-based notice board using GSM for displaying messages on the notice board via the user's mobile phone. The operation is controlled by an ATMEGA32 microcontroller. Using AT commands, a SIM300 GSM modem with a SIM card is connected to the microcontroller's ports. When a user sends an SMS from his phone to a registered number, it is received by a SIM300 GSM modem at the receiver's end and is displayed on an electronic notice board with an LCD. Similarly, (Bhoyar et al., 2014) have also carried out the project on displaying notices in colleges on digital notice boards by sending SMS messages via mobile where the microcontroller AT89c52 is used.

While (Teckchandani et al, 2015) proposed an advanced wireless notice board that allows us to add, remove, or change the message at any time to suit our needs. The paper proposes a method for displaying notices sent as text messages on large screens such as computer monitors or televisions, using an Android phone as a transmitter, a Raspberry PI 3 Model B as the system's heart, Wi-Fi for data transmission, and an LED/LCD screen as a display.

The latest technology is the use of digital devices to represent information which has become more efficient since the advent of digital technology. (Kamal et al, 2020) A Smart Notice Board using Raspberry Pi has been implemented in the project and an authenticated person can send a message/notice to a remote location using digital devices such as LED. Apart from displaying the message on the LED, it also speaks the message out loud through a speaker, allowing the blind to hear it.

Another technology of Wi-Fi-based LCD is described in this work (S. Arulmurugan, 2016) where a WI-FI transceiver and a display toolkit that can be configured from an ARM cortex make up the LCD system to deliver information via LCD. It can function as an electronic notice board for displaying vital notices instantly and avoiding latency.

B. Method

Following the literature research, the project's execution began with the working on scopes and the work plan. The project aims mainly for the development of a webpage to display real-time information and notifications on the LED TV which requires the fundamental abilities to develop and design a webpage, such as HTML and CSS, as well as the programming/scripting languages JavaScript and PHP to make it more interactive. The actual work started with the designs and customizations of the major sections of the display such as real-time notification, real-time, and temperature with additional features followed by interfacing and integration which as a whole is software-based. For more appealing designs and timely completion of the works, certain aspects (Features) have to be added as well as removed.

Figure 1:Block Diagram
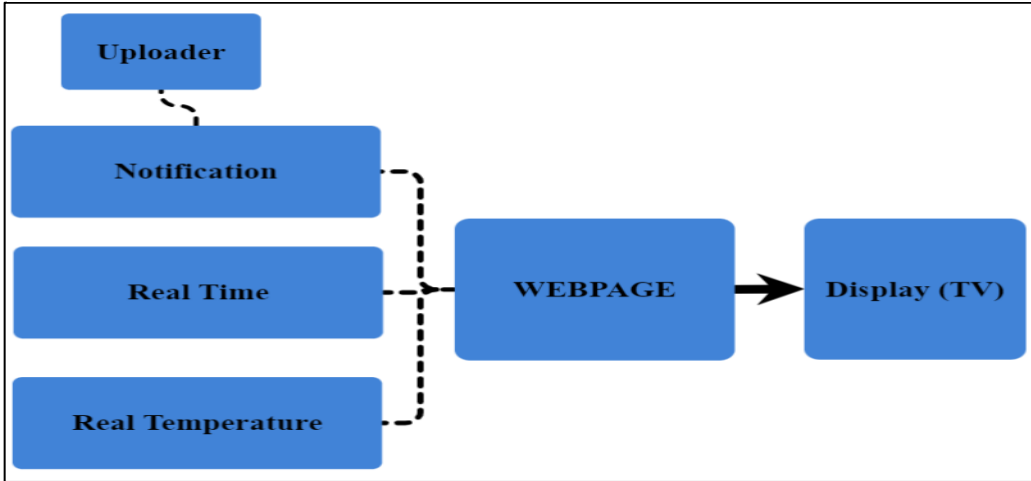
C. Result and Discussion

The admin first accesses the uploader page by entering 'user credentials, and the uploader page will appear from which the information or notices will be sourced and timely-updated whenever required and shown on the webpage interfaced with LED TV. The current time and temperature are presented alongside the notices. The extended page to which the additional information is provided can be accessed from the mobile device by clicking the more information button option presented on the webpage.

Figure 2:Webpage (display)

III. CONCLUSION

The project concludes with a successful real-time information display, which was primarily the webpage design in such a way that it included three major scopes to display, namely, real-time notice, temperature, and time, all of which were integrated and thus ready for display. The notices uploaded from the PHP-created page are displayed on the LED TV with a webpage interface. Several scripting or programming languages, such as HTML, CSS, JavaScript, and PHP, have enabled development, design, and customization to meet specific needs. Visual Studio Code and XAMPP are the two online platforms that we used to code the webpage design and then perform local hosting. Finally, the notices are displayed on the screen (LED TV) at the library entrance, with the creation of a server.

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