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# Development of Web Application for Displaying Academic Information

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**ABSTRACT-** We live in the art of digitization, where everything comes to our fingertips. Manual labor is far more backdated when we have computers and phones doing the process. Looking at the sync world outside, when we came to our institution, we found the need for revitalization of one of the most prevalent things found everywhere, the NOTICE BOARD. News, announcements, and academic calendar are the pre-most significant when it comes to an academic and educational institution. It has been reported that one of the primary causes of unawareness among students in the context of academics and institutional curriculum is seen to be either the lack of delivery of the notice or the circulation of the notice at the approachable time. Hence to solve these problems at once, we have created a web application, an application that is connected to the 50-inch LED display board that will be displayed on the notice board. The application will be connected to the institutional database, from where the application can derive data and exhibit it on the board, making manual labor limited and cutting down scrap time used for manual changes and waste of resources like pins and papers. This will not only keep the students of the institution time bound and up-to-date but also will add to the face value of the college making it more organized and attractive.

**KEYWORDS:** Web application, LED Display board, announcements, and institutional curriculum

## I. INTRODUCTION

Our web application provides a platform for institutions irrespective of educational background. It is a platform where they can display anything they want to display like important notices, academic calendars, workshops, events, etc. The admin can add multiple notices in text or image format. The workshops and events section can also be added multiply as they are scrollable. It can also display the placed students and which can encourage them by congratulating the placed students. The admin can be able to congratulate students who are placed in different companies at a time. On the digital notice board, the student's and faculty's achievements can be displayed. To maintain a motivational and positive environment good thoughts can be displayed. There are many applications similar to this but there is no such application that provides all these facilities for a particular college. Our goal is to contribute to the college by providing

a simplified web portal and to make a product that is helpful in the field of study and is needed by every student in our college. The purpose of this project is to maintain a competitive and positive environment and to reduce manual efforts which are required while using traditional notice boards. This application can provide students with appropriate notices and information. To update students about what is going on in the college our application will help teachers. Our web application is supported to eliminate and in some cases reduce the hardships faced by the students and faculties. No formal knowledge is needed for the user to use this web application. Thus, this, proves it is user-friendly. It will help students as well as faculties in better utilization of time which will be saved by using this platform

*Goals or Objectives:*

1. To display multiple notices and information to the masses.
2. To reduce manual efforts and scrap time-lapse for the management
3. To allow the authorized user to control the LED monitor at any given time and location

## II. LITERATURE SURVEY

"E- Notice board: Dynamic Information Processing Application,"- This paper centers on a case study conducted at the Mehran University of Engineering & Technology (MUET) and discusses the creation of an information processing infrastructure that includes both hardware and software components. The system is installed and distributed to different key positions within the institute. The application comprises a digital bulletin board (DNB), a touch interface, separate accounts for students and teachers, an admin interface, and advanced animations. The primary objective of this application is to simplify and streamline administrative and academic tasks at MUET. The system encompasses various aspects such as daily notifications, test results and attendance tracking, online attendance marking system via smartphone, displaying results directly from the Management Information System (MIS), separate accounts for students and teachers, and a portal for uploading books, notes, and study materials. The application is distributed in modular server-client units and is designed to handle faculty dissemination on a large scale. The touch interface, PC, and smartphone are crucial components of the user experience. [1].

"Internet Equipped Notice Board an Application of Internet of Things," This article focuses on the design of an electronic display that can wirelessly receive data from any authorized person who has access to a web terminal; that is, integrating traditional moving message displays with an ARM (Arduino) microprocessor to be accessed wirelessly as Internet of Things (IoT) applications. [2].

"Digital notice board", this document states that the purpose was to develop a user-friendly wireless technology that easily monitors the user's bulletin board for date and time. This project is mainly about the Raspberry Pie Digital Notice Board in which there is an Android application which is connected to the LCD via Raspberry Pie in this system, the main function is to schedule notifications based on priority and also a backup device for the user is also provided. [3]

"Digital Notice Board using Raspberry Pi", this paper proposes to remotely send a notification to a digital monitor from a Raspberry Pi based Android application. Wi-Fi is used for data transfer. Text can be added, edited or removed as required. An authorized computer is used to send notifications. On the receiving side the WIFI is connected to the raspberry pi. The main goal of this project is to build a wireless bulletin board that will display messages sent by the user and design a simple, easy to install, user-friendly system that can receive and display notifications in a specific way related to date and time. Wi-Fi and GSM technology are used for wireless communication. [4].

"IOT-based digital notice boards." This post aims to introduce a technology-based online bulletin board using the Internet of Things (IoT). Over the years, display panels have become one of the main roles in the mass communication medium. To reduce paperwork, time and manpower, the proposed model introduces an online digital bulletin board using IOT. IOT Connects things to the Internet. So we can access the Message Board from anywhere in the world via the Internet. The bulletin board is connected to an Ethernet module that allows access to the Internet board. An Ethernet module that is installed on a digital bulletin board will receive a message from a designated user and display it on the bulletin board. From the model we designed, the authorized administrator allows you to send a message from any corner and this message can be displayed on the LED display. The proposed model funds multiple applications such as help desks at transport stations such as railway, air and bus stations that offer current/updated information to passengers. It has a better impact in congested regions than in supermarkets because it allows cost prices to increase and decrease. This directs people/students into completely unknown areas. Less to infinity every remote area of the world can be displayed on the screen with updated news and this can only be possible with the help of IOT. [5]

"Wireless E-Notice Board". This document provides a basic understanding of wireless electronic bulletin boards. The primary objective of the proposed system is to ensure that the information sent from our remote location is displayed on the display unit. A wireless electronic bulletin board uses GSM technology to display a message sent via SMS via a mobile phone from a remote location on a larger display unit such as an LCD monitor. Multiple users can also send messages at once, which if they were displayed based on their priority. All registered users will be notified when the message is displayed. This article is about advanced hi-tech wireless bulletin board. [6]

"Scrolling LED Display Using Smart Phone," This article introduces the general style of LED scrolling to show the use of a low-value phone machine, and the user will be able to access more applications. If someone needs to show a message, they will send the message through the Bluetooth exploit using this project. This project deals with an advanced wireless Arduino development board. The goal of this project is to stylize a wireless board that displays messages sent by users of Bluetooth automatic phones. The most dominant device of the entire system is the AVR controller. The P10LED module and the Bluetooth module are connected with the controller and automaton development tool with APK application. [7].

"Displays messages sent from the user's mobile application," The aim of the project is to design a moving message dot display using microcontroller and IOT where the characters scroll from left and write continuously. In this project we used ATmega8 microcontroller. ATmega8 is a family of 8-bit microcontrollers. The maximum nominal frequency of the processor is 16 MHz The ATmega8 is very well suited for prototyping due to the simple requirement of a 4.5V-5.5V supply. It has an off-frequency offset of around 100 MHz and a 3-stage output memory register we ended up using a 16x32 dot display. First, the code was developed. And there we achieved the desired result. This project is about an advanced wireless bulletin board. In IOT based Web Controlled Notice Board, the internet is used to wirelessly send a message from the browser to the LED display. The main goal of the project is the development of a wireless bulletin board that displays messages sent from the user's mobile application. [8].

"Smart LED Display Boards," The LED display system is aimed at colleges and universities Ford plays daily information continuously or at regular intervals during business hours. Since it is a GSM based system, it offers the flexibility to display flash messages or notifications faster than a programmable system GSM based display can also be used in other public places like schools, hospitals, railway stations, gardens etc. It introduces SMS -based display board incorporating widely used GSM to facilitate the communication of displaying a message on the display board via the user's mobile phone from any part of the world. This project is built on the AT89S51. [9]

### III. PROPOSED WORK

Our project intends that the users should be able to display and control the smart LED Display monitor and can display various information in a single window by dividing it into multiple frames at any time and anywhere.

The web application's principle starts with displaying the academic calendar, workshops, activities, and placement and university rank holder details on the smart LED Display monitor. The main aim is to make it easier for faculties to display any information to avoid manual work.

#### A) SYSTEM ARCHITECTURE:

### System Architecture

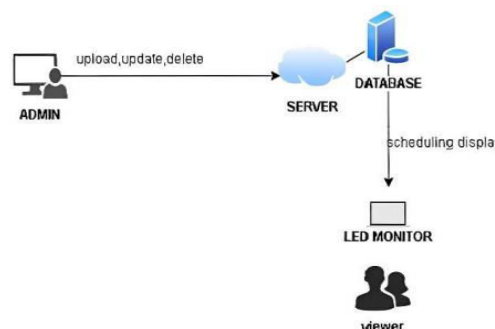


Fig. 1 System Architecture

Only authorized users can be login into the website. After login, the admin can able to perform operations like add update, and delete. The date added/updated by the admin can be retrieved from the database through the server. The server will fetch the data from the database and schedule the display which will be displayed on the LED monitor. The user will see the monitor on which the data is displayed.

**B) FUNCTIONAL MODULES:**

The whole system is divided into two modules. User and Admin are the two modules. Both modules are having different functionalities to perform. Our project intends to give a platform to our college by which they can go towards digitalization by using the application for displaying academic information. To reduce the manual efforts, to increase the attractiveness of the department the project will be helpful.

- **User:** The user can view the information. Users can do the following activities.
  - a. Display panel– view academic information
- **Admin:** The admin can do the following activities to visit our web application.
  - a. Admin Authentication – Sign up and log in.
  - b. Admin panel – Insert and update academic information.

**C) . FLOW OF THE SYSTEM:**

The user will first go to our web application. After this, the user needs to log in to our portal. If a user is new, then he/she needs to register first and then log in. Here, If anyone wants to see academic information on the display monitor then he/she has to login into the website by using a guest login. For the admin role, there is a control panel on which the admin can navigate using the login credentials and make changes through it.

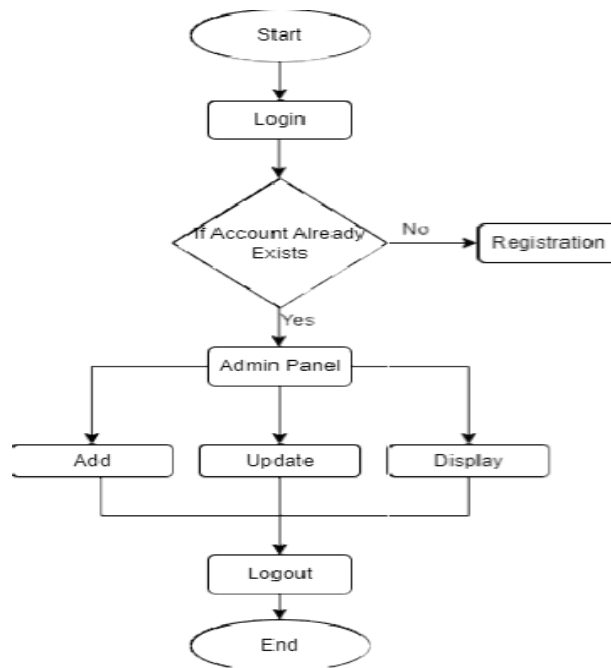


Fig 2. Flowchart

After login into the website as a guest, the slider will appear in which the academic calendars, notices, congratulating to place students, good thoughts, workshops/events, and faculty and student achievements will be displayed. In the case of admin, after successful login, the user will see five-panel options will be displayed and the admin can navigate to each of the panel options and can modify the information which is displayed on the LED monitor accordingly.

#### IV. RESULT



This is what the display panel of the website looks like.

After login into the website, the admin can manage the things which will be displayed. after managing the admin need to set the display panel page. After setting the page the students or viewers can be able to see the display panel.

#### V. APPLICATION

- 1. Education:** Institutions and organizations often rely on traditional methods of notifying people of events and updates, such as posting notices on physical bulletin boards. However, this approach can be replaced with wireless notice boards that can display information in real-time. By utilizing this technology, upcoming events and updates can be displayed seamlessly.
- 2. Advertisement:** In shopping malls, information about various product offers is often conveyed through announcements made at specific intervals. Instead of relying on such announcements, electronic display boards can be used to continuously display information regarding products and related offers.
- 3. Transportation:** Transport hubs such as train or bus stations, airports, and street-level stops need to communicate with travellers frequently. Communication of arrival and departure times, possible delays, promotions of shops, and weather conditions are critical. LED screens can be used to display this information effectively and efficiently.
- 4. Sports stadiums:** Spectators at sporting events such as football, tennis, basketball, or rugby matches need to have good visibility, particularly those who are farther from the field or track. LED screens can be used to enhance visibility, serve as markers, and even display video advertising, making their use even more profitable.
- 5. Government institutions:** Public institutions such as town halls and delegations receive a high volume of visitors daily. Effective communication of their activities, agendas, meeting timetables, and promotional campaigns is crucial. LED panels offer a versatile and dynamic means of communication that can be used to convey this information effectively to both workers and the general public.
- 6. Offices:** Displaying quarterly KPIs, welcoming new workers, and raising the morale of employees is essential for any company. LED panels provide a colourful and interactive means of communication that can be used to keep everyone updated on the latest news and information within the company.
- 7. Industries:** To boost morale within an organization, notice boards can be utilized to display individual or company certifications and accomplishments. This approach can help to foster a sense of pride and motivation among employees.

#### VI. CONCLUSION

It has helped to explore the various application that has been previously developed. With this survey and study, we have developed a web application for engineering teachers and students of our institution to display academic information in our college. This web application in the future will help multiple institutions to display the academic information of their colleges. This will reduce manual efforts and can increase attractiveness and attentiveness.

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