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DESIGN OF IOT BASED LED DISPLAY BOARD

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Abstract: Everything around us is becoming smart such as smart phones, smart televisions, and smart refrigerators, so why not smart displays boards for advertisements and notices. We will look at the different types of LED advertising, their benefits, and upcoming trends that are transforming the business landscape. People are now adapted to the idea of the world at its fingertips. The old-wired display boards are controlled by micro controller. To change message, we need to change the micro controller program code again and again. We can get around these restrictions by integrating a wireless IOT communication interface. The era of intelligent, real-time message display on display boards has begun. This paper describes how "IOT Based Real Time Digital Led Notification Display Board" was created.

Keywords: IOT, Smart devices, Display Boards, LED

I. INTRODUCTION:

Any institution or site of public utility, such as bus stops, train stations, colleges, malls, etc., must have a notice board. But sticking various notices day to day is a difficult process. By adding a wireless IOT communication interface, we can get beyond these limitations. Display board technology has entered the era of intelligent, real-time message display [1]. This article explains the creation of a "IOT Based Real Time Digital Led Notification Display Board". The paper is built using Node MCU which is heart of the system. Display is obtained on paper tor. A Wi-Fi is using for Data transmission. Anytime we want, we can add, move, or change the text to suit our needs. Notices are sent using an authorised Computer at the transmitter. Raspberry Pi [2] is connected to Wi-Fi at the receiving end. A notice is received by the receiver when it is sent from the system by an authorised user. An electronic device can transmit data wirelessly through a computer network, including through high-speed wireless connections, thanks to the widely used wireless technology. The information comes from a verified user. LED scrolling message boards are widely used in:

- Notice board displays
- Public advertising boards
- Passenger information display boards in BUS/TRAIN/TRAM/MATRO, etc.
- The names or store signs

A single LED in the colour red makes up the majority of these scrolling message boards. However at the moment, RGB LED boards and multi-colour LED boards are both readily available. The term message scrolling on MATRIX LED boards refers to all sorts of boards in which the LEDs are coupled in a ROW-COLUMN arrangement. A straight forward message scrolling on MATRIX LED board has just one animation effect, which causes the message to scroll from right to left. But, there are numerous boards like this with a variety of animation effects, allowing a message to emerge from: Provide dissolving effects, emerge and then vanish, bounce from left to right, and many more. We've shown a straight forward concept here where a user — that's all LED display system aims at revolutionizing the use of traditional wooden, pin-paper notice boards in educational institutions like schools and colleges. Notice boards are required in almost every commercial building as well as schools and all other educational institutions. The use of traditional notice boards is becoming a problem, as they usually go unnoticed resulting in missed notices. Also, the traditional notice display requires typing, editing, printing and getting authorization done manually which is a really tedious job to do. So, these notice boards clearly need a technology driven upgrade, catering to the modern digitalization needs. This is an IOT based paper that focuses on the use of speech to voice input method to display Notices on an LED matrix based Notice board as output.

II. PROBLEM STATEMENT:

The proposed system E-Circular is to overcome the existing problems. It is to display the circulars from Transmitter unit to respective receiver unit using wireless transfer. The transmitter unit consists of the microcontroller, Wi-Fi transceiver combined as shown in Fig.1. If we type any matter in the web server it will transfer from Telegram Mobile App transmitter unit to receiver unit. The receiver unit receives the transmitted data and it displays in LED board. The suggested "IOT Based Digital Notice Board" solution is affordable, rapid, dependable, and secure for any organisation that needs to frequently distribute notices while minimising physical labour. Since we are utilising GSM [3–4] technology, there is no issue with range, or distance. We are able to send notification from anywhere. The suggested system makes use of the ATMega328, LED Display, GSM Module, and SIM900.

It has mentioned its marketing benefit. Only 180 degrees of light are produced by LED technology. Every other kind of light radiates light in all directions from its source. Accessories are required to reflect and/or deflect light from 360-degree emissions. As a result, the system's overall expenses rise and losses are unavoidably experienced, making the device less efficient than it otherwise would be. Consider the typical bulb, which is a light that shines into the ceiling. The issue is that you're illuminating the room rather than the ceiling. This issue is totally resolved with LEDs, which also increase the system's overall energy efficiency.

figure 1 lights comparison

III. OBJECTIVE:

The main objective of this paper is to develop a LED display board which gives notifications for students in educational institutions. A wide range of products from Visual Led can be customised for use in advertising, promotion, other informational purposes, leisure pursuits, sporting events, etc. LED displays have so many functions and applications that each screen will only be fully effective if we have made the proper choice. This is why it's crucial to heed the guidance of knowledgeable professionals, like those at Visual LED. This is why this post is dedicated to the different uses of LED displays, so that you are clear on the features that you should select in each case and make sure you get a good return on investment. Take paper and pen and jot them down. All the uses and applications of LED screens for information:

- Offices
- Government institutions
- Transportation
- Shops
- Streets

Rental LED screens are ideal for:

- Sports stadiums
- Concerts
- Talks, presentations and other events

IV. METHODOLOGY:

Currently, almost all universities offer their electrical notice board access to e learning platform in their websites, which contain the educational material of the subjects taught at the university, attendance, library activity, academic calendar etc., in the same way, we have to open the website to check for the attendance, timetable and any videos about our college. The principal objective of this paper is to develop a mobile application which gives students access to a range of personalized information direct to mobile devices. It enables students to stay informed with the ease and convenience that mobility brings. This application can be loaded in mobile phones which support java making it easier than ever to access University specific information on the goes every one the college..

The research methodology is carried out based on the following:

1. Data gathering
2. Data analysis
3. Coding
4. Testing

Analysis of the proposed system

The proposed display system which is an embedded system, is a combination of software and hardware components is analyzed in ordered to decide whether if it’s worth going ahead with this paper whose design has been chosen. In the analysis phase of this proposed system fact finding was done in order to investigate how things are currently done in order to gather data. Below is the method use in analyzing the proposed display System

V. EXISTING SYSTEM

The traditional lock systems which are been used from decades are outdated. They can’t provide security for households up to the mark. The technology which is being used in these existing locks need to be updated. The security system needs to be updated for the betterment of the security provided. Before we get into deep, let us know you first about the LED Display Board. LED Display Board is a video display panel that shows videos using light-emitting diodes. The use of LED display boards for multiple purposes, such as billboards, store signage, public transportation vehicles, and many more, has increased recently. A smaller

display or a component of a bigger display screen is an LED display panel. Conventional and SMD panels are the two different types of LED panels. The majority of indoor and outdoor LED panels are constructed using regular (discrete LED) panels. The world's longest LED display board is almost 1500 feet long and is situated in Las Vegas, Nevada.

VI. CONCLUSION

The proposed system receives, saves, and verifies the message before displaying it on the LED board. LED boards are used in places like railway stations, retail centres, educational institutions, businesses, traffic control in smart cities, and other public locations to display messages. The cost of printing and photocopying is reduced since a large number of users can access the material quickly. The gadgets are easy to install and maintain, and data transfer is faster. An LED matrix is being used to show this notification. In this article, we'll build a display for Google Assistant-driven speech input. Using Google's speech-to-text capability, the spoken input will be translated to text output and then shown on the LED screen. This essay aims to transform, or rather digitalize, the conventional use of paper-pin notice boards in schools, universities, and other institutions. Advertising is the lifeblood of every industry, and doing it well may mean the difference between a business's quick success and its painful slow extinction. Many different types of advertising exist, some of which go back to the industrial age. The significance of using attention-grabbing language and images to attract customers was understood back then. Only the quality and business opportunities have changed dramatically as of late. The usage of flexible LED lights for advertising is one of the most popular methods. We will look at the different types of LED advertising, their benefits, and upcoming trends that are reshaping the business landscape.

VII. RESULT:

figure 2 display of message

figure 3 display of message

figure 4 circuit diagram

VIII. REFERENCES:

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