SPEECH TO DISPLAY SYSTEM FOR COLLEGE ANNOUNCEMENTS

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ABSTRACT

This paper aims at designing a LED based scrolling message display system that displays the given speech as a text. The system uses Google Assistant to communicate with the LED display board. This system is used to display the announcement instantly onto the display board. These display boards are required in almost every school, college as well as commercial buildings for announcements and advertising purposes. The use of traditional notice boards is becoming a problem, as they usually go unnoticed resulting in missed notices and the traditional notice display requires typing, editing, printing, and getting authorization done manually which is a really a time-consuming job to do. The LED display board used here consists of led lights arranged in 16 rows x 32 columns. These display units can display messages of multiple kinds including alphabetic, alphanumeric, numbers etc., in static or scrolling formats. The main objective of this paper is by using a NodeMCU we can send messages to any distant location and to develop a wireless display board that displays announcements in the form of text. Consume less power and are easy to operate also notification can be delivered within seconds. The voice feature can be added with the proposed system as a further enhancement for using the system.

Keywords: Google Assistant, NodeMCU, Scrolling message display, LED Display board.

INTRODUCTION

Nowadays, almost everything is finding its way into the digital world, we try to look for ways that are simpler, to complete basic everyday mundane tasks. And many of us find these answers with the help of technology and subsequently, Internet of Things as well as Embedded Systems. 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 tedious job to do. So, these notice boards clearly need a technology driven upgrade, catering to the modern digitalization needs.

This paper focuses on the use of speech to voice input method to display Notices on an LED matrix-based Notice board as output. We have projected our ideas to implement Speech to text conversion using

Google Assistant and display the resultant output. This saves time and eliminates chances of forged authorization with the help of a secure Google account.

LITERATURE REVIEW

By Diptanuprasad Chakraborty, Shubham Yadav, Sona Rathore, Sunil Kumar, Ruchita Agarwal, Pallavi Chandrakar.

This system introducing the overall design of "Smart rolling LED Display using Arduino and Bluetooth" with low cost and user can access multiple applications. If anyone wants to display the message, they can send message through using android Bluetooth by using this paper. This paper deals with advanced wireless Arduino development board. The main objective of this paper is to design a wireless board that displays messages sent from android phone user using Bluetooth. The main controlling device of the whole system is Arduino. Matrix LED Display module, Bluetooth module are interfaced to Arduino and android development tool with APK application. The introducing concept of wireless technology using Bluetooth in the field of communication we can make our communication more efficient and faster, with higher efficiency. We can display the messages with less errors and maintenance. This model can be used very efficiently used in schools, chain restaurants in colleges wherein students and staffs can be informed simultaneously in time.

EXISTING METHOD

The existing system was implemented using Bluetooth technology, which is a wireless system, but the range of Bluetooth is very short. So, this system can be implemented within short ranges only. If the user wants to change the message it needs to be done using a Bluetooth device and hence the person needs to be present at the location of the display board. It means the message cannot be changed from wherever or whenever.

Disadvantages of the existing method:

- Range of operation

- Person should write the message

- Less secured.

PROPOSED METHOD

This is a scrolling message display, which might be utilized as the digital notice board, and moreover a Wi-Fi transceiver, that will be that the most recent innovation utilized for communication between the mobile and the embedded devices. System can work like once the user desires to display or update the notice board.

This proposed system consists of an Arduino controller as a main controller, NodeMCU, and a P10 LED Matrix to display the notice. The notice that must be updated on the notice board is sent to Arduino using Google voice assistance via NodeMCU which is connected to the Arduino. So that we can send messages from anywhere.

Block Diagram
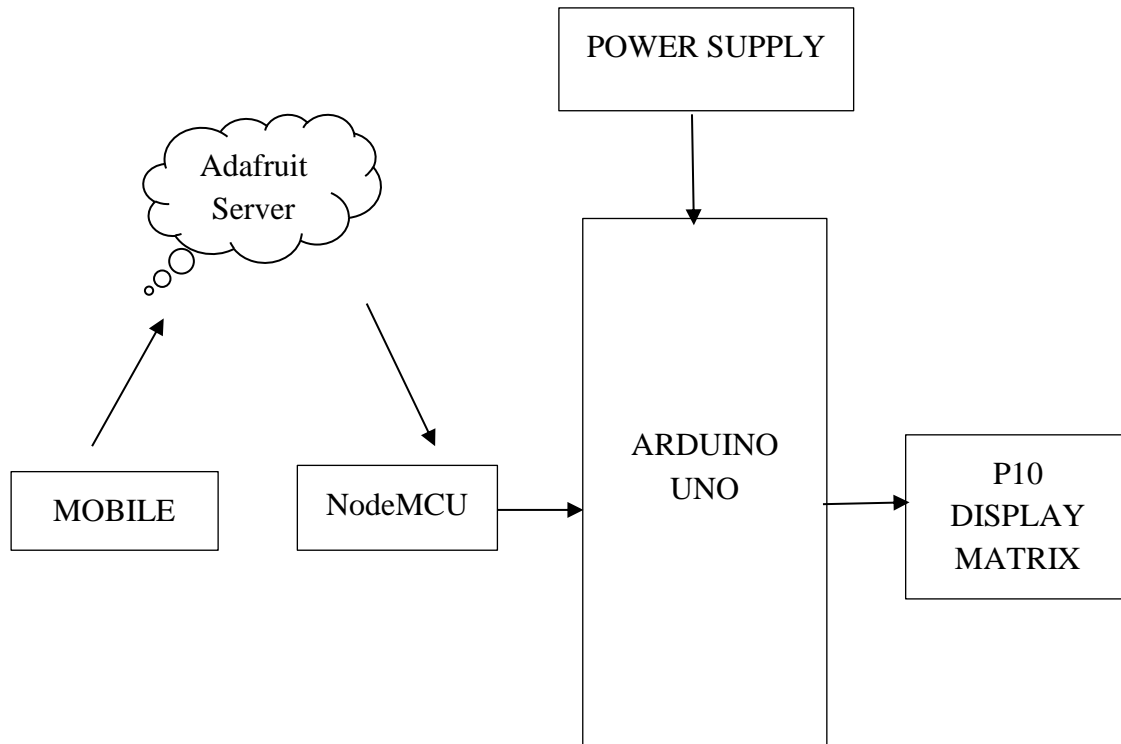
Fig 1 Block diagram of proposed system

METHODS OR TECHNIQUES USED

The Arduino integrated development environment (IDE) is a cross-platform application (for Windows, macOS, Linux) that is written in the programming language Java. It is used to write and upload programs to Arduino compatible boards, but also, with the help of 3rd party cores, other vendor development boards. The source code for the IDE is released under the GNU General Public License, version 2. Arduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a microcontroller) and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board. The Arduino platform has become quite popular with people just starting out with electronics, and for good reason. Believe it or not, those 10 lines of code are all you need to blink the on-board LED on your Arduino. The code might not make perfect sense right now, but, after reading this tutorial and the many more Arduino tutorials waiting for you on our site, we'll get you up to speed in no time! The Arduino IDE employs the program argued to convert the executable code into a text file in hexadecimal encoding that is loaded into the Arduino board by a loader program in the board's firmware.

IFTTT is both a website and a mobile app. The acronym stands for 'If This, Then That'. The service launched in 2010 with the following slogan: "Put the Internet to work for you". It's changed a lot over the years, however. Currently, with IFTTT, you can connect all your "services" together so that tasks are automatically triggered and completed. There are numerous ways you can connect all your services - and the resulting combinations are called "Applets". Applets essentially automate your daily workflow, whether it's managing smart home devices

or apps and websites. So, for instance, if you own the Philips Hue smart lighting system, you could use IFTTT to automatically turn on a light every time you're tagged in a Facebook photo.

RESULT

The message needs to be displayed on the scrolling display system is given as a speech using the google assistant which converts the speech into the text and uploads the data to the cloud server.
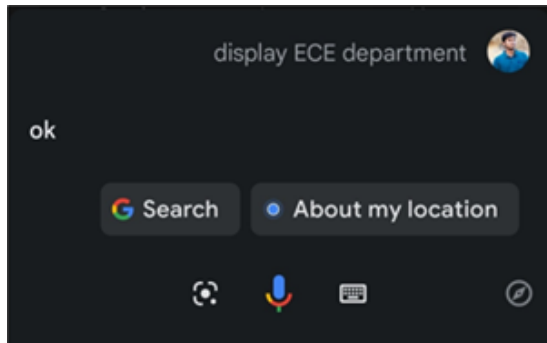

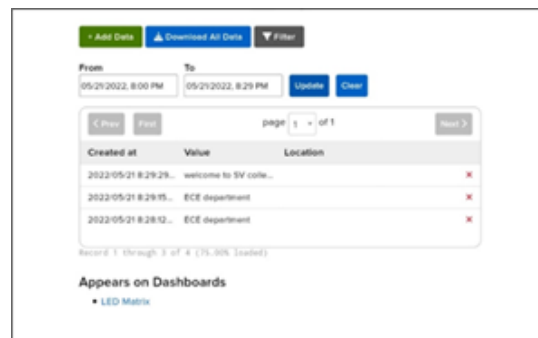**Fig 2 Speech given through Google Assistant**

Fig 3 Messages uploaded in the cloud server

Fig 4 Message displayed on the LED panel

Fig 5 Message displayed on the LED panel

ADVANTAGES

1. No need of any cables for displaying the new information on the LED display.
2. It is very easy to operate and consumes less power
3. The whole setup of notice board is portable.

APPLICATIONS

1. This system is mainly used in organizations, schools, and colleges.
2. The applications of wireless notice board also include public places like bus- stands, railway stations, airports, shopping malls and parks to display the information wirelessly.

CONCLUSION

This is a notice board that uses P10 LED display. In this paper we are going to develop a display system, to which speech input will be provided, using Google Assistant. The speech input will be converted to text output

using Google's speech-to-text feature & subsequently will be viewed on the P10 LED display. By introducing the concept of this technology in the Field of the communication we can make our communication more efficient and faster, with greater efficiency. We can display the messages with less errors and maintenance. Our goal with this paper is to revolutionize, rather digitalize the traditional use of Paper-Pin notice boards in schools & colleges, etc.

FUTURE SCOPE

As of now we have made a single display system which can be placed at only one place but in the extension of this system will be able to add more display systems in which the same message can be displayed but can be placed in many places. In addition to this we can made the input speech itself as the output i.e., along with the display we can get voice also.

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