IoT Based Real Time Digital Led Notification Display Board using Node MCU via Telegram Messenger App

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Abstract: Everything around us is becoming smart such as smart phones, smart televisions, smart refrigerators, so why not smart displays boards for advertisements and notices. Display boards are primary thing in any institute, organization, public utility places like bus stops, railway stations, parks, shopping malls to display information regarding platforms, various advertisements about the products, or important notices. People are now adapted to the idea of the world at its fingertips. The old-wired display boards are controlled by microcontroller. To change message, we need to change the microcontroller program code again and again. By adding IOT wireless communication interface, we can overcome these limitations. It is a start to the era of smart and real–time displaying of messages on display boards. This paper explains the development of "IOT Based Real Time Digital Led Notification Display Board Using NodeMCU via Telegram Messenger".

Keywords: Node MCU, MAX232, LED Display, Wi-Fi Technology.

I. INTRODUCTION

Notice Board is primary thing in any institution or public utility places like bus stations, railway stations, colleges, malls, etc. But sticking various notices day to day is a difficult process. A separate person is required to take care of this notices display. This project is about advanced wireless notice board. The project is built around NodeMCU which is heart of the system. Display is obtained on project tor. A Wi-Fi is using for Data transmission. At any time we can add or re- move or alter the text according to our requirement. At transmitter authorized PC is used for sending notices. At receiving end Wi-Fi is connected to raspberry pi. When an authorized user sends a notice from his system, it is received by receiver. Wireless is a popular technology that allows an electronic device to exchange data wirelessly over a computer network, including high speed wireless connections. The data is received from authenticated user. Then it sends to arm 11 that is raspberry pi.

A. Internet Of Things (IOTS)

The Internet of Things (IoTs) can be described as connecting everyday objects like smart-phones, Internet TVs, sensors and actuators to the Internet where the devices are intelligently linked together enabling new forms of communication between things and people, and between things themselves. Building IoTs has advanced significantly in the last couple of years since it has added a new dimension to the world of information and communication technologies. It is expected that the number of devices connected to the Internet will accumulate from 100.4 million in 2011 to 2.1 billion by the year 2021, growing at a rate of 36% per year. In the year 2011, 80% machine to machine (M2M) connections were made over mobile networks such as 2G and 3G and it is predicted that by 2021, this ratio will increase to 93% since the cost related with M2M over mobile networks are generally cheaper than fixed networks. Now anyone, from anytime and anywhere can have connectivity for anything and it is expected that these connections will extend and create an entirely advanced dynamic network of IoTs. The development of the Internet of Things will revolutionize a number of sectors, from automation, transportation, energy, healthcare, financial services to nanotechnology. IoTs technology can also be applied to create a new concept and wide development space for smart homes to provide intelligence, comfort and to improve the quality of life.

II. LITERATURE SURVEY

A. Existing System

In the current scenario the notice/advertisement boards are being managed manually. This is a time consuming task to put up notices on the notice board. This wastes a lot of resources like paper, printer ink, man power and also brings about loss of time. The existing system is based on GSM technology so it requires SIM card to send the messages on notice board. In the existing system is also supports international roaming capability of GSM, so we can send message to receiver from any part of the world that's why extra charges are required.

B. Proposed System

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.

III. DESCRIPTION

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 project 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.
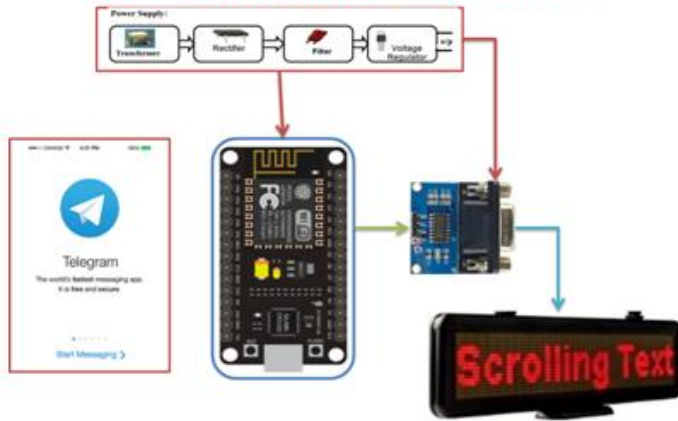

Fig.1. Block Diagram.

Advantages:
- For transmitting wireless message system use Wi-Fi module.
- System uses mobile technology and wireless communication so cost of system is less.
- Use of system is easy, for delivering message or information mobile module is used and displays it on LED matrix.
- Backup data can be stored in cloud.
- Real time communication is possible.

Applications:
- Display Boards on Public Places.
- Smart Cities.
- Smart Colleges
- Railway Station

IV. CONCLUSION

The proposed system accepts the message, stores it, validates and displays it on the LED board. LED boards are used to display messages in Railway stations, shopping malls for displaying advertisement, Educational institution and organizations, managing traffic in smart cities and other public utility places. Cost of printing and photocopying is also reduced because the information can be delivered to a large number of people in a very short time. It provides faster transfer of information and are easy to install and maintain. It provides an efficient way of displaying messages on Notice Board and also

get auto notifications using Wireless Technology. It also provides user to easily receive the important information or message.

V. REFERENCES

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