



IOT Based E-Notification System

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ABSTRACT

Notice Board is primary thing in any institution / organization or public utility places like a bus stations, railway stations and parks. But sticking various notices day-to-day is a difficult process. A separate person is required to take care of this notices display. In this paper we are proposing work using a arduino module interfaced with LED display designed to improving noticing process by android application. ESP8255 chip sense the opened wifi source and get connected to internet and process the notice which is send through mobile application. This project deal with an advanced hi-tech wireless notice board.

Keywords : 48*8 LED Display, ESP8266 Wifimodule, Arduino Module, Mobile App.

I. INTRODUCTION

The increasing demand of today's scenario for various academic institution is its automation. Every institution display number of notices on its notice board which require the manual works. A Notice Board is a very essential device in any institution / organization or public utility place like bus stations, railway stations and parks. The main aim of this project is to design a message driven automatic display which reduces the manual operation. The information can in turn be updated instantly at the location. The message to be displayed is sent through a android application which is first received at Arduino wi-fi module and message will be displayed on LED display through the controller AT mega 328. This smart notice board can be used in many applications including educational institutions, banks, public places like bus and railway stations, this kind of notice board reduces unauthorised access of notice and also attaching various notice papers to notice board will be overcome by this e-notification system so instead of that single scrolling display can display all kind of notices. The problems faced by wooden notice board could be well resolved by the implementation of our E-Notice Board application that brings an advanced means of passing notices around in the college in a much easier and efficient way. The following are the main functions of wireless notice board –

1. Using android based wireless notice board message can be sent to any distance located e-notice board
 2. By interfacing arduino module with mobile app we can sent text messages from any remote area.
- Arduino module, ESP8266, LED display and microcontroller atmega328 these are the main peripherals required for developing e-notice board. The block diagram of system is shown in figure given below-

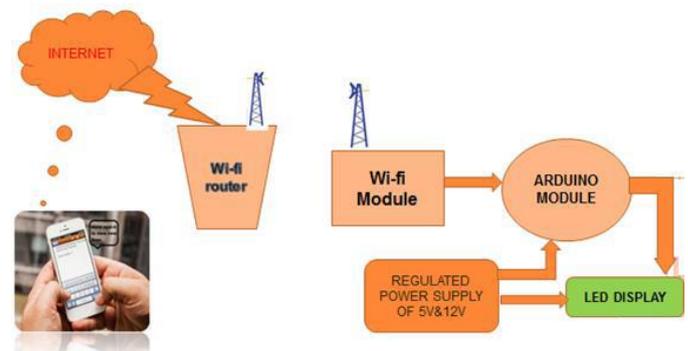


Figure 1. block diagram Components for the system are as given below-

- 1.1 Power supply
- 1.2 LED display
- 1.3 Arduino module
- 1.4 Smart phone
- 1.5 ESP8266 module

Description for components mentioned above-

1.1 Arduino Module

Arduino is open source physical computing platform based on simple microcontroller board, and development environment for writing software for it. Can be used to develop interactive objects taking inputs from variety of switches or sensors, and controlling variety of physical output. Arduino is variety of arduino board based on ATmega328. It has 14 digital input/output pins, 6 analog inputs, 16MHz ceramic resonator, USB connection, power jack & reset button. Arduino programming language is implementation of wiring simple physical computing platform, which is based on processing multimedia.

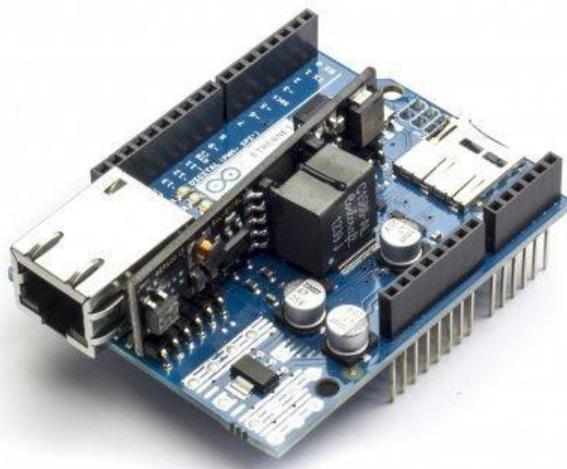


Figure 2. Arduino Module

1.2 ESP8266 Wi-Fi Module

The ESP8266 requires 3.3V power not more than that. Interfacing with an Arduino or any other microcontroller and using this board as a peripheral. Programming the module directly and use its GPIO pins to talk to your sensors, eliminating the need for a second controller. The cost of this module is around 199 rupees.

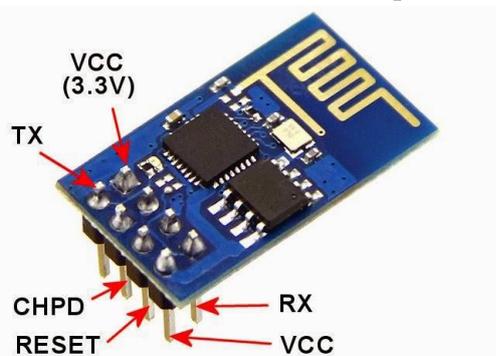


Figure 3. ESP8266 wifi module

1.3 LED Display

In this project we are using a matrix LED display. The cost of this display is around 2000rs. The display having ability to show 256 characters in a scrolling manner. The display having Serial USART Input, Easy to use for static and scrolling messages. Static display of characters without scrolling is also possible. It operates on 5v. It is connected to microcontroller via RS232 port.



Figure 4. LED Display

ATMEGA328 microcontroller -The Atmel 8-BIT AVR RISC-based microcontroller combines 32 kB ISP flash memory with read-while-write capabilities, 1 KB EPROM, 2 kB SRAM, 23 general purpose I/O lines, 32 general purpose working registers, three flexible timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte-oriented 2-wire serial interface, SPI serial port, 6-channel 10-bit A/D converter (8-channels in TQFP and QFN/MLF packages). The device operates between 1.8-5.5 volts. The device achieves throughput approaching 1 MIPS per MHz. As of 2013 the ATmega328 is commonly used in many projects and autonomous systems where a simple, low-powered, low-cost microcontroller is needed. Perhaps the most common implementation of this chip is on the popular Arduino development platform, namely the Arduino Uno and Arduino Nano models.

1.4 POWER SUPPLY- power supply is a basic electrical source which is required to give supply to various components. we need regulated supply and for this we have dc regulated supply with transformer, full wave bridge rectifier, IC7805

II. AUTHENTICATION ALGORITHM

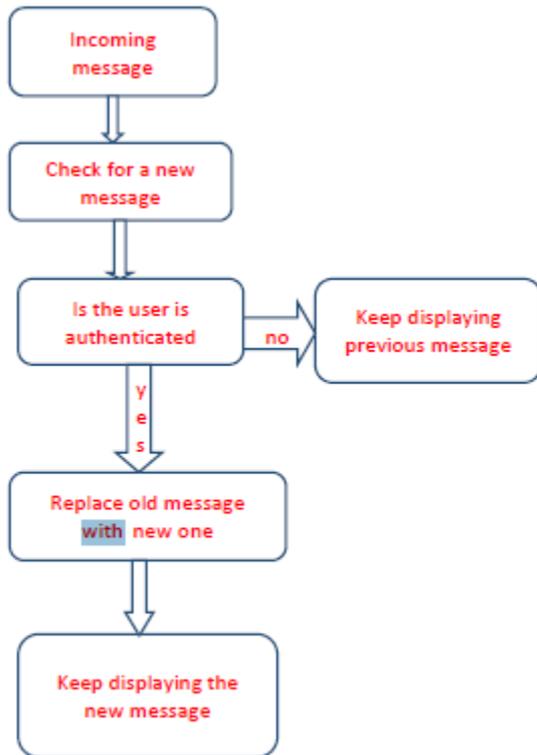


Figure 5. Flowchart For System

III. RESULT

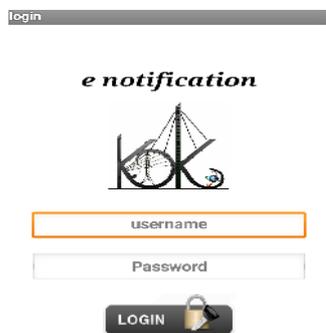


Figure 6. Authentication Required for login



Figure 7. Input from mobile application



Figure 8. Output on LED Display Board

IV. CONCLUSION

The paper proposed the design and architecture of a new concept of Smart Electronic notice board. The advantage of the system lies in the fact that it can prove to be digitalization of old notice pattern which is user friendly and beneficial for the people .By introducing the concept of wireless technology in the Field of communication we can make our communication more efficient and faster, with greater efficiency we can display the messages and with less errors and maintenance. This system can be used in college, school, offices, railway station and commercial as well as personal use,By developing Android application in this proposed methodology we can enhance the security system and also make awareness of the emergency situations and avoid many dangers

V. FUTURE SCOPE

We can add some value addition in the display system when notice board doesn't have any message to display, it can show room temperature data etc.we can also add text reader to speak the message out. The idea of many user authentication can also be applicable that means we can authenticate more than one user.

The proposed payment system combines the Iris recognition with the visual cryptography by which customer data privacy can be obtained and prevents theft through phishing attack [8]. This method provides best for legitimate user identification. This method can also be implemented in computers using external iris recognition devices.

VI. REFERENCES

- [1]. VarunShukla, AnkitKushwaha, Shivam Singh Parihar, VarunPratap Singh, ShubhamSrivastva, “Authenticated wireless information display system using GSM module”, CAE. vol .5, no. 3, june 2016
- [2]. Atish A. Peshattiwari, ShashantS.Jaykar, Kuldeep G. Pande,AbhinavA.Parkhi , “ARM 7 based E-Notice board”,octomber 01,2015
- [3]. Prof. Sudhirkadam , AbhishekSaxena, Tushar Gaurav, Android