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A REVIEW ON SOLAR BASED WIRELESS ELECTRONIC PORTABLE NOTICE BOARD

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ABSTRACT-

Notice Board plays a vital role to convey any message with the advent of digital technology. It is efficient to represent the information on digital devices. It is mandatory to use the digital media rather than use the conventional media like paper printing. This project is mainly about with Bluetooth in which there is an android application that is connected with LED display via Bluetooth. The message received by Bluetooth is send to microcontroller that further displays it on notice board. The notice board and LED display interfaced to microcontroller, powered by regulated power supply from main supply of 230v AC supply and solar energy

KEYWORD- LED notice board, digital notice board, wireless portable notice board

INTRODUCTION-

Traditionally notice board is all about sticking information, but sticking various notices day to day is a difficult process and consumes more time. To overcome this problem here is a project deals with and innovative wireless notice board with solar technology. The system is comprised of both software and hardware. Software area includes the Bluetooth android application development and code algorithm for microcontroller to receive and display a notice on graphical dot matrix display. In this project, we used AVR studio software for coding and ProgISP software to load code into microcontroller. The hardware area includes the development of receiver hardware using Atmega328 microcontroller are its configuration of both module. The development system reflects the minimum requirement to realize wireless notice board. This digital notice board project is design to develop a mobile controlled scrolling message display for notice board. This scrolling display made up off matrix LEDs. Android mobile can be used to change the display on the notice board. In this project we are using Bluetooth technology to excess the display. Here we used solar as a solar energy which is stored in battery and supply is given to dot matrix display. In this project there is another way to give power supply by 230v AC mains. Whenever used to turn power supply then the system display default message on the LED display. Whenever user needs to change the message on the notice board, the user had to type a message on an application installed on an android mobile and send it to the microcontroller using Bluetooth technology.

LITERATURE REVIEW

These notice boards can be used in many places like educational institutions, stations etc to display notices or some information to the people who need it. As the technology was increasing day by day, the use of it was also increasing. So, traditional notice board can be replaced with digital notice board that means the conversion of analog to digital systems including Wi-Fi systems. Since the whole world is running out through internet, our project is mainly based on Wi-Fi module.

RESEARCH OBJECTIVE

The primary objectives of this study can be summarized as follows:

1. To make effortless notification board.
2. To design and develop wireless portable notice board

DEFFERENT METHODS FOR SAND MEASURMENT

All the programming related to the system had been done using embedded language. The Notice board also sends an acceptance to the user by displaying the current existing notice in webpage. Initially, the programs are executed. After successful execution of the programs an IP address is generated. With the help of IP address we can access the webpage. The webpage includes the text area in which we can enter the message and can be updated. And also contains additional features like changing the levels of brightness and delay time of the scrolling text. The sent message is received at Wi-Fi module, which then transmits it serially to the LED matrix. Finally the message is displayed on the LED Display.

PROPOSED METHODOLOGY

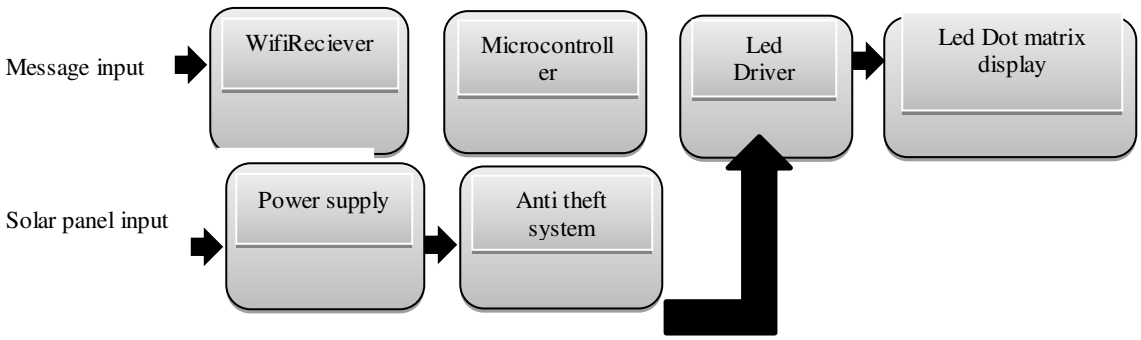
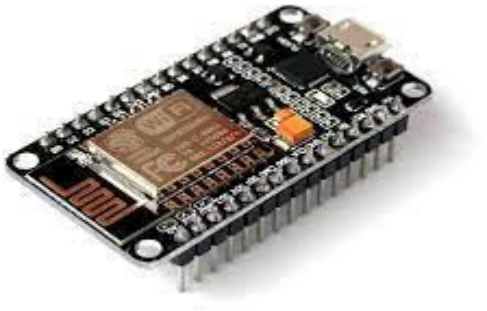


Figure 1: Basic Block Diagram of Proposed System

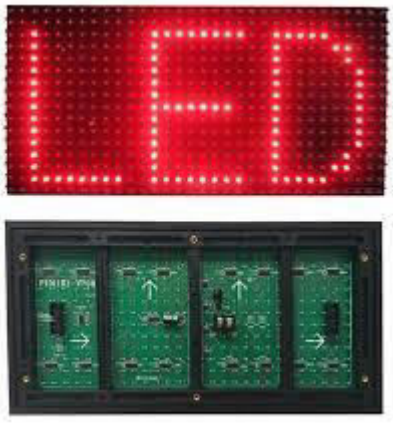
NODE MCU

NodeMCU is an IoT Module based on ESP8266 Wi-Fi Module. It uses Lua Scripting language and is an open source Internet of Things (IoT) platform. This module has CH340g USB to TTL IC. Features:- Open source IoT Platform, Easily Programmable, Low cost & Easy to Implement, WI-FI enabled.



LED DOT MATRIX DISPLAY MODULE

The MAX7219 is combined with a series of input and output common cathode display driver, it is connected to a microprocessor. LED matrix can also be linked to the bar graph display. MAX7219 also permits the user to select on each data coding or non-coding. Simply an LED Matrix is connected to multiplexer. Features:-A single module can operate an 8X8 common cathode lattice, Module voltage: 5V



POWER SUPPLY

This project uses a synchronized 5V, 40A power supply. It requires a 30- 40A power supply to run the led display. Solar panel of 12v 60 watt is used and battery for power storage is 12v 18A lithium ion .

ARDUINO

Arduino is used in this project for maintaining power supply as the system having various power inputs .It is used for switching input power to led display and also optimising battery and to protect the battery from over charge and over discharging.

JUMPER WIRES

A jumper is an electrical wire, or group of them in a cable, which have a connector or pin at each end and it is normally used for making connections between items on your breadboard and your Arduino's header pins. In our project these are used to connect LED matrix and Wi-Fi module.

Conclusion

Wireless operations allow many services, such as long-term communications, that are impossible to implement the use of wires. It provides fast and quick transfer of message and is very cheaper to install and maintain them.

This paper gives us an efficient way of displaying information or message on notice board using wireless technology. It also provides user authentication in order to avoid any misuse of given system. It totally avoids the use paper in displaying of notices and

Wireless operations allow many services, such as long-term communications, that are impossible to implement the use of wires. It provides fast and quick transfer of message and is very cheaper to install and maintain them. This paper gives us an efficient way of displaying information or message on notice board using wireless technology.

REFERENCES

[1] Andersen, H.-E.; McGaughey, R.J.; Reutebuch, S.E. 2005. Estimating canopy fuel parameters using airborne LIDAR data. Remote Sensing of Environment.94: 44149.

[1] Andersen, H.-E.; Reutebuch, S.E.; McGaughey, R.J. 2006. A rigorous assessment of tree height measurements obtained using airborne LIDAR and conventional field methods. Canadian Journal of Remote Sensing. 32(5): 355.

[2] Baltsavias, E.P. 1999a. Airborne laser scanning: basic relations and formulas.ISPRS Journal of Photogrammetry and Remote Sensing. 54: 199-214.

[3] Baltsavias, E.P. 1999b. Airborne laser scanning: existing system and firms and other resources. ISPRS Journal of Photogrammetry and Remote Sensing. 54: 164-198.

[4] Clark, M.L.; Clark, D.B.; Roberts, D.A. 2004. Small-footprint LIDAR estimation of sub-canopy elevation and tree height in a tropical rain forest landscape.

[5] Remote Sensing of Environment. 91: 68-89. Gatziolis, D. 2007. LIDAR-derived site index in the the U.S. Pacific Northwest–challenges and opportunities. Espoo, Finland: International Archives of Photogrammetry Remote Sensing and Spatial Information Sciences. 36 (Part 3/W52): 136-143.

[6] Gruen, A.; Akca, D. 2005. Least squares 3D surface and curve matching. ISPRS Journal of Photogrammetry and Remote Sensing. 59: 151-174.

[7] Hinsley, S.A.; Hill, R.A.; Bellamy, P.E.; Baltzer, H. 2006. The application of LIDAR in woodland bird ecology: climate, canopy structure and habitat quality Photogrammetric engineering and Remote Sensing. 72: 1399-1406.

[8] Lee, J.; Yu, K.; Kim, Y.; Habib, A. 2005. Segmentation and extraction of linear features for detecting discrepancies between LIDAR strips. IEEE International Geoscience and Remote Sensing Symposium. Los Alamitos, CA: Institute of Electrical and Electronic Engineers. 7: 4954-4957.

[9] Maas, H.-G. 2002. Methods for measuring height and planimetry discrepancies in airborne laserscanner data. Photogrammetric Engineering and Remote Sensing. 68(9): 933-940.

[10] Means, J.; Acker, S.; Fitt, B.; Renslow, M.; Emerson, L.; Hendrix, C.2000. Predicting forest stand characteristics with airborne scanning LIDAR.