Smart Auto Solar Display

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Abstract :-

Nowadays in India, frequent power cuts are very common. Hence, consumer tends to adopt alternative measures to generate power. They usually rely on solar energy for power generation. Power generation from solar energy comes with lots of pros and cons [2]. It is becoming essential to increase the use of renewable energy sources namely solar energy as compared to conventional sources of energy generation [3]. Bulletin boards are now required by many organizations. Bulletin board marks are used to display messages/information posted by the top management of the organization. A separate person is assigned to post various notices, which is a very complicated process. Here, the project deals with wireless bulletin boards. Whenever a message is sent from a user's device with the Android app installed, it will appear on the wireless bulletin board. This message can be sent from any Android tablet/smartphone, etc. via a graphical interface based on touch screen operation. When the user sends a message from the Android app device, the WiFimodular receives the message. The WiFi module has its own IP address and port number, so only the working user knows. It is then sent to the microcontroller to help display the announcement on a radio bulletin board equipped with a 16*2 LCD display.

Keywords: Microcontroller, Wi-Fi (Wireless Fidelity), LCD (Liquid Crystal Display), Android Phone, SMS.

Introduction

This project is for the development of a computer-controlled scrolling message board display. It can also be used to display the latest information anywhere, such as universities, shops, train stations, etc. Information is transmitted using a PC. Traditionally, bulletin boards were designed for posting information, but today, posting various notices requires a complex process. A separate person is required to manage this bulletin board. The system displays notifications via PC on the bulletin board. This system can be implemented in many important places to display up-to-date information. For example, if implemented in a university, it can display all student information. It is very convenient for students and university management to display all information. The system can also be implemented in train stations and airports to display information about trains and flight schedules. This system reduces paper waste. Information is transmitted through a PC connected to a PIC18f2550 family microcontroller via a MAX232 interface IC. And it doesn't require external memory connected to the microcontroller to store the information. The PIC18f2550 provides EEPROM memory. The LED is connected to the microcontroller to display a message in continuous scroll mode. It goes into the microcontroller and is stored in memory. This project can be divided into two parts. Firstly, this is the connection of the keyboard, and secondly, the removable display panel. Here we are using windows software to receive input from PC via keyboard, send it to microcontroller via serial port and store it well in memory (EPROM). The data is further processed and the output is provided to the LED driver to the LED display, which controls each segment of data through programming.

Electronic notice board can be used at different places where the information is displayed. For example if the system is implemented in colleges all the information uses to the students can be shorted by the higher authorities of the college. It is very easy to use this kind of notice board and display the information. This process helps in having less physical work which is mostly used for physically challenged people. The main aim of the project is to have a electronic notice board where the least information can be shorted by the faculty to the students. The system we are

using is a wireless system, with no wires getting tangled on the board, which makes the system very flexible and can store information up to 30m away. The input we use here is an Android phone. This phone is connected to the bulletin board using Wi-Fi through the connector.

LITERATURE

Uses WiFi technology to send messages to people using a synchronized wireless electronic scoreboard. This helps to deliver messages with no delays more reliably than traditional methods of posting messages to bulletin boards. The proposed system can be used in many public places like colleges, banks, malls, even big buildings to enhance the security system and avoid many dangers. Many at commands are used to display a message on notice board WiFi technology is used to control display board an convey information to more people where the message is sent by the user.

Objectives
1) Develop a bulletin board for a wireless network.
2) To power this bulletin board with solar power
3) To connect the bulletin board to Bluetooth
4) To control the bulletin board through a mobile app

B.Working Principle of the proposed system

We proposed system consists of following components:
1) LCD
2) WiFi Module
3) Power supply
4) Micro Controller
5) Android phone
6) Android application
LCD: The LCD which we are using is 16*2. It contains two lines as it can display 16 characteristics in each line LCD us used to display the message. The operating voltage of the LCD is 5v. WiFi Module: The WiFi module used by the project is Esp8266. This module requires a 3.3VDC power supply. If the power exceeds 33v module is corrupted.

Power Supply: A power supply is used to convert one form of energy into another. Power is supplied by max 230v. Microcontroller/WiFi module and LCD display. Microcontroller: The microcontroller used by the is the 8052 microcontroller. This requires a 5V power supply that the

will use to power all functions of the project. Android Phone : This Android phone uses the Connect Terminal application to communicate with a microcontroller and a WiFi module to display wireless messaging.
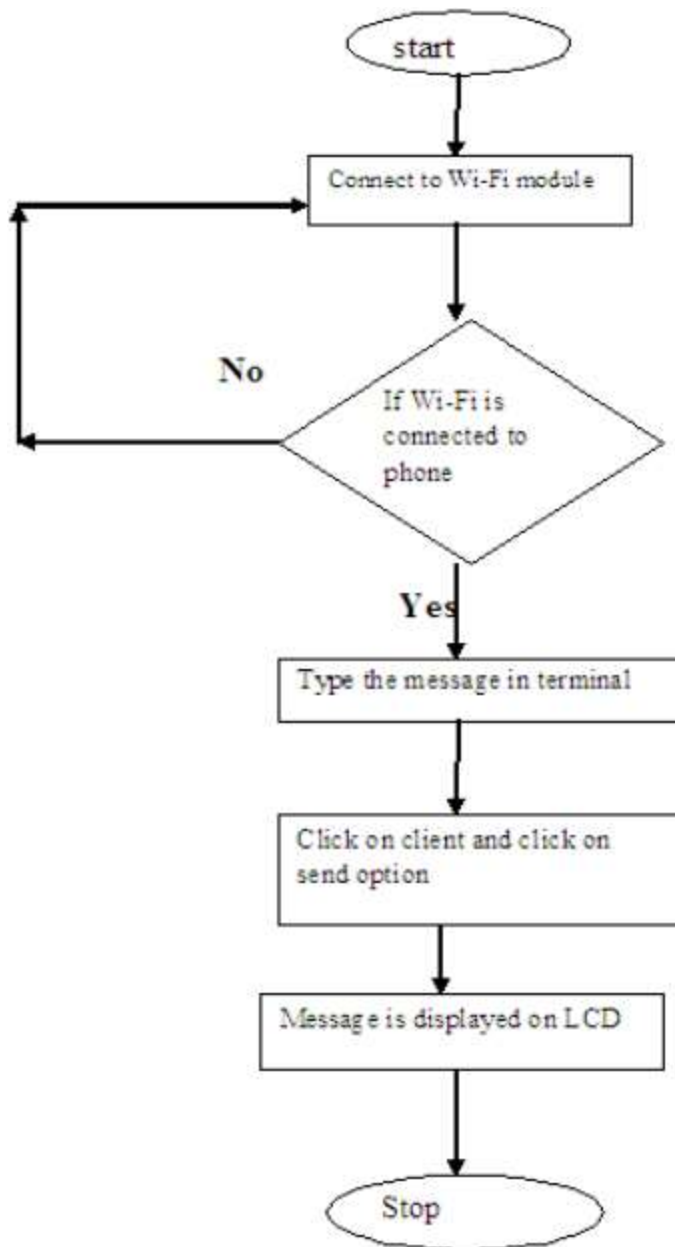
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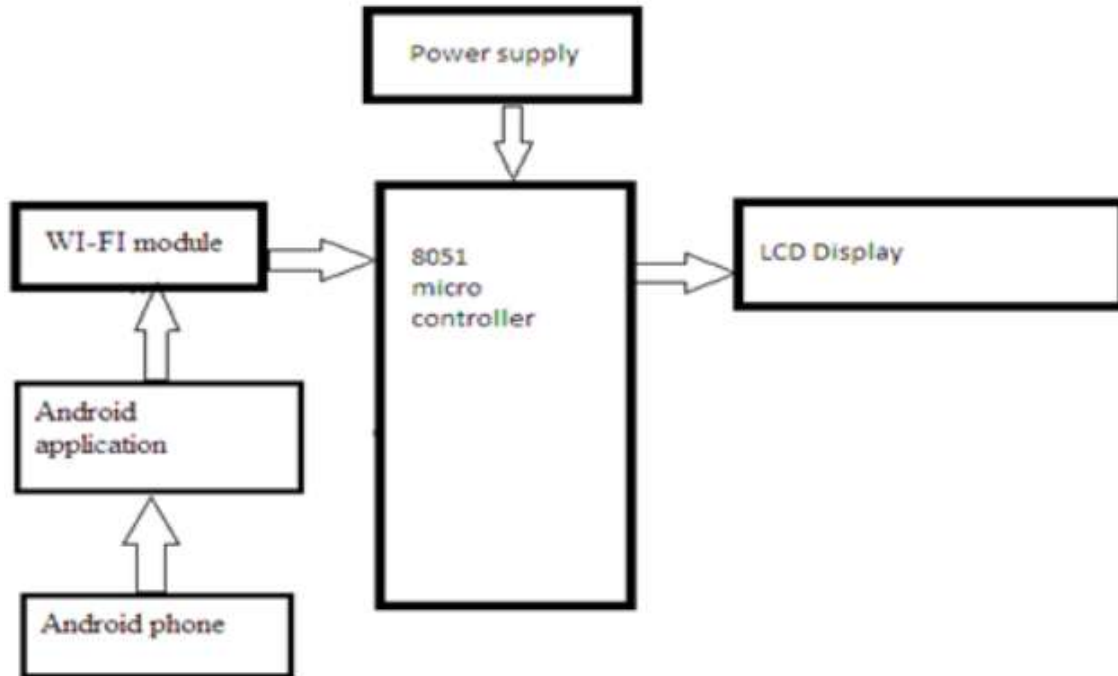
III. System Development

Fig. Flow Chart

Here we are sending data or messages from a computer to a serial cable. This cable transmits data to the microcontroller for further operation. Therefore, the methodology used by the railway platform to display the train details is applied to our project. Normally, when an LED display panel scrolls through messages, its role is to read data from the EEPROM, pulse a column selector chip that controls the column, and then output the data as rows. All of this happens very quickly, as you can imagine. All the magic is in the software. While programming display messages using Windows-based software, the microcontroller's primary role is to read serial data and configure it into EEPROM. Message programming involves pressing a device programming button to prepare the microcontroller to receive serial data from Windows-based software. This data is then sent over a serial cable, EEPROM, for later recall. If programming is successful, the display will scroll from right to left with the message you just programmed. The scroll speed can be set using Windows-based software and the number of times the message repeats can be set.From a data standpoint, what is actually stored in the EEPROM is the line data, which is partitioned into an ENnotice board with a hand LED board (GRDJE/Volume 1/Issue 6/005). All rights reserved

www.grdjournals.com 29 character programming. The project's dot matrix LED display circuit, which is a message scrolling device, is connected to a computer via a serial port. In the end, all you have to do is type a message into the Install Java Application Software message box. And when you reset the switch, a message appears on the screen. The whole system is an embedded system, so messages can be displayed or scrolled wherever there is an exit. There is a PC control function for users. You can use a terminal program or a Java application on your PC to create and store messages on the display microcomputer. The PC and microcomputer communicate through a serial port. Once the message is created and saved, you can disconnect the display from the PC and then connect it somewhere else to view the message. An array of LEDs is built together on a single board called a module. The PCB is designed in such a way that there is only the display and reset button on the front side and all other components are placed on the back side of the PCB. Your message is hardcoded into the microcontroller's memory.

Conclusion

The proposed LED billboard design is integrated with a computer and a moving LED display. This entire procedure is performed using wired technology. Here, by displaying messages using a PC and controller, the disadvantages of the existing system can be overcome, and the data on the board can be scrolled to display the maximum data with the minimum number of LEDs.

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