Solar and IoT Based Weather
Monitoring System

Vaibhav Ladekar, Shubham Balbhadre, Mukesh Thakre, Shubham Puranik

Suryodaya College of Engineering and Technology, Nagpur

Abstract- The system proposed in this paper is a solution for monitoring the weather conditions at a particular place and makes the information visible anywhere in the world. The technic behind this is Internet of Things (IoT), which is an advanced and efficient solution for connecting the things to the internet and to connect the entire world of things in a network. The data from the implemented system can be accessible in the internet from anywhere in the world. In agriculture zone it will be very difficult to check and monitor the weather parameter through wires and analog devices during some weather hazards. To overcome this problem here the wireless sensors are used to check and monitor the weather parameters. The other idea is Vertical farming system. It is implemented for cultivating different crops in small area.

*Index Terms- IoT, vertical Farming, Esp8266*

Existing technology mainly focus on controlling and monitoring of different activities. These are increasingly emerging to reach the human needs. An efficient environmental monitoring system is required to monitor and assess the conditions in case of exceeding the prescribed level of parameters. Sensors are placed at different locations to collect the data to predict the behavior of a particular area of interest. The main aim of the this paper is to design and implement an efficient monitoring system through which the required parameters are monitored remotely using internet and the data gathered from the sensors are stored in the cloud and to project the estimated trend on the web browser. The values from the cloud are updated at each and every moment. The crops are cultivated and the soil are tested mainly the moisture is measured. Thus we can cultivate different crops at a particular area. Vertical farming is nothing but it is a vertically stacked farming and it is a upcoming methodology for framing.

II.   RELATED WORKS

Due to weather disasters and uneven environmental changes, life style of humans will be changed. It is very difficult to monitor different weather parameters through wired system architect and analog devices in an agriculture zone during certain hazardous envy and critical situations. It is very important to measure the weather parameters in agriculture zone for the farmers which help to plan their farms according to the weather conditions. To overcome the problem of monitoring the weather parameters using wired devices, the wireless sensors network devices may take certain steps and issues even in worst case for monitoring the weather parameters.

II.   SYSTEM ARCHITECTURE

The implemented system   consists of a main block NODEMCU and sensors are connected to the NODEMCU. NODEMCU collects the i n f o r m a t i o n from different sensor, then its send a data to Web Server
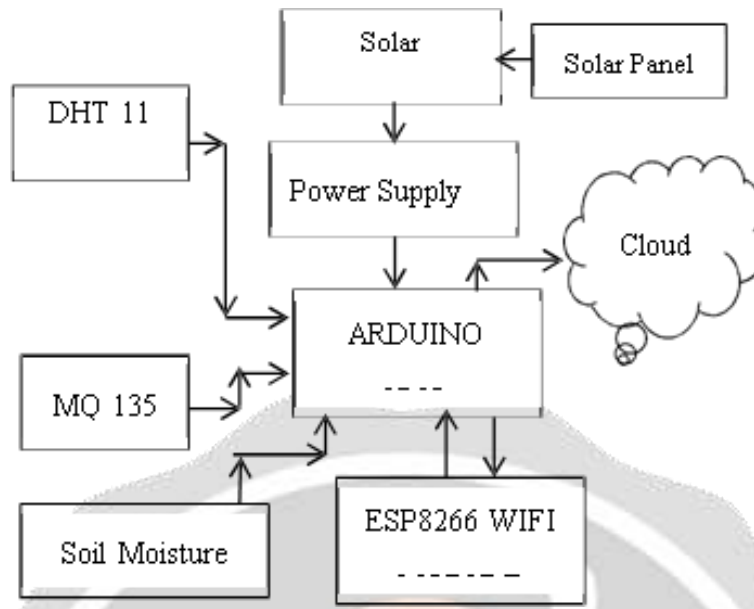
Block Diagram of Solar and IoT Based Weather Monitoring system.

Proposed system

There area unit loads of high finish systems offered currently for around the clock weather observance. But these systems area unit enforced on a awfully giant scale, for observance real time weather for an entire town or state.

Implementing such system for atiny low space isn't possible, since they're not designed for it and also the overhead for maintaining such systems for atiny low space is incredibly high. Our planned system makes use of three sensors to live the weather/environment factors like temperature, humidity, strength, temperature and warmth index. The values read from the sensors area unit processed by the Arduino micro-controller and hold on during a computer file which might be processed upon to derive analysis. The readings are displayed on Associate in Nursing on board alphanumeric display for fast viewing. of these readings can be analyzed to induce the weather characteristics of a selected space and record the weather pattern. These recorded parameters area unit essential and vary from places to places. of these necessities area unit fed into the info and these values area unit necessities and recorded over time. victimisation these values as input we will plot a map of a selected area over time. supported the current weather factors and planned values the set actions area unit done. The set action will include turning on the heat once the temperature is colder than the set worth and turning on the cooling system once the temperature is hot or wet on the far side the set values. The serial output from the Arduino microcontroller which area unit the values browse from the sensors may also be hold on during a info. The info are often used as a source for knowledge if we wish to show values through a web site or a standalone application.

RESULT

After sensing the data from different sensor devices, which are placed in particular area of interest. The sensed data will be automatically sent to the web server, when a

proper connection is established with sever device.

Conclusion

An easy and low price system style to live climate elements in good competence is demonstrated in this paper. the supply of such system is extraordinarily most popular notably, with the institutions, companies that rely significantly on taking selections supported inputs variations; consequently, weather prediction processes will be taken into issues. additionally, the system is taken into account good for dominant the sites supported the change in climate. The system works as a supervisor controller, that govern places looking on the fluctuations of the weather or alternative conditions via feedback operation principles. Hereby, we have a tendency to conclude that the proposed system may be separated in to 2 totally different elements. the primary half is too useful for the businesses and alternative organizations that ar place answerable to plane and manage their works supported weather situations; like, Transportation systems, Airways, and also the Agriculture as a high priority. These comes may be 1used in Agriculture and useful to farmer on uneven global climate change. Houses, Markets.

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[2] International Journal of Engineering Research & Technology(IJERT)ISSN: 2278-018IJERTV3IS090619 Vol. 3 Issue 9, September- 2014'Modular Weather and Environment Monitoring Systems using Raspberry Pi' Kuruvadi Praveen ,AnkhitBala Venkata Department of Telecommunications BMS College ofEngineering Bangalore, India