Weather Monitoring System using Internet of Things

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Abstract

The system proposed for monitoring weather conditions in a particular place like temperature, humidity, CO Level using sensors, sensors detect changes in environment and send it to the users for making statistical analysis, IoT is the technology used for monitoring, collecting, controlling and connecting the system to worldwide, which is the more efficient and advanced solution for accessing the information in the world.

Keywords: Embedded system computing; UART; HTTP, IDE (Integrated Development Environment)

I. INTRODUCTION

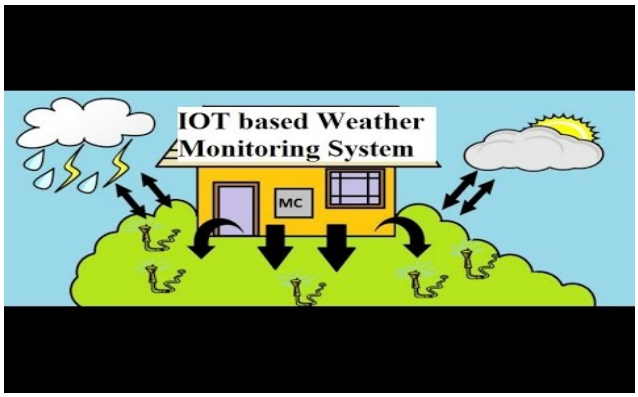


Fig 1. Weather Monitoring System

Step1:

Collection of weather parameters through weather meter

Step2:

Interfacing the weather sensor to cloud platform

Step3:

Store and analyse weather parameters in cloud

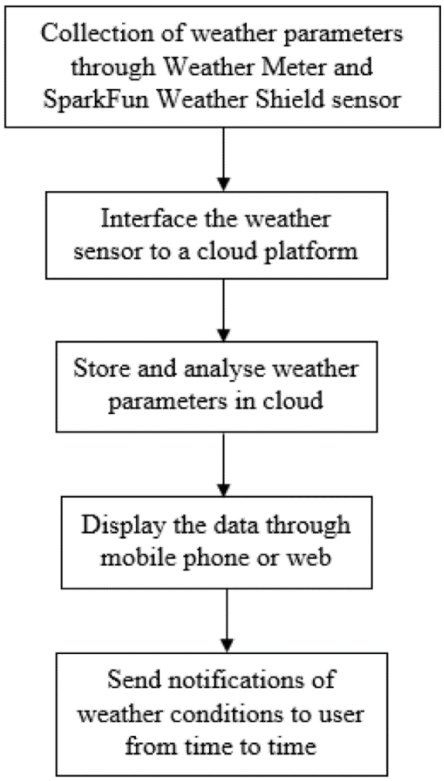
Step4:

Display the data through mobile phone or web

Step5:

Send notifications to the customer time to time.

FLOW CHART



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II.EXISTING SYSTEM MODEL

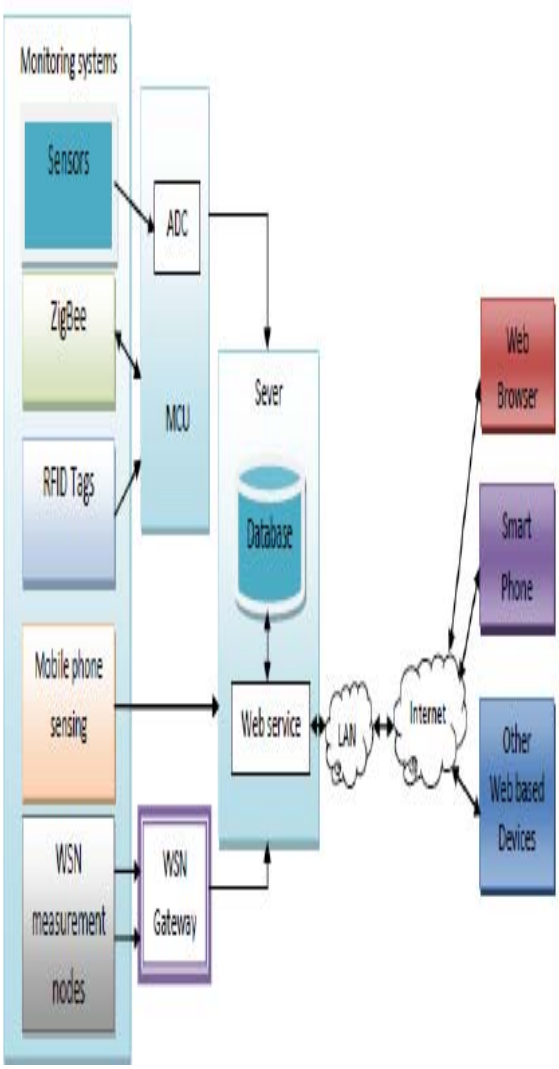


Fig 2. Existing System Model

WSN deals with more no of inexpensive wireless sensor, it is used for collecting, storing and processing the input data and send it to server [1]. WSN gateway is used to get the data from a WSN nodes by anywhere and anytime, it is used to receive, prepare and display in your measurement data [2].

III.PROPOSED SYSTEM MODEL

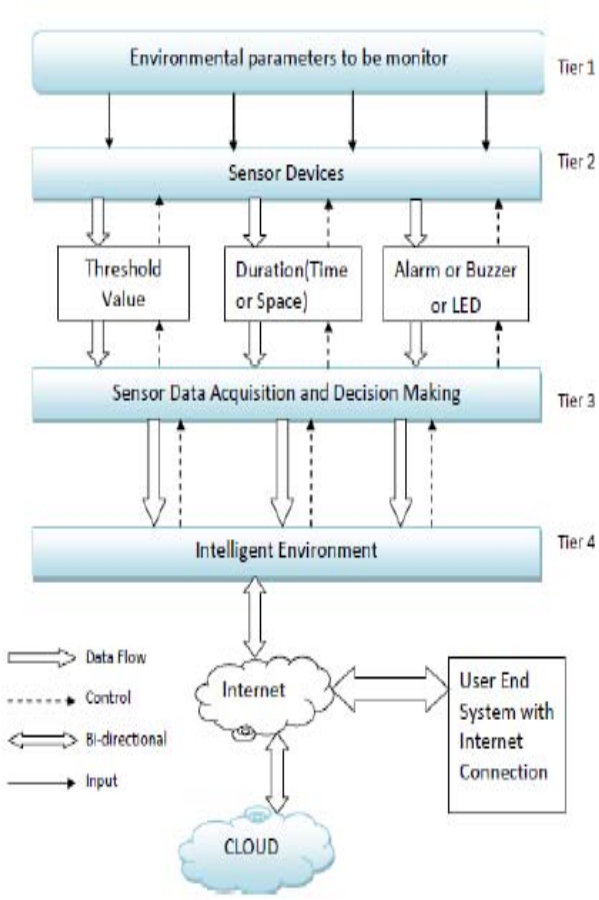


Fig 3. Proposed System Model

Tier 1- Measuring Environmental Parameters

(Temperature, pressure, humidity etc…)

Tier 2- Sensors are used with different range and different uses

Tier 3- Sensor Data Acquisition and Decision Making

Tier 4- Intelligent Environment in this portion collected information will be stored in cloud and it sent do end user.

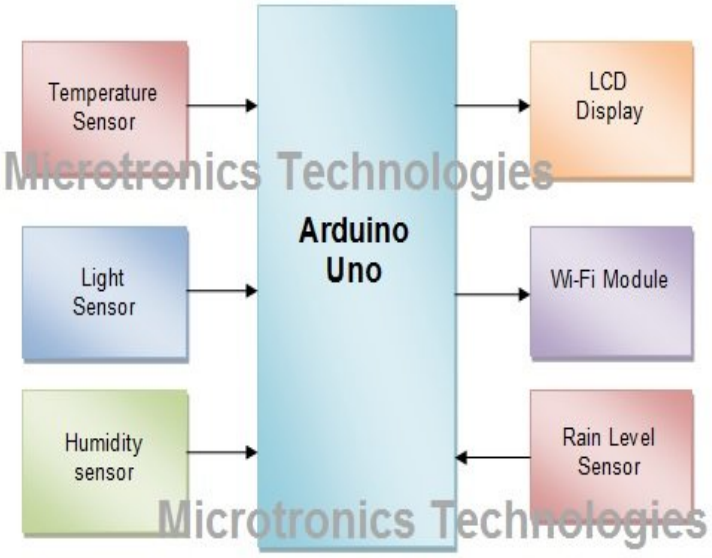


Fig 4. Block Diagram of the project

IV.HARDWARE IMPLEMENTATION

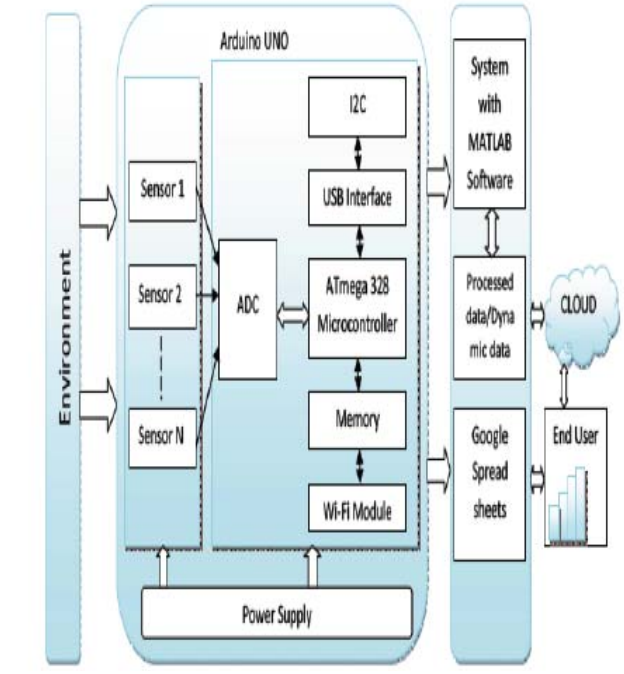
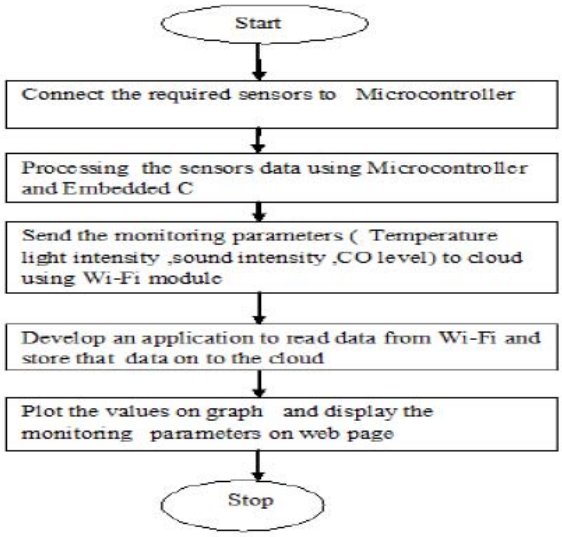


Fig 5. Schematic Diagram of Implementation model

Above system consists of ATmega328 it will act as a central processing unit for the whole system and all the sensors available are connected to it [3]. Microcontroller operate all the sensors connected to it it retrieve's the data from the sensors and send it to Wi-Fi Module [4].

FLOW CHART



Step1:

Connect the required sensors to Microcontroller

Step2:

Processing the sensors data using Microcontroller and Embedded C

Step3:

Send the monitoring parameters to cloud using Wi-Fi module.

Step4:

Develop an application to read data from Wi-Fi and store that data on the cloud.

Step5:

Plot the graph and display the monitoring parameters on the web page.

V. CONCLUSION

Sensors are installed to monitor the parameters like temperature, humidity, and CO Value using IDE (Integrated Development Environment) received data and result analysis will be send to end user through Wi-Fi. AT Mega 328 controller used to control the all the sensors, and it receives the data from sensors, and send it to end users through cloud.

FUTURE SCOPE

This type of model can be used for industrial & domestic for (weather monitoring or Humidity monitoring) etc…alert Message can be send to users from time to time.

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