IOT Based Weather Reporting System

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Abstract: *The IOT based Weather Reporting System is proposed to get live reporting of weather conditions on agriculture used regions. It has to monitor temperature, humidity, wind, light and rain level on large ground fields. The Internet of Things (IOT) technology behind the system is aimed to offer an economically efficient solution to monitor weather conditions. The system is monitoring the environmental conditions and sends the information to the cloud and data is shown like graphical statistics on a BLYNK app, and are forecasted the harmful weather conditions like storm, dryness. This system will monitor the changes of weather conditions occurring over the environment and then provides the users fastest way to access the information from anywhere.*

Keywords: Internet of Things (IOT), Monitor, Blynk App, Environment Conditions, Report

I. INTRODUCTION

Weather station is a technology that collect the data to the weather and environment using different sensors. In this project we are designed our weather station. We all know that a weather station is not a single device but it is a combination of many s mall tools like a sensors and other gadgets. Many people are well known to use the android phones so our application is beneficial for such purpose. This device is about IOT based gives weather reporting system.

II. LITERATURE SURVEY

1. Development of IoT Based WeatherReporting System:
   In this paper weather reporting system willdisplay the sensor data to Thingspeak andIFTTT using Arduino ESP32 Sensor Station.
2. Weather Monitoring System UsingBlynk app
   In this paper which attempt to monitor the weather at the city and also imp in Agriculture using Arduino Uno.
3. IoT Based Weather Monitoring System
   In this system we can streamreal time data over the web server using ESP8266 using Node mcu ver1.0
4. IOT Based Weather Station UsingRaspberry Pi:
   In this paper a weather station was assembled using spark Fun weather shield and weather meter with Arduino Uno R3 using Raspberry Pi3 andArduino Uno R3
5. IOT Based Weather Monitoring System
   In this paper measure Humidity, temperature and pressure parameters and display them on the Blynk application.
6. IOT Based Wireless Weather Monitoring System Using BlynkServer
   In this paper they are used relay, vibration sensor, soilmoisture and LCD display

III. OBJECTIVES

The main objective of this project is to originate electronic device or network that can capture and restore temperature and humidity and after that send data to the cloud or website for its analysis. Here we can use the Node MCU a microcontroller for the simple brain of the system. When we use the Node MCU as a microcontroller, we need a Wi-Fi module to establish your Internet connection. And the DHT sensor, which (digital humidity sensor) can detect differences in temperature, humidity and humidity at a certain location, must be integrated into the system. The sensor continuously monitors temperature changes and sends data to the microcontroller. The microcontroller transfer the data

for its storage and visualization to cloud. We can also use IOT platforms such as Blink App IoT to collect data into the cloud for analysis. This system can then be customized to create good animations such as tweets or phone calls, or turn on a device when the temperature/humidity or other parameters are below a certain threshold.

IV. METHODOLOGY
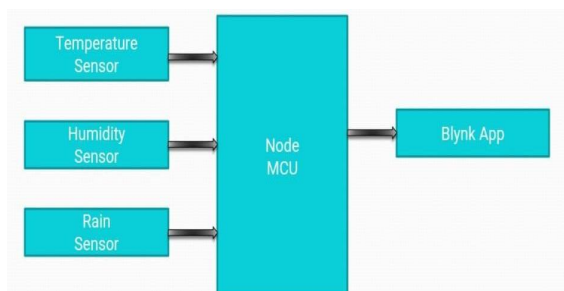
4.1 Block Diagram

Figure: Block dig of IOT Based Weather Reporting System

We designed a system for checking the environmental condition using IOT Cloud they have connected to blynk app and Node MCU(ESP8266). The objective of this project to check the environmental conditions likeTemperature,
Rain, Humidity from anywhere around the world using Arduino IOT Cloud.

A. Hardware Used:

- **Rain Sensor:** A rain sensor is one kind of switchingdevice which is used to detect the rainfall. It works like a switch. Whenever there is rain, the switch will be normally closed.
- **Node MCU:** The Node MCU, it is a microcontroller unit. It is an open source hardware and software development board. Node-MCU-ESP8266 is a one type of controller. It is a board which takes the input from the connected devices to it. The Node MCU ESP8266 development board comes from the ESP-12E module containing it is having 32bit microprocessor. This Node MCU act as Wi-Fi module. Arduino IOT Cloud is the software used for the programming Node MCU is compatible with the PC and it can be easily connected to PC using USB cable.
- **Temperature and Humidity Sensor:** The DH11 is a basic, ultra low cost digital temperature and humidity sensor .It uses a capacitive humidity and a thermistor to measure the surrounding air, and spits out a digital signal on the data pin (no analog input pins needed)

B. Software Used

- **Arduino IOT Cloud:** The Arduino community launched an IOT platform you can interface multiple devices to each other and permit them to exchange real-time data. Besides this, you will beable to monitor and control data from anywhere using a simple Interface.

V. APPLICATIONS

1. It is used in agriculture field for forecasting
2. It is helpful for monitoring weather at places like avolcano, and Rainforests, greenhouse
3. It is fully automated. It does not require any humanattention

VI. CONCLUSION

Weather reporting system using BLYNK app. Which monitor the weather condition at the city and also important for farmers. This project obtained the objectives where to set up weather monitoring system that can check the weather conditions using applications BLYNK. This project also able to display the current whether conditions on weather reporting system. The accomplishment of system to monitor the weather using internet of things[IOT] achieved.

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