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Weather Reporting System using Internet of Things

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Abstract - *The Internet of things (IOT) is the mostly used technology for this type of systems. It makes future realistic things for daily life and it is also used for making advanced level things for better world. The Weather Monitoring and Reporting System project is helpful to get live reporting condition of weather. And it show the conditions like humidity, temperature, and rain sensor to monitor weather and provide live reporting statistics, That machine always sends the data to the microcontroller to transmit the data on online web servers through wifi connections. This system always used to monetize the changing the climate in different conditions. It should always display the weather parameters.*

Key Words: **Internet of Things (IOT), Node MCU, DHT11 Temperature and Humidity Sensor, Raindrop Sensor LCD display, REE552 12C display, Level Converter.**

1. INTRODUCTION

Weather reporting system is a physical object to people sensing the element and they can able to watch the readings of the system. Weather reporting improves the lifestyles for future people. It gives the better result for the knowing of readings. Its shows the quality of air, pollution and healthy environment. Now a day's peoples wants to update day by day in many aspects. Here we are presenting a weather system to helpful for any places and any areas. We build this system particularly in the view of smart cities.

2. LITERATURE SURVEY

In this present world so many systems are available to monitor the environment and weather. IOT weather system can catch the measured data on weather and it gives the readings on screen, It consist of gateway node, router, and end device to manage the system center.

3. INTERNET OF THINGS (IOT)

The internet of things is the powerful source for connecting the physical objects and accessible through internet. The IOT has related to digital machines, computing devices, peoples and animals it provides a special unique identity to transfer data through network without human to human and human to computer interaction.

4. PROPOSED SYSTEM

Weather reporting system allows parameter through internet, peoples can directly access the weather readings through online without need of weather forecasting agency, This system uses humidity, rain sensor, its shows temperature, and provide weather statistics.

4.1 Raindrop Sensor

It is a tool to calculate or sensing the rain and it consist of rain board and control module, Raindrop sensor can also used in different sectors like automobile, agriculture and more. It contains microcontroller like 8051, Aurdino.

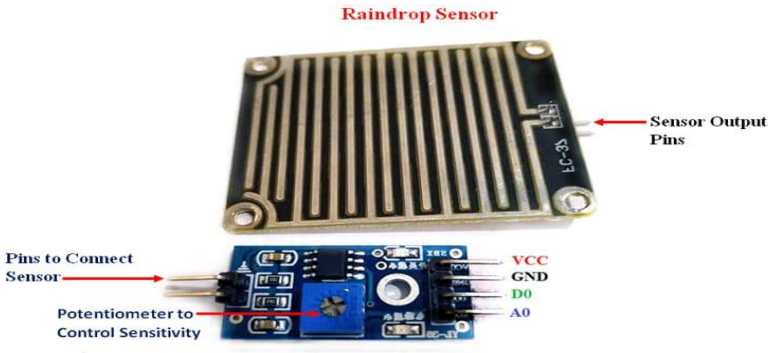

Fig -01: Raindrop Sensor

4.2 DHT11 Humidity and Temperature Sensor

It is a ultra low cost digital temperature and humidity sensor. It majorly used for capture the humidity sensor and thermistor to measure air condition. DHT11 needs careful time to data. The humidity capacitor consist of two electrodes with moisture holding substrate between them.

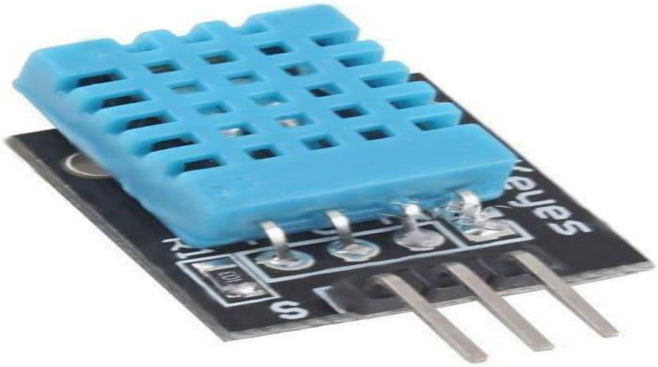

Fig -02: DHT11 Humidity and Temperature Sensor

4.3 Node MCU

The Node MCU (Node Microcontroller Unit) is a open source software for hardware development area. And it is a low cost open source IOT platform. Node MCU consist of System on a Chip called ESP8266, 4Mbytes of ROM and UNO 32 KB. Its special future is store more code compare to UNO. Node MCU is developed with smaller in size compared to Arduino UNO.

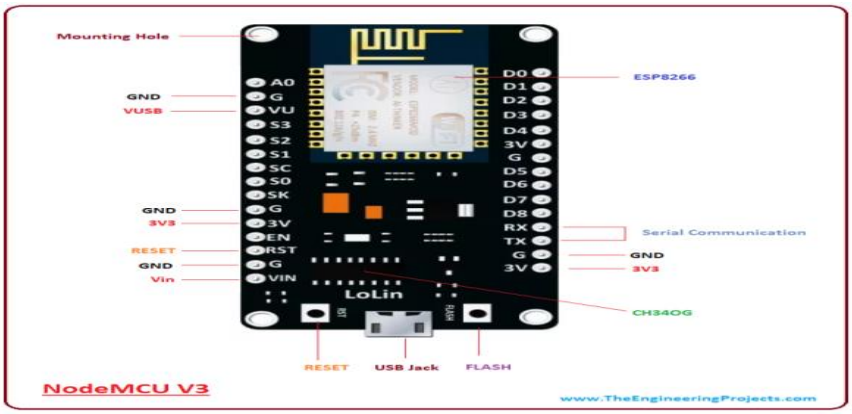

Fig -03: Storing the data or info

4.4 LCD Display

In this weather reporting system we used to displays that LED brightness for reading the progress bar The LCD length consist of 16*2 . It is a low cost and simple way to display the information. This type of LCD displays are we can see our everyday life like in calculators, parking meter, printer and so on, this display very useful system to get the result in better way.

Fig -04: Display the humidity, raindrop and temperature.

4.5 REES521C Display

It is a light emitting semiconductor which is converts current singles to optical source image. This diode can lead semiconductors like pn-junction diode, when energy releases the voltage will applied energy in the form of photons of electron holes. This display we can't be use directly to apply power to the source. We can use Node MCU to LCD.

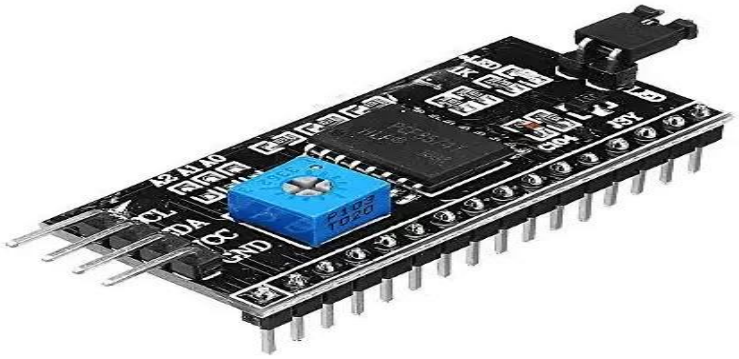

Fig -05: Interface between Node MCU to LCD display

4.6 Level Converter

Level converter channel is safe and easy to allow communication between devices and operating at different levels. It is a small device that safely we can make move on 5v signals. And one more things is the level converter can works on 2.8 V and 1.8 V devices.

Fig -06: Level Controller

5. APPLICATION

IOT weather reporting system is mainly used for formers. Most of the cases this application will be used on agriculture. Most of the cases weather plays a different roles in different situations so this system can use to know the weather reading while doing agriculture and other works. And also it is used for know the weather in such places like rain forests, volcano and etc. This system is fully automated with NodeMCU. No need any human attention.

6. CONCLUSION

As per the conclusion this project gives clear picture of the system that can monitored weather readings by wireless and IOT. The sensors will be interacted by hotspot Wi-Fi and its areas for better communication via wireless. The system can show the sensor data to Blynk App. This is available on Google play store or App Store.

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