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Dept. of Information Science & Engineering

"IoT-based Weather Monitoring and Twitter Notification"

Abstract

The proposed system is an advanced solution for monitoring the weather conditions at a particular place and making the information visible anywhere in the world. The technology behind this is the Internet of Things (IoT), which is an advanced and efficient solution for connecting things to the Internet and connecting the entire world of a network. The system deals with monitoring environmental conditions like temperature, humidity, and pressure sensors and sends the information to the cloud (ThingSpeak), and then plots the sensor data as graphical statistics. It can be used to monitor the temperature or humidity of a particular room/place. In addition to the above-mentioned functionalities, we can monitor the light intensity of the place. They have also enabled us to monitor the atmospheric pressure of the room. The brain of the prototype is the ESP8266-based Wi-fi module. Four sensors are connected to the Node MCU namely the temperature and humidity sensor (DHT11), pressure sensor (BMP180), raindrop module, and a light-dependent resistor (LDR). Whenever these values exceed a chosen threshold limit for each a Twitter post is published, alerting the appliance's owner to take necessary measures. The data updated from the implemented system can be accessible on the internet from anywhere in the world.

Keywords: IoT, Arduino UNO, ESP8266, LDR, BMP180, DHT11 Sensors.

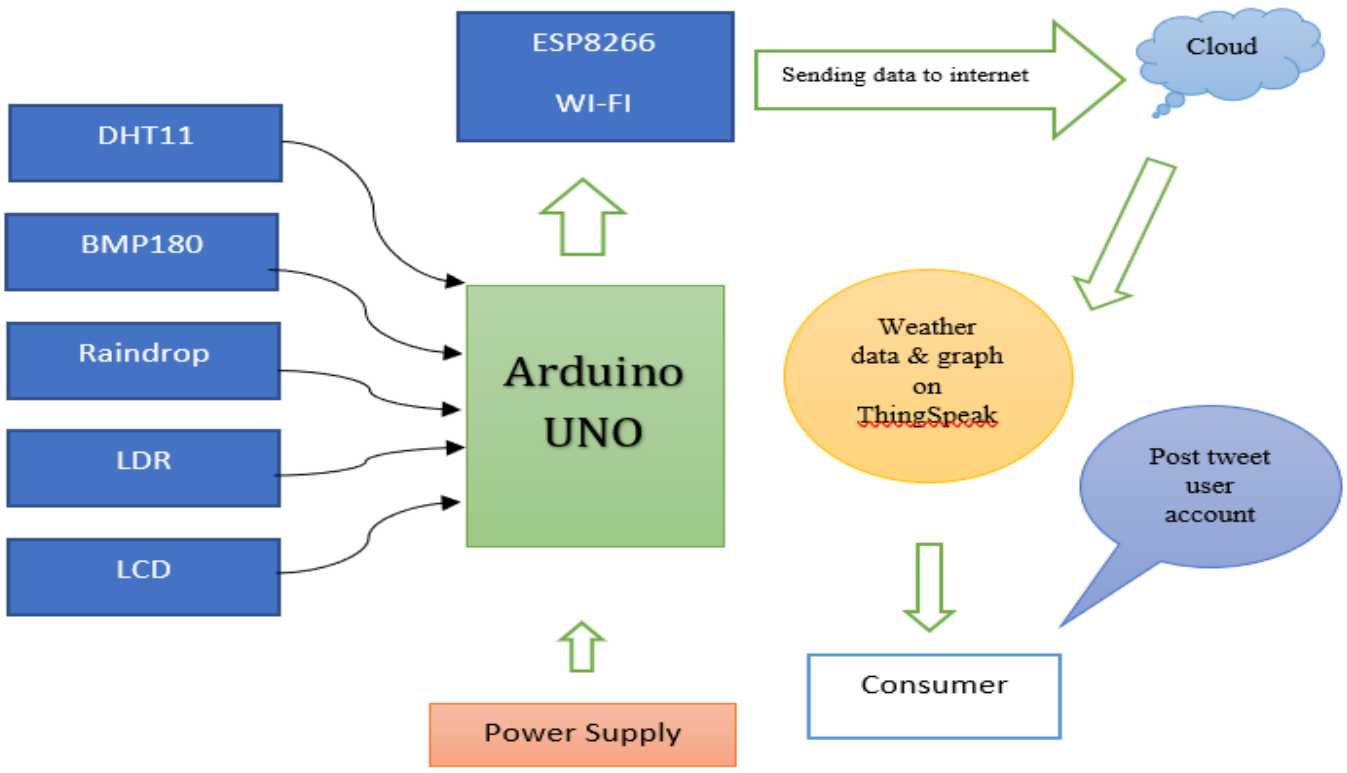

Fig: Block Diagram of Proposed System

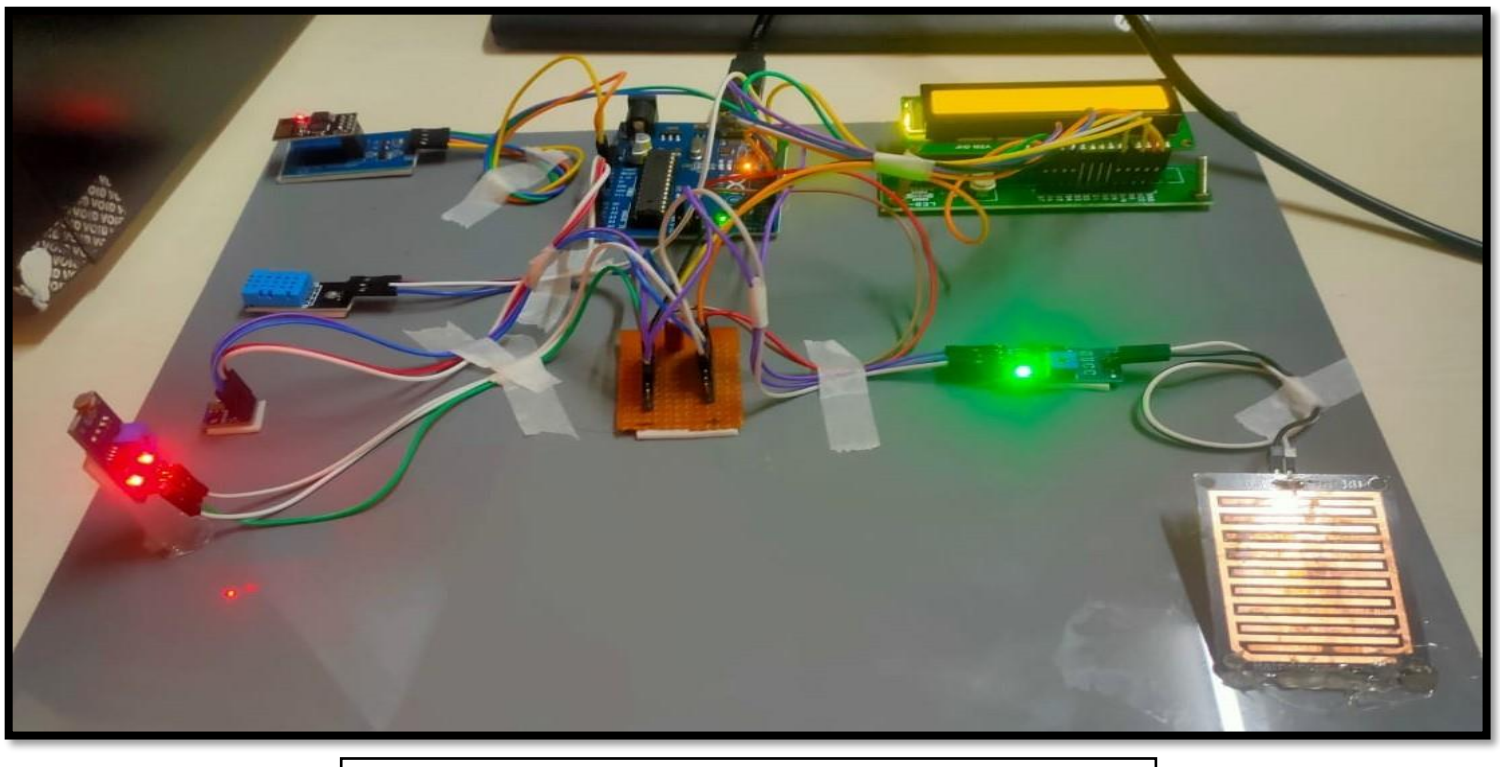

Fig: Proposed System for Weather Monitoring and Twitter Notification

Fig: Proposed System upload all Data to the Cloud (ThingSpeak) for graph statistics

Fig: Proposed System cloud to post notification for Twitter through ThingTweet

Hardware Requirements:

- ESP8266-based Wi-Fi module Nedelcu
- Arduino UNO
- Temperature and Humidity Sensor (DHT11)
- Barometric Pressure Sensor (BMP180)
- LDR
- Raindrop Module
- Power Supply
- USB Cable
- Wires
- Jumper Board

Software Requirements:

- Arduino IDE
- Accessible Wi-Fi
- Social Media (Twitter)
- Cloud Webpage
- Serial Monitor
- Windows 7/8/10/11

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