TEMPERATURE AND HUMIDITY MONITORING SYSTEM

SUBMITTED TO:

EDUNET – UPSKILL CAMPUS,

UNICONVERGE TECHNOLOGIES Pvt Ltd.

PRESENTED BY:

SURREDDY DURGA BHAVANI

DOMAIN: EMBEDDED AND IOT.

OBJECTIVE

- Measures and record temperature and humidity levels in a specific environment.
- Provide real-time data and alerts for abnormal or unsafe conditions.
- Helps in maintaining a stable and optimal environment for various applications such as: Industrial processes, Laboratory experiments, Greenhouses and agricultural settings, Museums and art galleries, Residential and commercial buildings.
- Provide early warnings for potential equipment failures or environmental hazards.

HARDWARE REQUIRE

- Arduino Uno
- ESP8266-01
- DHT11
- AMS1117-3.3V
- 9V battery

SOFTWARE REQUIRE

- Arduino IDE Software
- Proteus

WORKING OF DHT11 (Humidity &Temperature) SENSOR

- The DHT11 is a basic, ultra low- cost digital temperature and humidity sensor. It uses a capacitive humidity sensor and to measure the surrounding air, and spits out a digital signal on the data pin (no analog input pins needed). It is fairly simple to use, but it requires careful timing to grab data.
- Temperature information from DHT11 sensor is analysed graphically on platform using Arduino MCU and ESP8266 Wi-Fi module.
- The DHT11 sensor senses temperature, and sends the information to digital pin 5 of Arduino MCU, From Arduino MCU, humidity and temperature values are uploaded to the cloud at regular intervals of time through ESP8266 Wi-Fi module.
- From the cloud, temperature values can be seen graphically on platform from anywhere in the world.

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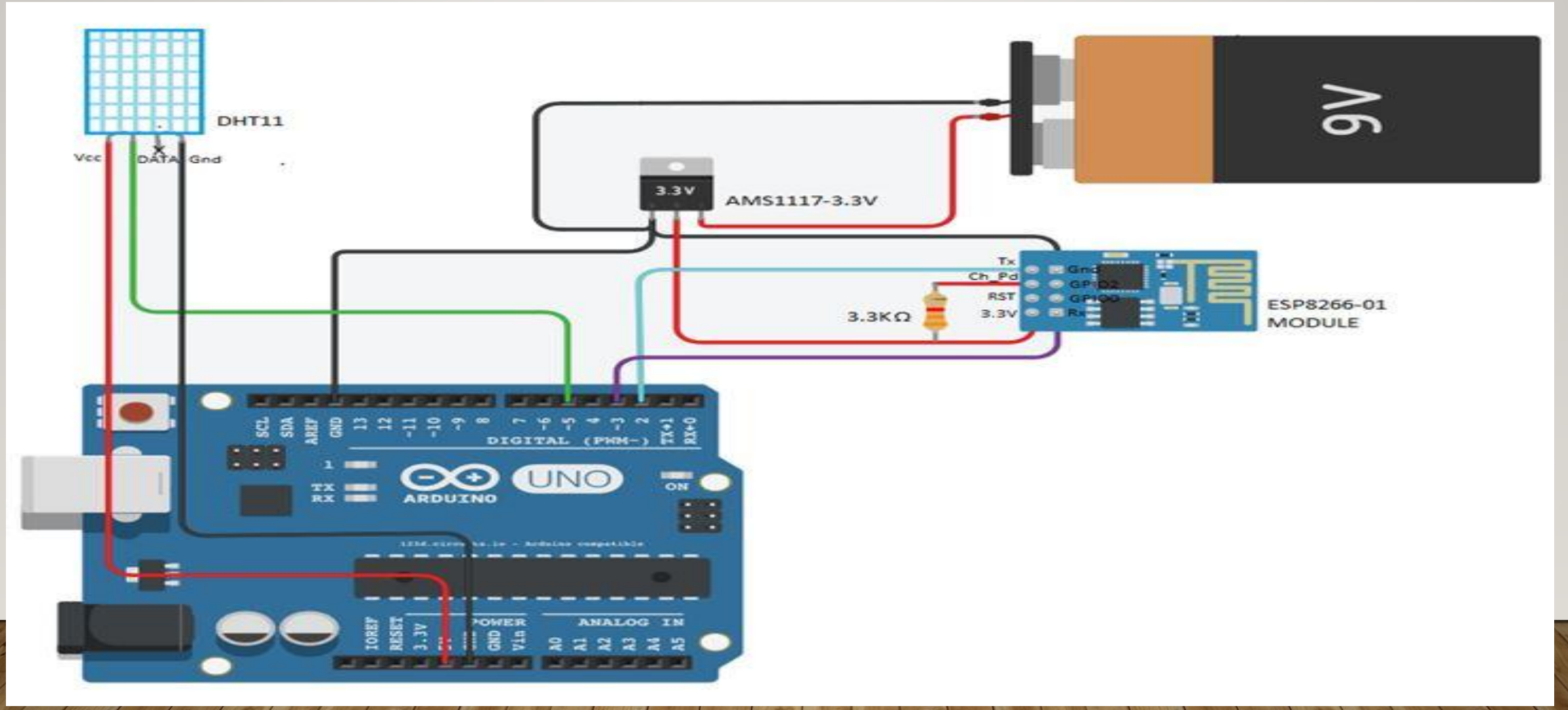

BENEFITS OF TEMPERATURE MONITORING SYSTEM

- Save time with instant notifications and alerts.
- Productivity improvement with advanced analytics.
- Maintaining regulatory compliance.
- Creating transparency in the supply chain.

APPLICATIONS

- HVAC (heating, ventilation, and air conditioning) and building management.
- Server rooms and data centers.
- Food storage and processing.
- Pharmaceuticals and biotechnology.
- Weather stations and meteorological applications.
- Automotive and aerospace.

CONCLUSION

- The use of temperature monitoring sensors has enabled the monitoring of change in temperature affecting the quality of the products.
- Their implementation in different sectors has empowered the logistics and warehousing operations of a company.
- A temperature and humidity monitoring system is crucial tool for various industries and applications.
- It provides real-time data and alerts for abnormal conditions, helping to :- Maintain optimal environmental conditions, prevents damage and equipment failure.

THANK YOU