GOVERNMENT COLLEGE OF ENGINEERING BARGUR

(AUTONOMOUS)

PROJECT TITLE:

Environmental monitoring temperature and humidity

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HARDWARE MODEL

Hardware Model to Preheat DHT11 Sensor Module

As discussed earlier, we need to preheat the DHT11 sensor so that it can work accurately.

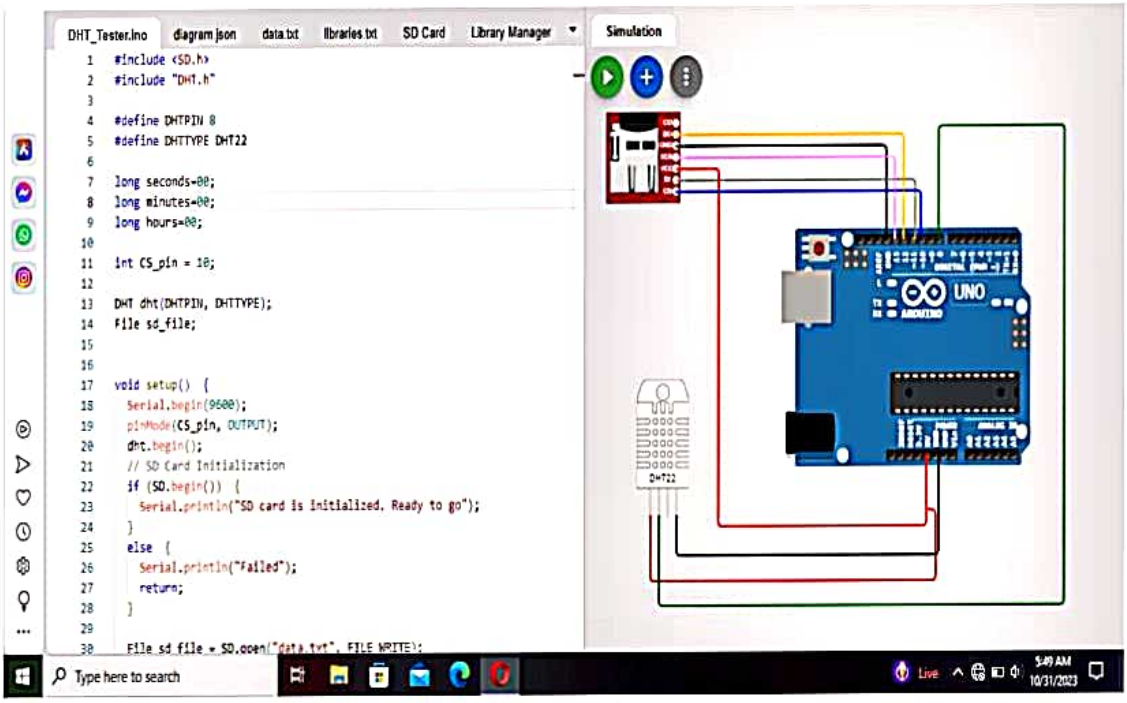
The following steps were performed to temperature andand humidity the DHT11 sensor module:

STEP 1 : The Vcc pin of the DHT11 sensor module was connected with the VU pin of NodeMCU.

STEP 2 : The Gnd pin of the DHT11 sensor module was connected with the Gnd pin of NodeMCU.

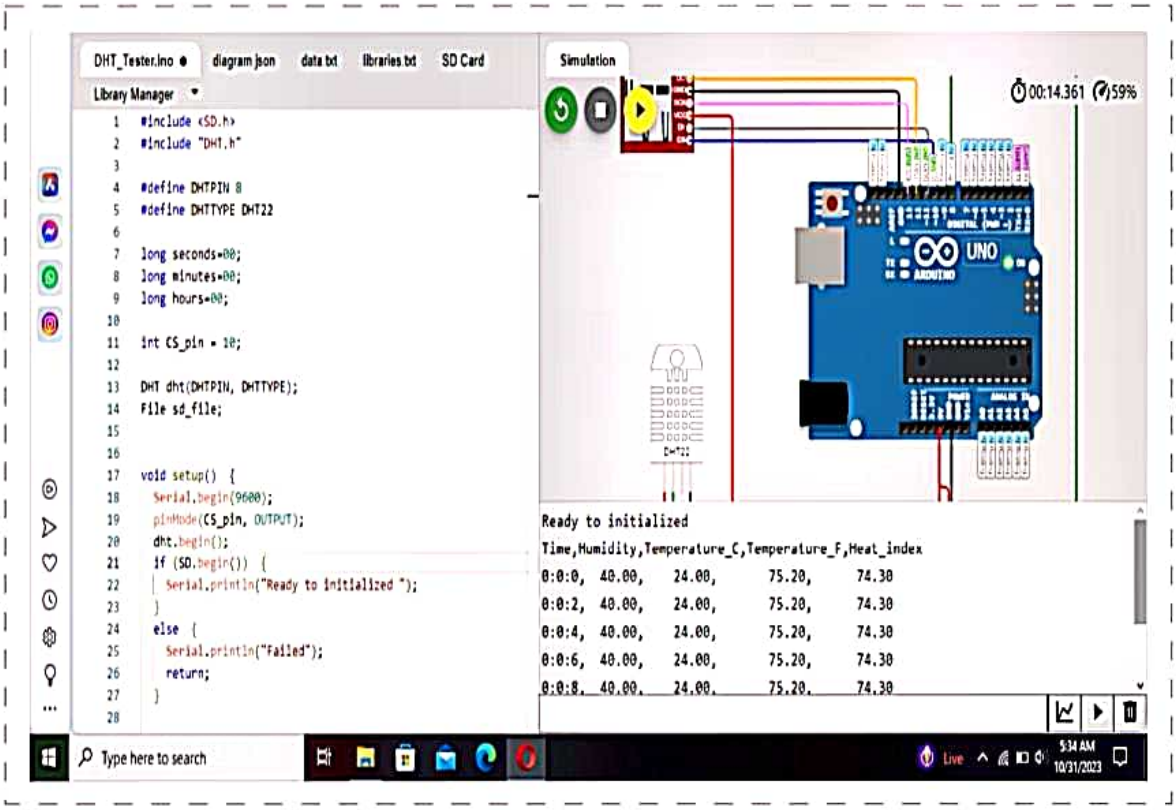
STEP 3 : The NodeMCU is powered with a 12V DC via AC-DC adapter for 20 minutes.

STEP 4 : The setup was then disconnected.



Circuit Diagram and code

The DHT11 measures the humidity and temperature: The relative humidity is measured by the electrical resistance between two electrodes. The humidity sensing component of the DHT11 is a moisture holding substrate (usually a salt or conductive plastic polymer) with the electrodes applied to the surface. The ions are released by the substrate as water vapor is absorbed by it, which in turn increases the conductivity between the electrodes. The change in resistance between the two electrodes is proportional to the relative humidity. The below figure shows the electrodes applied to a substrate on the front of the chip.



Observations for Experiment output

Conclusion:

We can observe from the results that the presence of smoke near the setup can be easily detected By the system. We have taken the reference from the Samsung mobile weather app for verifying The values. It matched with a +1.80 error with the temperature data, +4 error with the humidity Data and -0.7 error with the PPM data. Hence, it can be concluded that we can detect the Presence of smoke with the help of this monitoring system.