Humidity and Temperature Monitoring System

Project ID-A8
Group-19
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Description of the Project

Connections for this ThingSpeak Temperature and Humidity Monitoring Project are very simple.A Liquid Crystal Display is used for displaying Temperature and Humidity, which is directly connected to Arduino in 4-bit mode. Pins of LCD namely RS, EN, D4, D5, D6 and D7 are connected to Arduino digital pin number 14, 15, 16, 17, 18 and 19. This LCD is optional. DHT11 Sensor Module is connected to digital pin 12 of Arduino. Wi-Fi module ESP8266âĂŹs Vcc and GND pins are directly connected to 3.3V and GND of Arduino and CH PD is also connected with 3.3V. Tx and Rx pins of ESP8266 are directly connected to pin 2 and 3 of Arduino. Software Serial Library is also used here to allow serial communication on pin 2 and 3 of Arduino.

List of Components Used

1.Arduino Uno
2.Temperature Sensor
3.16 x 2 LCD
4.Breadboard
5.Potentiometer

Block Diagram of the Design

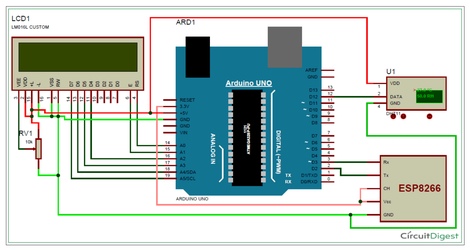
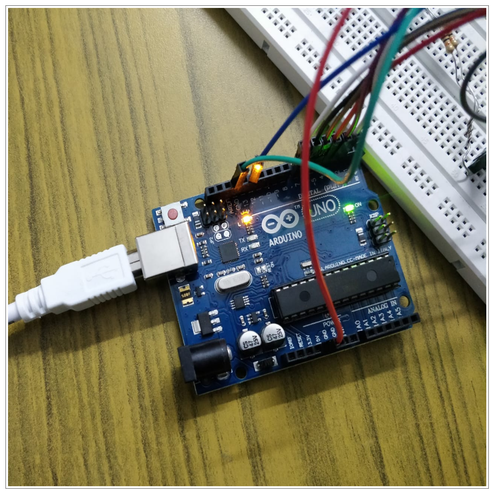
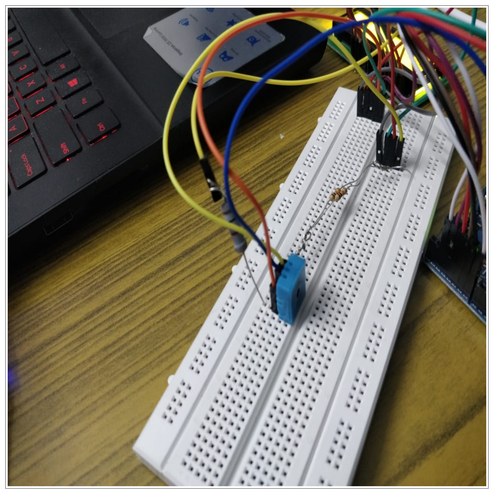
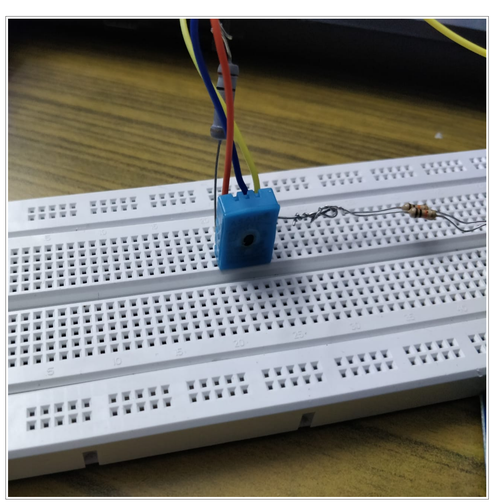
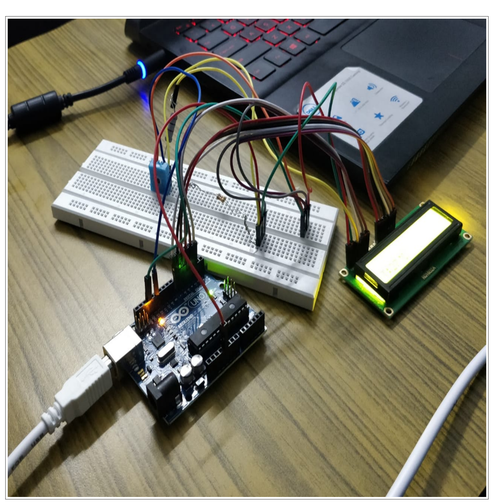


Figure 1:

Demo Video Link

A few Clear Close-view Photographs of the Developed System

Problems Faced

1.As soon as we compiled the code we got from circuit digest, we got an error mentioning that the dht.h file is not defined. So we had to search for that library and we got a similar library naming dht11.h .So we modified the files in that library so as to get it compatible with our project and then we included that library in the arduino code
2.The sensor had 4 pins which were not labelled. So at first we inserted it in a wrong orientation which resulted in the heating up of sensor and started melting.Then from a YouTube video we came to know exact labellings and we got it right
3.Only a particular section of LCD display was working. So we were not able to print the temperature and humidity simultaneously. As a solution we print temperature at once and then change the coordinates to print the humidity.

Conclusions (summary and your insight gained from your work of project design and implementation)

The project successfully measured the temperature and humidity of the surroundings.This also signifies the enormous utilities of the Arduino board.We learnt how to use the LCD display and more significantly the wirings related to the entire circuit using the bread board. We also learnt how to interact with the Arduino ide and get the code practically run on the hardware which is always exciting to watch.Overall it was fun to learn Arduino

List of Reference Materials or Weblinks Consulted

1.https://github.com/adidax/dht11
2.https://circuitdigest.com/microcontroller-projects/arduino-humidity-measurement
3.https://youtu.be/TdG0AJY4qLA