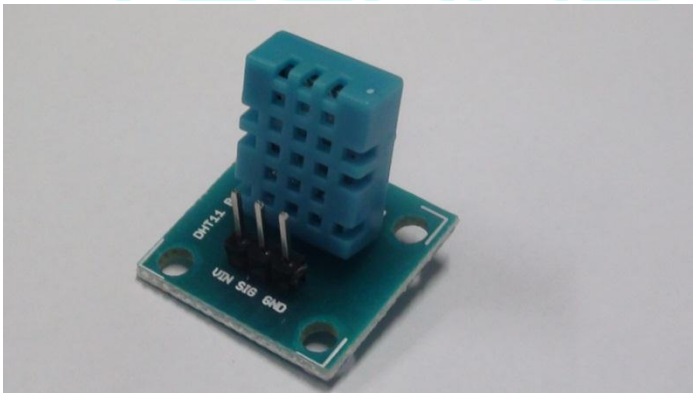
2015

Application Note on Interfacing Arduino with DHT11 Temperature and Humidity sensor



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Version1.0

Interfacing Arduino UNO with DHT11

Introduction

In this application note we will be discussing on interfacing DHT11 with Arduino UNO. Here we will be connecting the DHT11 output to measure both temperature as well as the humidity.

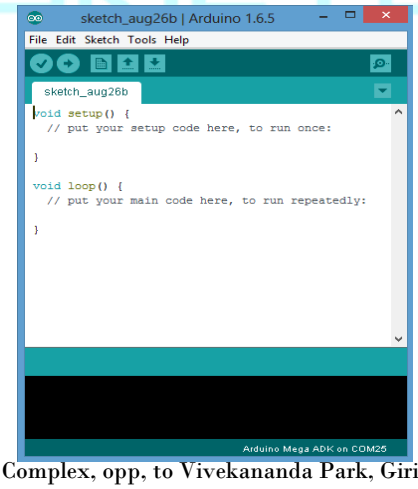
Arduino UNO: Arduino is an open-source prototyping platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. All this is defined by a set of instructions programmed through the Arduino Software (IDE).

DHT11: This DHT11 Temperature & Humidity Sensor breakout features a temperature & humidity sensor complex with a calibrated digital signal output. By using the exclusive digital-signal-acquisition technique and temperature & humidity sensing technology, it ensures high reliability and excellent long-term stability. This sensor includes a resistive-type humidity measurement component and an NTC temperature measurement component, and connects to a high performance 8-bit microcontroller, offering excellent quality, fast response, anti-interference ability and cost-effectiveness.

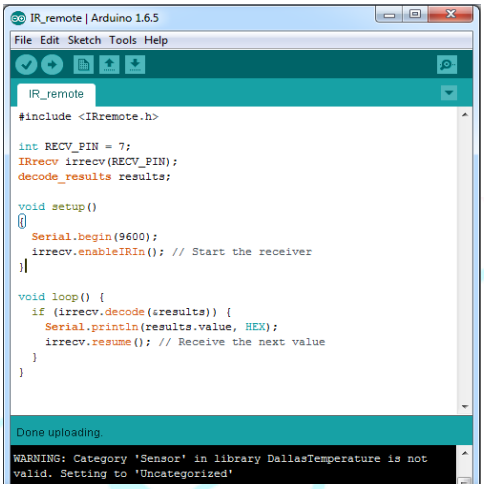
Step1. The Materials required are:

- Arduino UNO
- DHT11 breakout
- Male to Female Jumpers

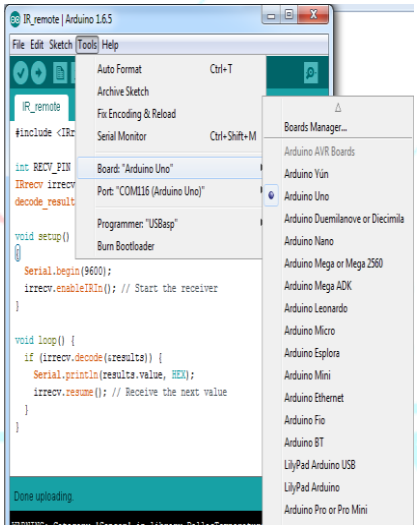
1. Open Arduino sketch on your PC or Laptop to start the programming.



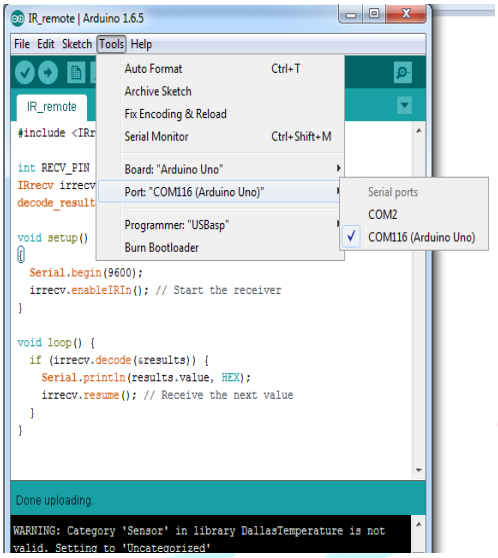
- Include the DHT11 library in the blank sketch.
- Include the DHT11 Library.



- Open the program in the Examples DHT11_test.
- Click on verify and check for any errors in the program. If no errors are present select the Arduino UNO in IDE. Go to tools> Board> Select Arduino UNO.

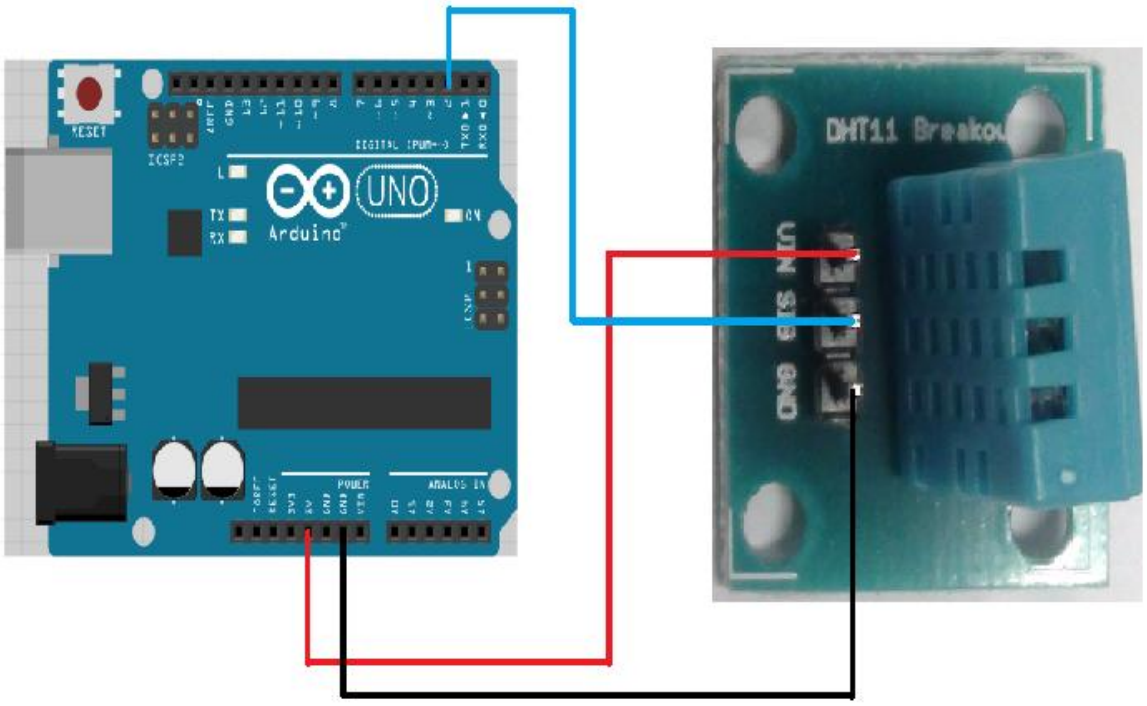


- Select port of programming by Tools> Port> Select the port for programming



- Now Upload the program to the arduino

Circuit Diagram:



CODE:

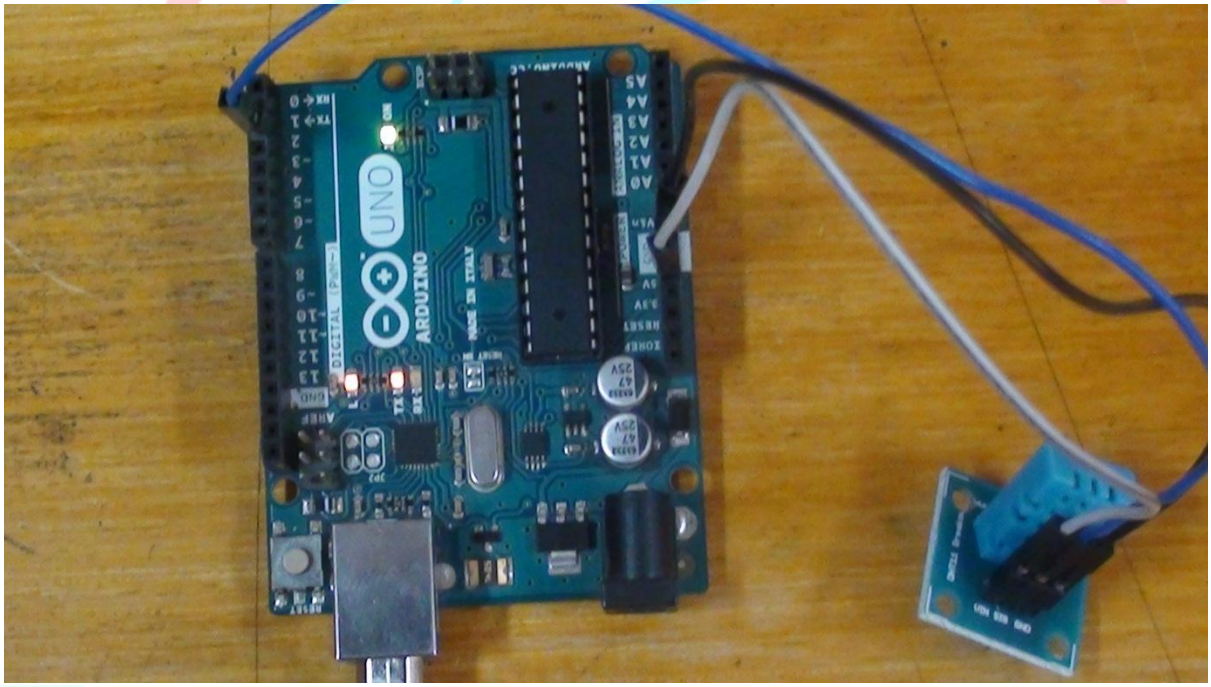
#include <DHT.h>

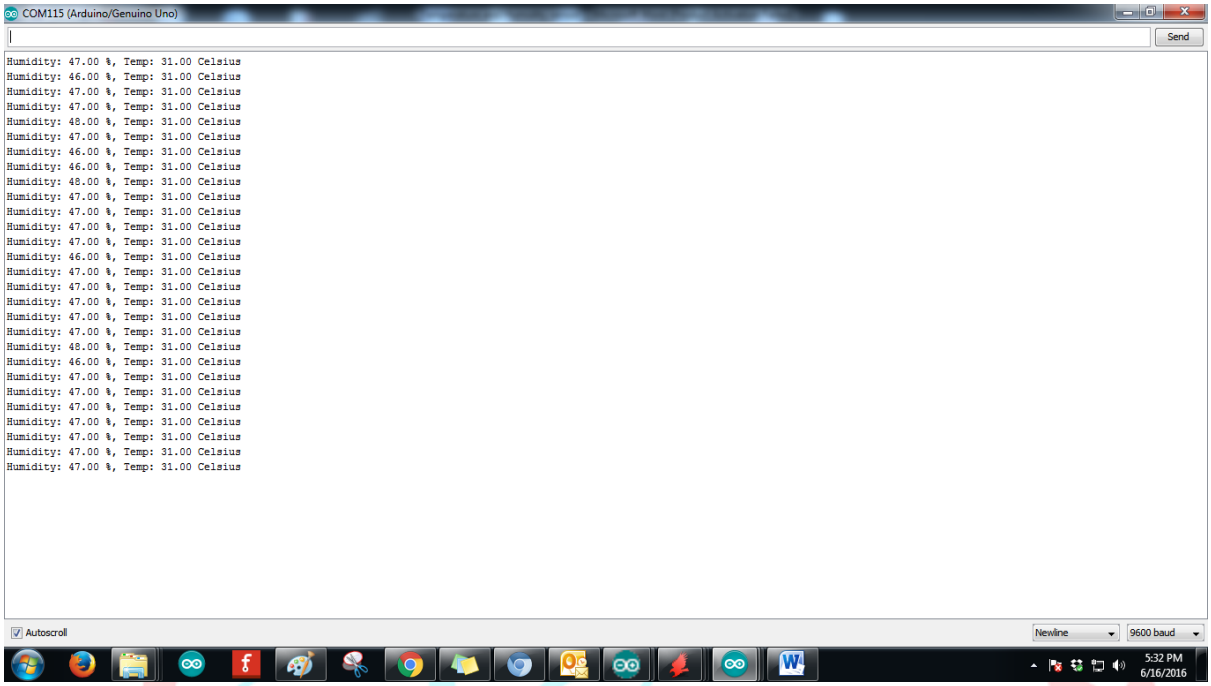
//Constants

```
#define DHTPIN 2     // what pin we're connected to
#define DHTTYPE DHT11   // DHT 11  (AM2302)
// Initialize DHT sensor for normal 16mhz Arduino
DHT dht(DHTPIN, DHTTYPE);

//Variables
int chk;
float hum;  //Stores humidity value
float temp; //Stores temperature value

void setup()
{
   Serial.begin(9600);
  dht.begin();

}

void loop()
{
   //Read data and store it to variables hum and temp
   hum = dht.readHumidity();
   temp= dht.readTemperature();
   //Print temp and humidity values to serial monitor
```

```
    Serial.print("Humidity: ");
    Serial.print(hum);
    Serial.print(" %, Temp: ");
    Serial.print(temp);
    Serial.println(" Celsius");
    delay(2000); //Delay 2 sec.
}
```

OUTPUT:





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For product info:

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