WiFi Weather Station with Arduino + ESP8266 + DHT22 or DHT11

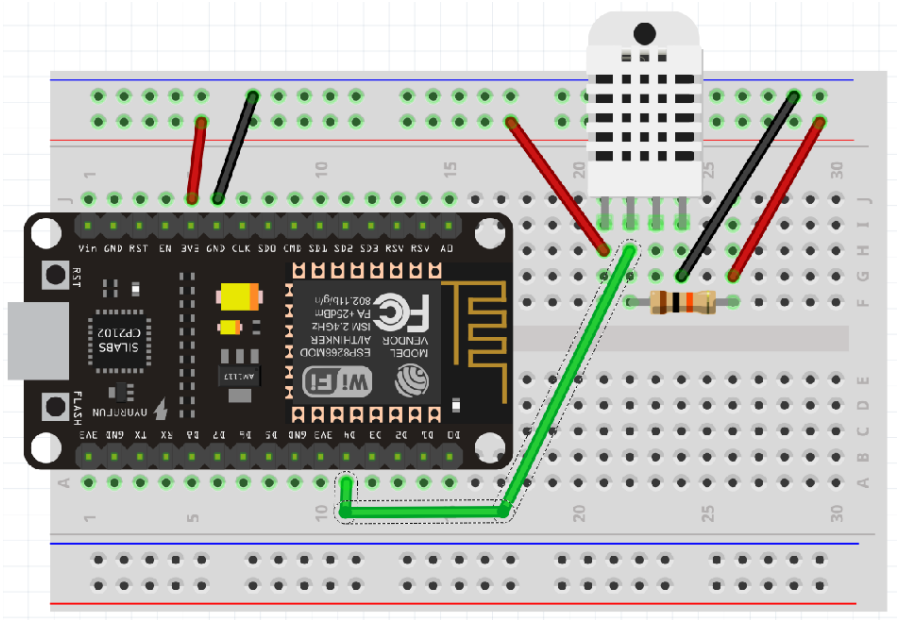
If you are new to the **ESP8266 WiFi Development Board** as used in this Tutorial, be sure to check out the basics in our **"Getting Started Manual with ESP8266 WiFi Development Board"** from the first Tutorial link or get it here http://drive.google.com/file/d/0B5RP5NsysFygc0hWVVIySXhWazg/view?usp=sharing

Wiring Connection

Parts needed for this project: (you can get the parts info from the links provided)

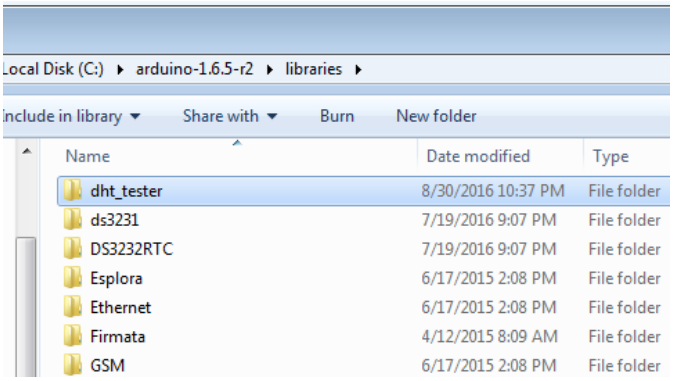
- ESP8266 WiFi Development Board - *http://www.bitstoc.com/index.php?route=product/product&product_id=172*
- DHT22 Temperature and Humidity Sensor – http://www.bitstoc.com/index.php?route=product/product&path=78&product_id=131
- DHT11 Temperature and Humidity Sensor – http://www.bitstoc.com/index.php?route=product/product&path=78&product_id=83
- Breadboard - *http://www.bitstoc.com/index.php?route=product/product&path=73&product_id=144*
- Connecting Wires - *http://www.bitstoc.com/index.php?route=product/product&path=73&product_id=63*
- 10k ohm resistor - *http://www.bitstoc.com/index.php?route=product/product&path=73&product_id=145*

Construct the circuit shown below.
The 3.3V and GND pins of the ESP8266 WiFi Dev board is connected to the Power and GND rails of the breadboard. The first pin of the DHT22 is connected to Power 3.3V, pin 2 of DHT22 is connected to (GPIO2) **D4**, also in pin 2 is a 10k ohm resistor and the other end is connected to 3.3V, pin 3 is open and pin 4 is connected to Ground rail.



Example Arduino Code

From the **Files** folder included in this manual, extract the folder "**dht_tester"** from the zip file "**dht_tester.zip"**. Now go to the folder location of your Arduino IDE. Go to **\arduino-1.6.5-r2\libraries** folder and paste the "**dht_tester"** folder here.



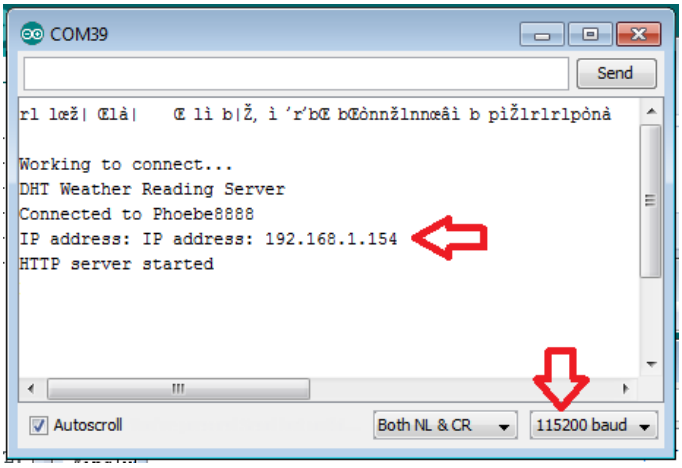
Now open the Arduino sketch **"WiFi_weatherstation.ino"** from the **WiFi_weatherstation** folder included in this manual. Before you Compile and Upload the code change the credentials of these lines below to your own **WiFi Name and Password**.

const char* ssid = "(your_wifi_name)";
const char* password = "(your_wifi_password)";

```
#define DHTTYPE DHT22
#define DHTPIN 2

const char* ssid = "BITSTOC_wifi";        // Change this to your WiFi Connection name
const char* password = "tellmewhy";       // Change this to your WiFi Connection password
```

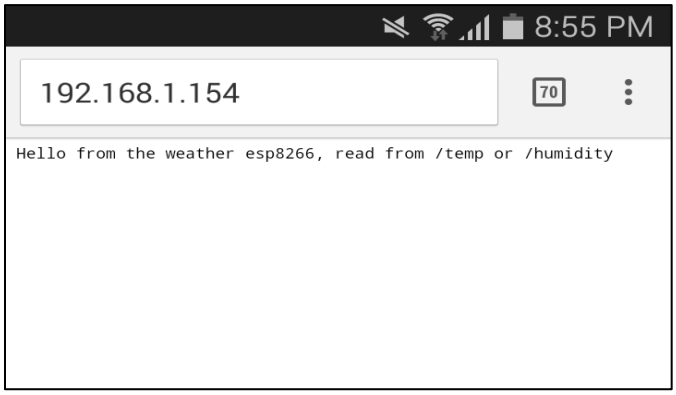
After setting up your WiFi name and password in the code, **Compile and Upload the code** to the board. Now open the **Serial Monitor** from the Arduino IDE by clicking the magnifying glass button at the upper right corner. When you open the Serial Monitor set the **baud to 115200.** Copy the IP Address shown in your Serial monitor in this case its **192.168.1.154**. You should see an output like the one below.



What you should see

Now we are going to view the temperature and humidity
Using your computer or mobile phone connected to the same WiFi network with your board, open your favorite web browser and go to the IP Address shown in your Serial Monitor.

You will have a result like this!!!



In order to get the temperature and humidity to be displayed, type in the keyword **/temp** or **/humidity** after the IP_Address.