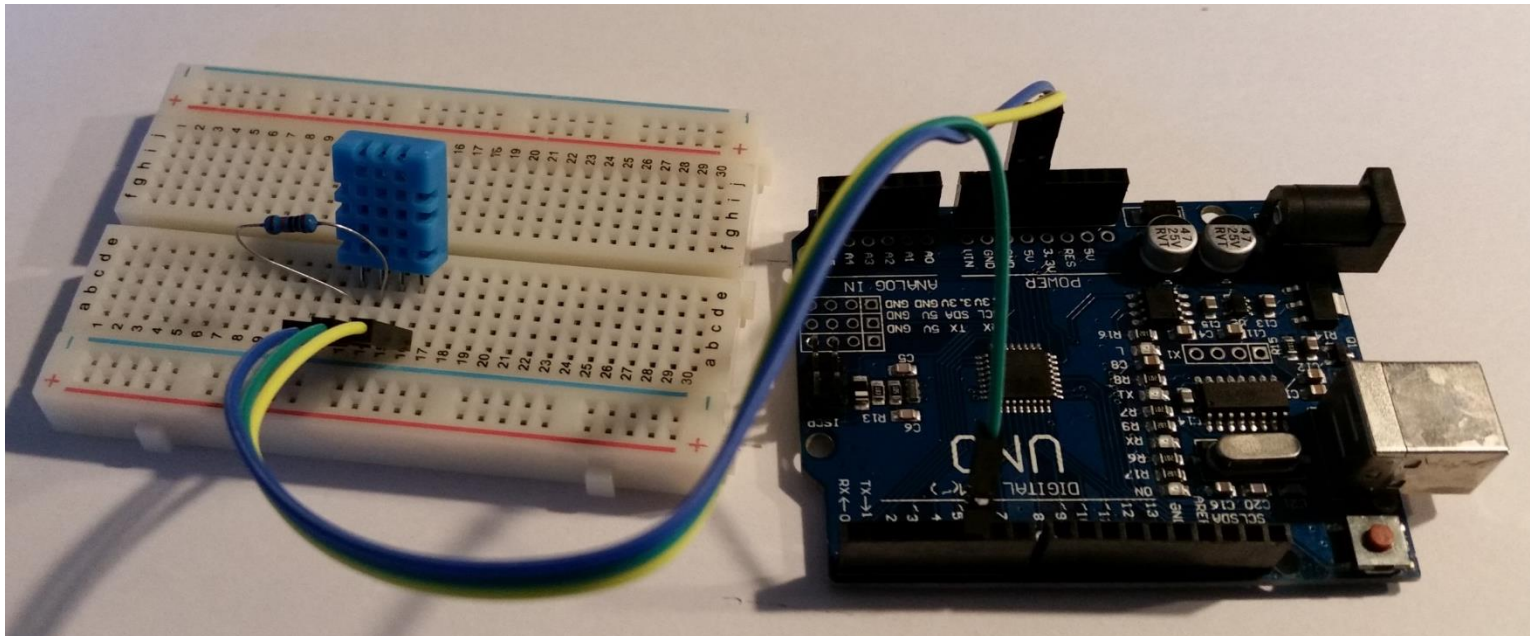


GoldSTEM_Lesson_16_Temperature_and_Humidity_to_Monitor_in_Fahrenheit

tm 3-23-2016

For this experiment we will be using the same setup as in Lesson 15



Let's load the same code as we did for lesson 15 and see if we can change it to read the temperature in Fahrenheit instead of Celsius.

Do we know how to convert the reading?

$$F = C \times 1.8 + 32$$

$$0C = 32F$$

$$100C = 212 F$$

Would you be able to derive this formula on your own?

Let's look at the code and see what needs to be changed?

We can do the calculations or we can just ask the HT11 to give us the temperature in F.

Modify the code and see what happens?
See the changes in RED on two lines
Not bad?

Load the Code

GoldSTEM_Lesson_15_Temperature_and_Humidity_to_Monitor_in_Celsius

```
// GoldSTEM_Lesson_15_Temperature_and_Humidity_to_Monitor_in_Celsius GoldSTEM tm 3-15-2016
```

```
#include "DHT.h" // Include a separate program that interfaces to the DHT Temperature sensors.
```

```
#define DHTPIN 5 // Connect pin 2 data to UNO pin 5
```

```
#define DHTTYPE DHT11 // Tell the include program we are using the DHT11
```

```
DHT dht(DHTPIN, DHTTYPE); // Initialize chip
```

```
void setup() {
```

```
  Serial.begin(9600); // Set Serial port to 9600
```

```
  dht.begin(); // Start DHT
```

```
}
```

```
void loop() {
```

```
  // Wait a few seconds between measurements.
```

```
  delay(2000); // Wait 2 seconds between measurements
```

```
  float h = dht.readHumidity(); //Read Humidity using DHT Include File
```

```
  float t = dht.readTemperature(true); //Read Temperature in Fahrenheit
```

```
  // Check for valid reading
```

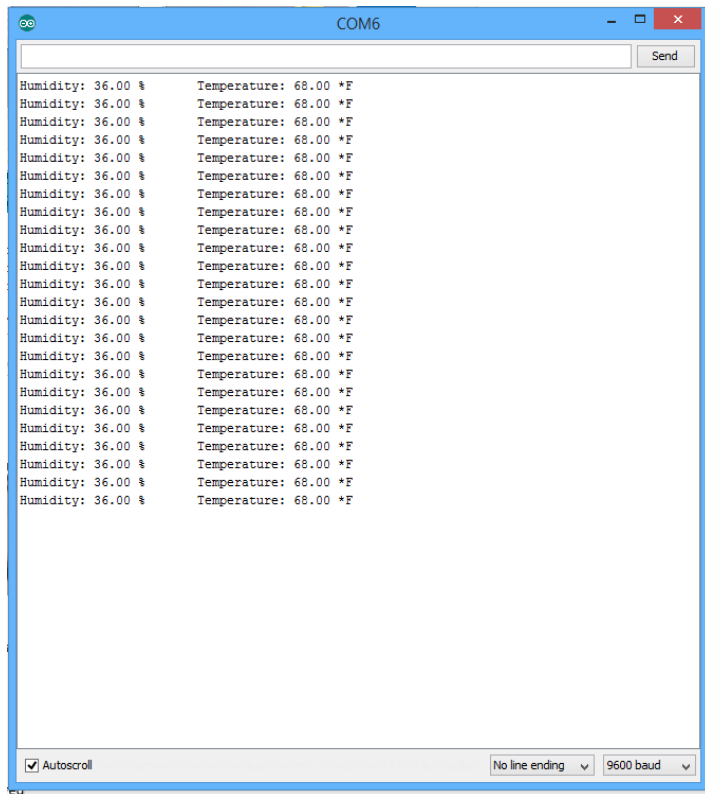
```
  if (isnan(h) || isnan(t)) {
```

```
    Serial.println("Failed to read from DHT sensor!");  
    return;  
}  
  
Serial.print("Humidity: ");  
Serial.print(h);  
Serial.print(" %\t");  
Serial.print("Temperature: ");  
Serial.print(t);  
Serial.println(" *F "); //Print C and create a new line.  
  
}
```

Output to monitor

To see the Monitor output click on the Serial Monitor Icon, on the Sketch page it looks like a magnifying glass on the right side of the page.

This is what you should see.



Ok is it working?

If not load this code and see if you can figure out what went wrong.

GoldSTEM_Lesson_16_Temperature_and_Humidity_to_Monitor_in_Fahrenheit

End of Lesson

