Raspberry Pi 3 Tutorial 12 – GPIO DHT11 Digital Temperature + Humidity Sensor

invent.module143.com/daskal_tutorial/raspberry-pi-3-gpio-dht11-digital-temperature-humidity-sensor/

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Difficulty level: Beginner

Approx reading time:

Components Required:

1. Raspberry Pi 3 model B

2. MicroSD card 8 or 16 GB (Class 4 and above) with Raspbian

3. Windows PC / Linux PC (Tested on Windows 10, Ubuntu 14.04 LTS)

4. Ethernet cable (Category 5 – also called Cat 5)

5. Micro USB cable

6. Breadboard

7. DHT11 Sensor

8. Jumper Wires (Male to Female, Male to Male)

Way to go ->

1. Login to your Pi using PuTTy or your Ubuntu terminal.

2. Login to your Pi GUI using VNC server (Linux / Windows).

3. In **Python 3 (IDLE)**, create a new file.

4. The name could be: **DHT11Read.py**.

5. In the file **DHT11Read.py**, write the following code with comments (line starting with **"#"**) for clear understanding and save (press **Cntrl + S** on your PC keyboard) the file.

```
import Adafruit_DHT


while True:
    humidity, temperature = Adafruit_DHT.read_retry(11, 27)  # GPIO27 (BCM notation)
    print ("Humidity = {} %; Temperature = {} C".format(humidity, temperature))
```

Before running the python script do the following:

6. In the terminal type:

```
sudo apt-get install git-core
```

7. Download the Adafruit DHT11 library. In the terminal type:

```
git clone https://github.com/adafruit/Adafruit_Python_DHT.git
```

8. Navigate to to Adafruit_Python_DHT directory (folder), in the terminal type:

```
cd Adafruit_Python_DHT
```

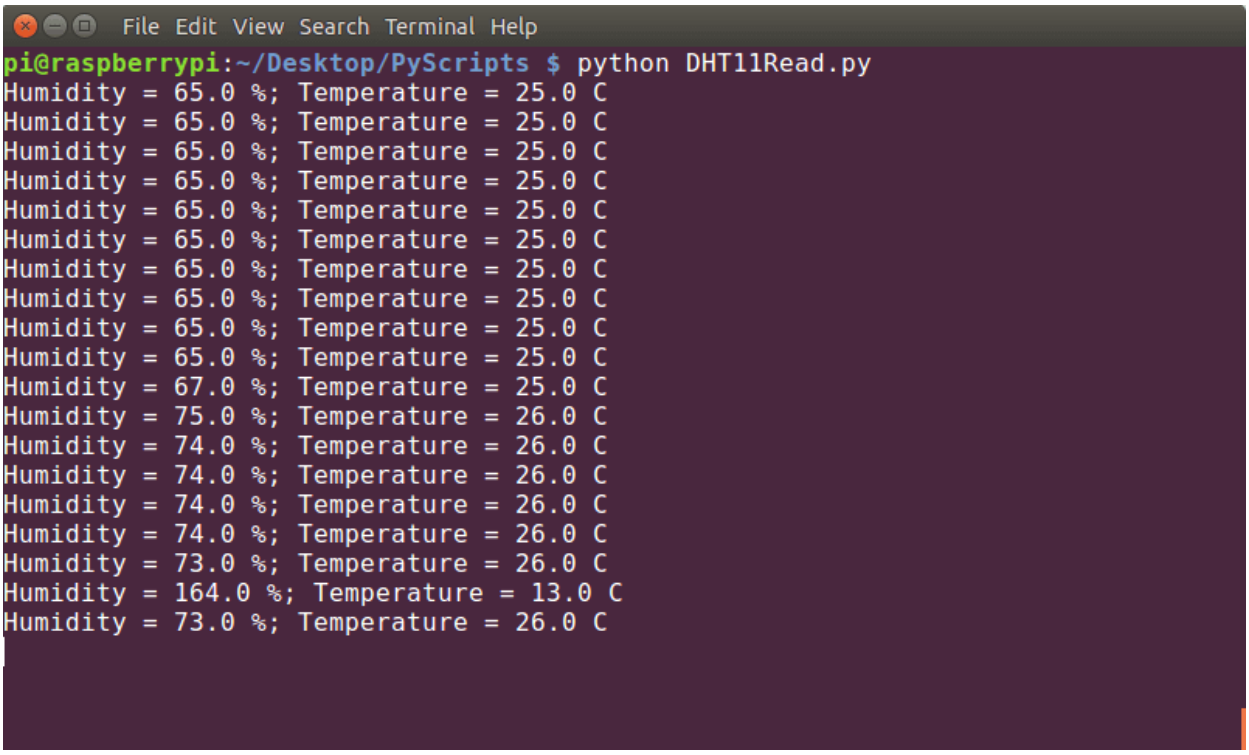
9. Run the following commands in the terminal.

```
sudo apt-get install build-essential python-dev  # python2

sudo apt-get install build-essential python3-dev  # python3
```

10. To install the library, in the terminal type:

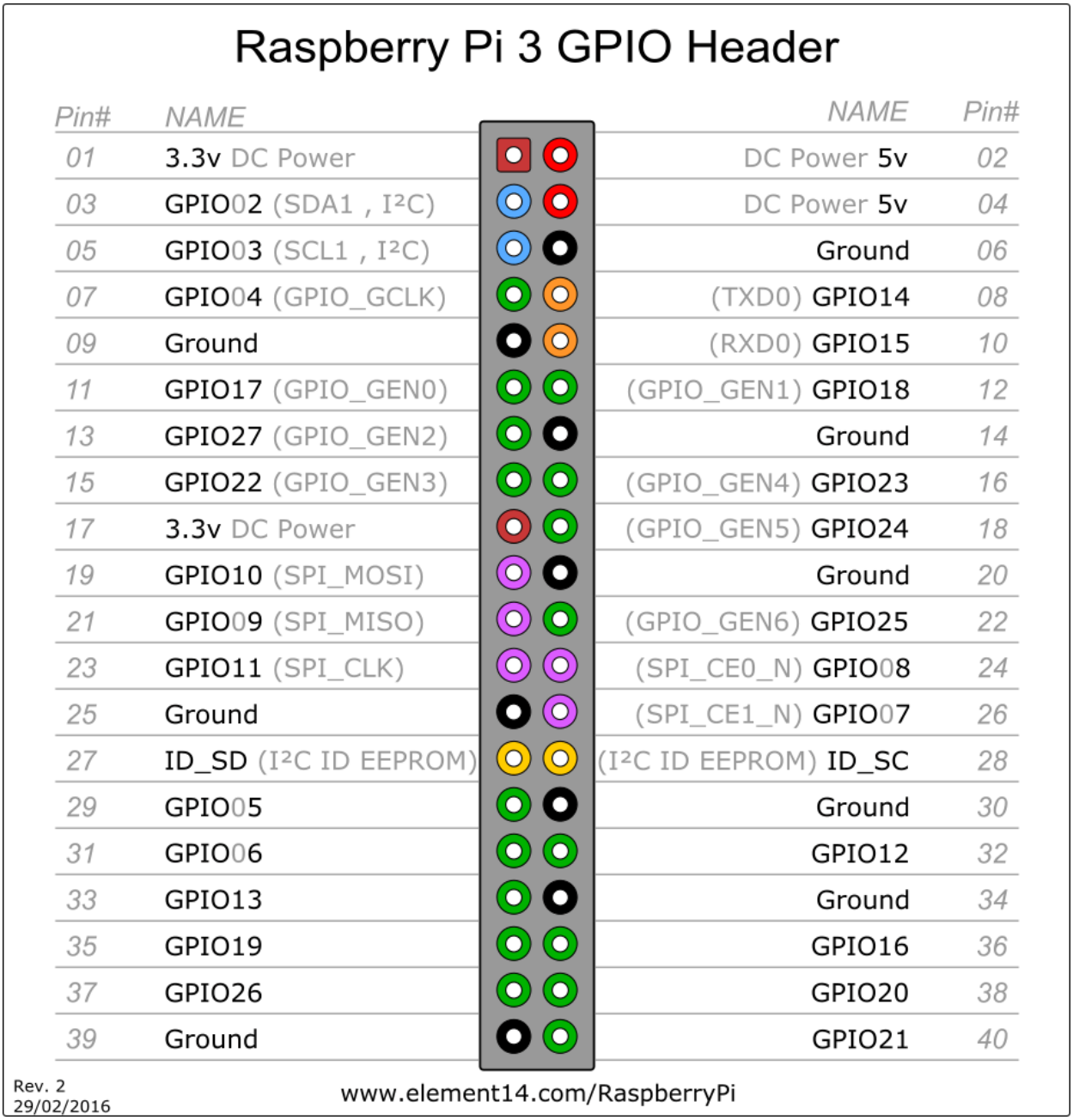
```
sudo python setup.py install  # python2

sudo python3 setup.py install  # python3
```

11. Finally, run the script by clicking on **Run -> Run Module** in the menu bar or by pressing **F5** on your PC keyboard.



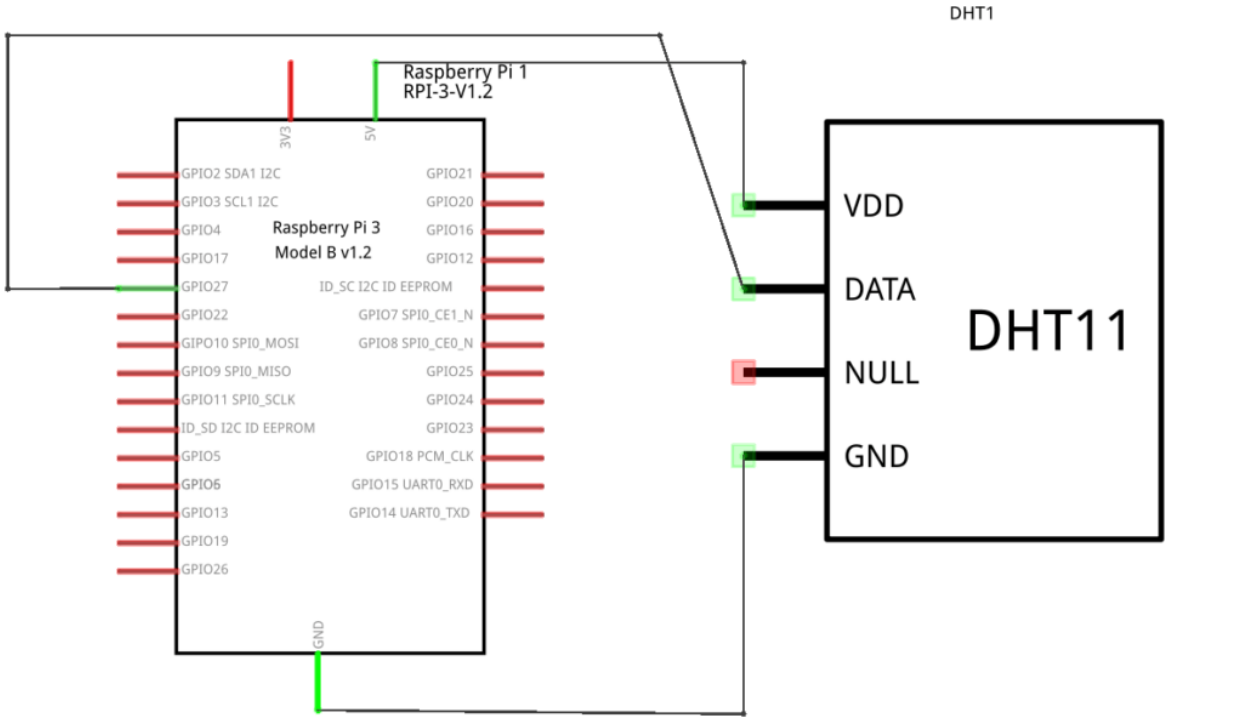
Hardware Connections ->

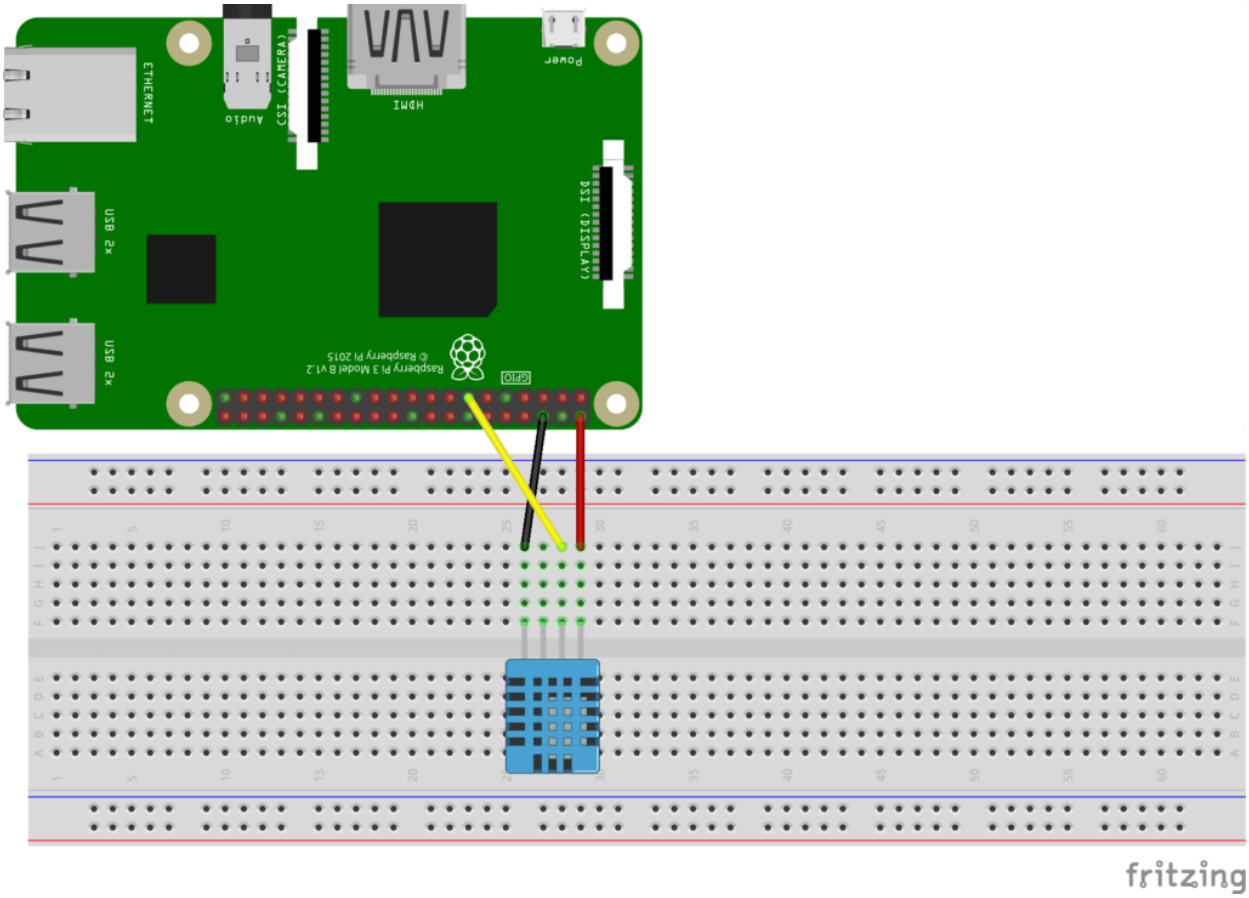
1. Raspberry Pi 3 GPIO Header.



2. DHT11 to Pi connections.

DHT11	Pi
Vcc	5v
Output	GPIO27 (Pin 13)
GND	Ground





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