

Alarm system to high  
Temperature Assignment-2

By,

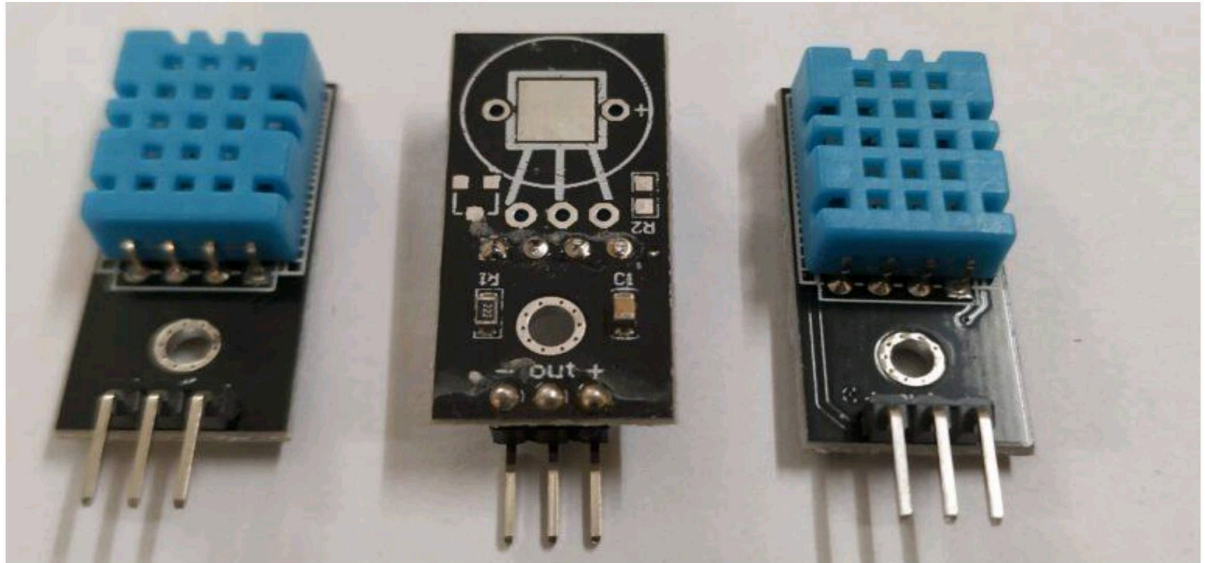
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# **BUILD A PYTHON CODE, ASSUME U GET TEMPERATURE AND HUMIDITY VALUE AND WRITE A CONDITION TO CONTINUOUSLY DETECT ALARM IN CASE OF HIGH TEMPERATURE:**

This article, we'll discuss interacting DHT11 with Raspberry Pi and see it working using Python code. Also, we'll display real-time Data on the 16×2 LCD. The code and explanation used in the code will be explained further below also all the modules regarding 16×2 LCD will be included with its article home page. So let's begin.

# DHT-11



- It is the most common and famous temperature and humidity combined sensor you'll ever come to know. It has many tutorials with boards similar to Arduino.
- You may visit [It's Arduino Tutorial](#) to have a more clear Idea of Its working if you are

working so, here we are giving you the tutorial on how to connect dht11 with Raspberry Pi.

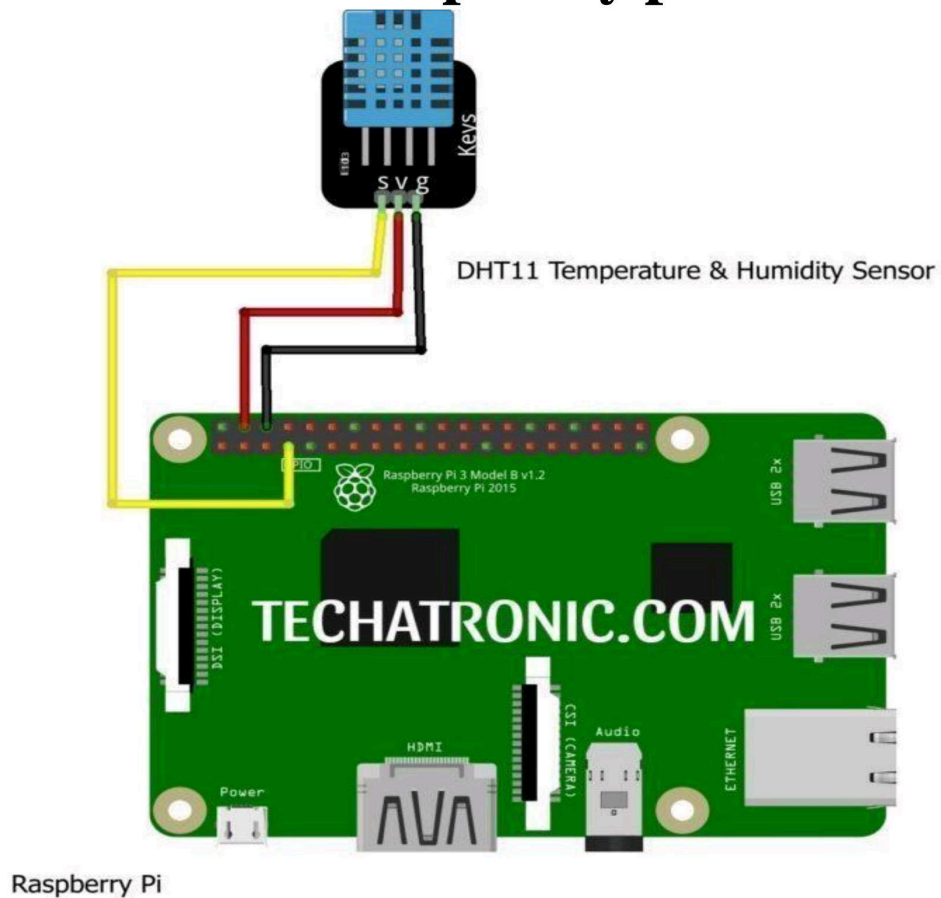
- DHT11 is a simple sensor and has a very simple structure for measuring temperature and humidity. Basically, it is an enclosed structure that consists of two wires which are responsible for checking humidity and temperature.

## **Material Requirement**



- Raspberry Pi with keyboard and mouse.  
Or putty terminal.
- Breadboard
- Jumper wires
- DHT11 Sensor

# DHT11 with Raspberry pi Circuit Diagram



```
Import Adafruit_DHT
DHT11=Adafruit_DHT.DHT11 #
Adafruit_DHT.DHT22 for DHT22 sensor.
```

While True:

Try:

```
Temp,humid=Adafruit_DHT.read_retry(DHT  
11,4) # 4 is the GPIO number you can change  
this to your required need
```

```
Print("TEMP={0:0.1f}°C  
HUMIDITY={1:0.1f}%".format(temp,h  
umid)) Except KeyboardInterrupt:
```

```
Break
```

- The first line as we have said we have imported the library for the DHT11 Sensor to work i.e., Adafruit\_DHT. You can use this library with DHT22 also, but you need to change the DHT11 object

line.

- Then we create a DHT object which store the DHT11 sensor configuration details and further in code we use this object name to refer to all working statements.
- Next we create an infinite while loop within Try and except method to create a keyboard interrupt terminating condition i.e., Ctrl+C
- In next line we read data from the DHT11 sensor and stores it in two variable as two



values are being received, one for temperature and other for humidity.

## **CODING:**

```
#!/usr/bin/python
import struct, array, time, io,
fcntl

I2C_SLAVE=0x0703

# find with  sudo i2cdetect -y 1

HDC1008_ADDR = 0x40

                                                    bus=1
fr = io.open("/dev/i2c-
            "+str(bus), "rb", buffering=0)
fw = io.open("/dev/i2c-
            "+str(bus), "wb", buffering=0)

# set device address
fcntl.ioctl(fr, I2C_SLAVE,
            HDC1008_ADDR)
```

```

fcntl.ioctl(fw, I2C_SLAVE,
            HDC1008_ADDR)
time.sleep(0.015) #15ms startup
time
            s = [0x02,0x02,0x00]
s2 = bytearray( s )
fw.write( s2 ) #sending config
            register bytes
time.sleep(0.015)
            # From the data sheet

            s = [0x00] # temp
s2 = bytearray( s )
fw.write( s2 )
time.sleep(0.0625)
            # From the data sheet

            data = fr.read(2) #read 2 byte
                                temperature data
buf = array.array('B', data)
print ( "Temp: %f" % (
    (((buf[0]<<8) +
    (buf[1]))/65536.0)*165.0 ) -
    40.0 ) )

time.sleep(0.015)
            # From the data sheet

            s = [0x01] # hum

```

```

s2 = bytearray( s )
fw.write( s2 )
time.sleep(0.0625)
    # From the data sheet

        data = fr.read(2) #read 2 byte
                           temperature data
buf = array.array('B', data)
print ( "Humidity: %f" % (
    (((buf[0]<<8) +
    (buf[1]))/65536.0)*100.0 ) ) )

```