Alarm system to high Tenmperature

Assignment 2.

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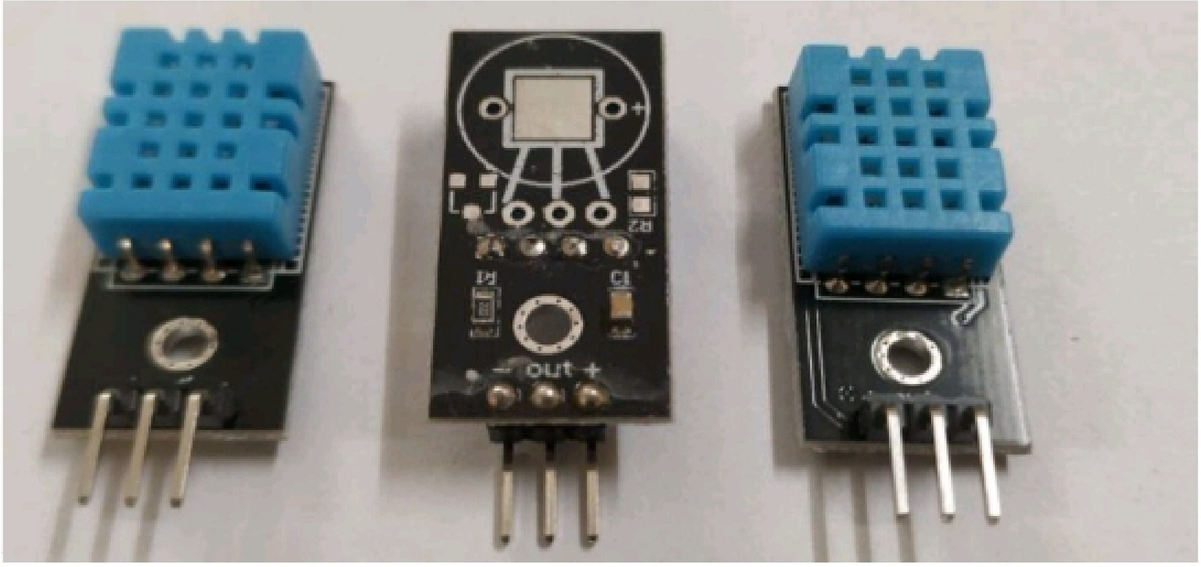
BUILD A PYTHON CODE,ASSUME U GET TEMPERATURE AND HUMIDITY VALUE AND WRITE A CONDITION TO CONTINUOUSLY DETECT ALARM IN CASE OF HIGH TEMPERATURE:

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

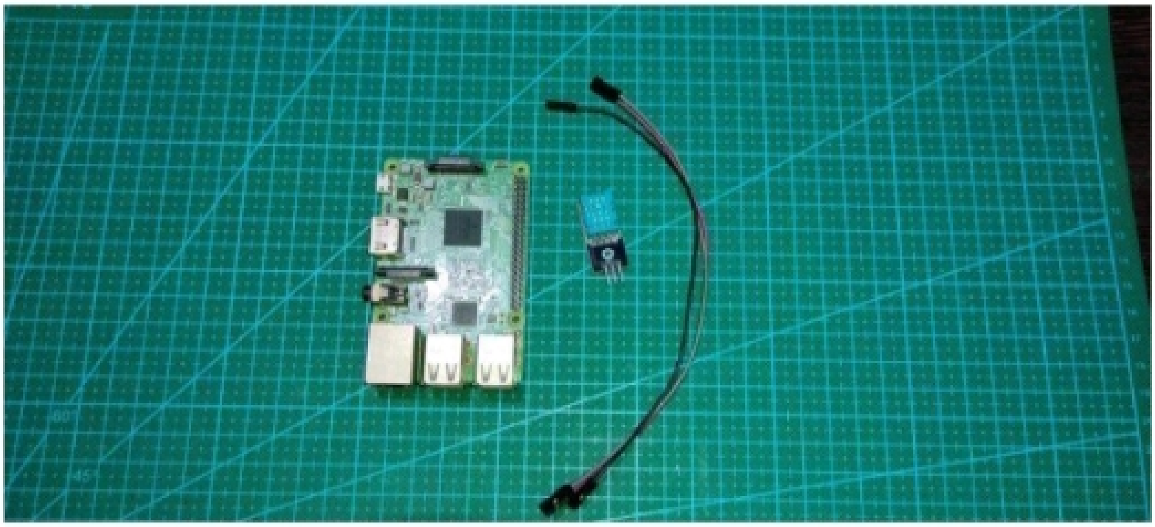


- It is the most common and famous temperature and humidity combined sensor you'll ever come to know. It has many tutorials with boards similar to Arduino.

- You may visit It’s Arduino Tutorial to have a more clear Idea of Its working if you are

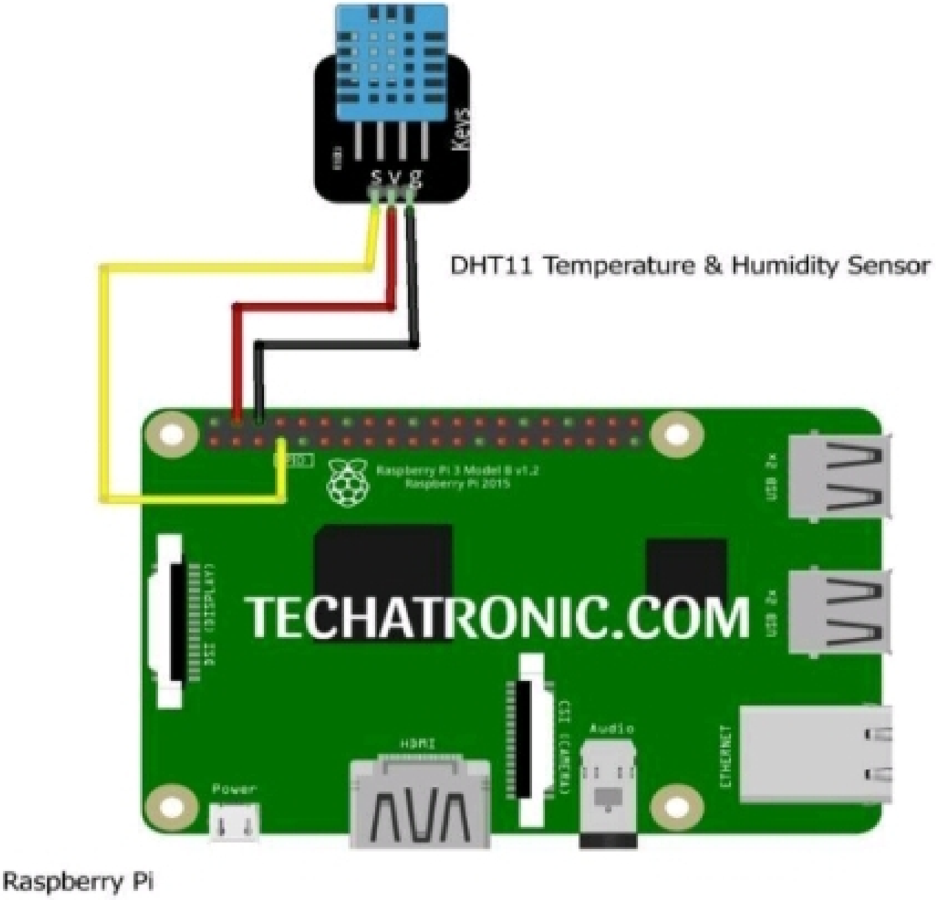
  working so, here we are giving you thetutorial on how to connect dht11 with Raspberry Pi.
- DHT11 is a simple sensor and has a very simple structure for measuring temperature and humidity. Basically, it is an enclosed structure that consists of two wires which are responsible for checking humidity and 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 ithe 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 ) ) )
```