Alarm system to high Tenmperature

Assignment 2.

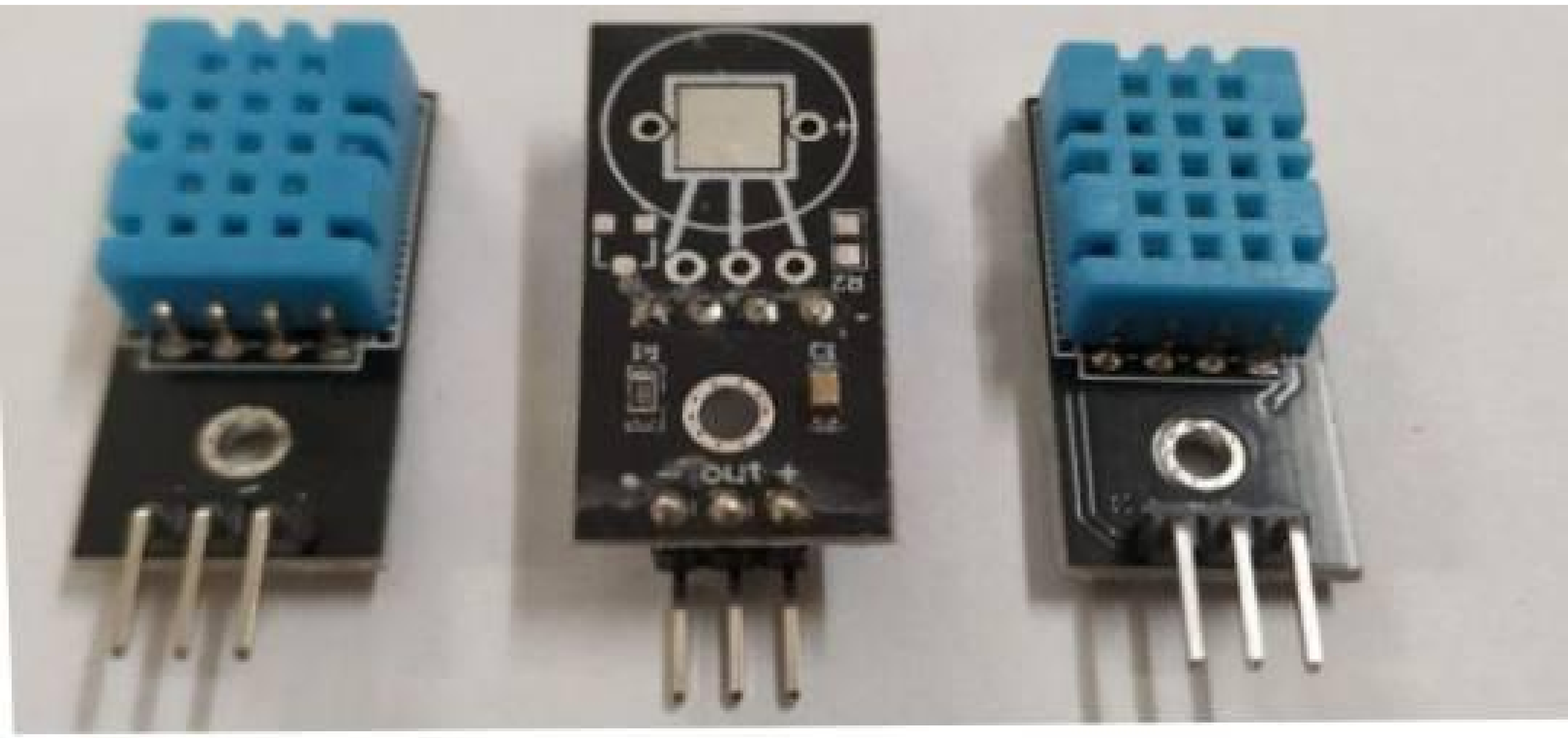
by,

I.Arthi

952319106002

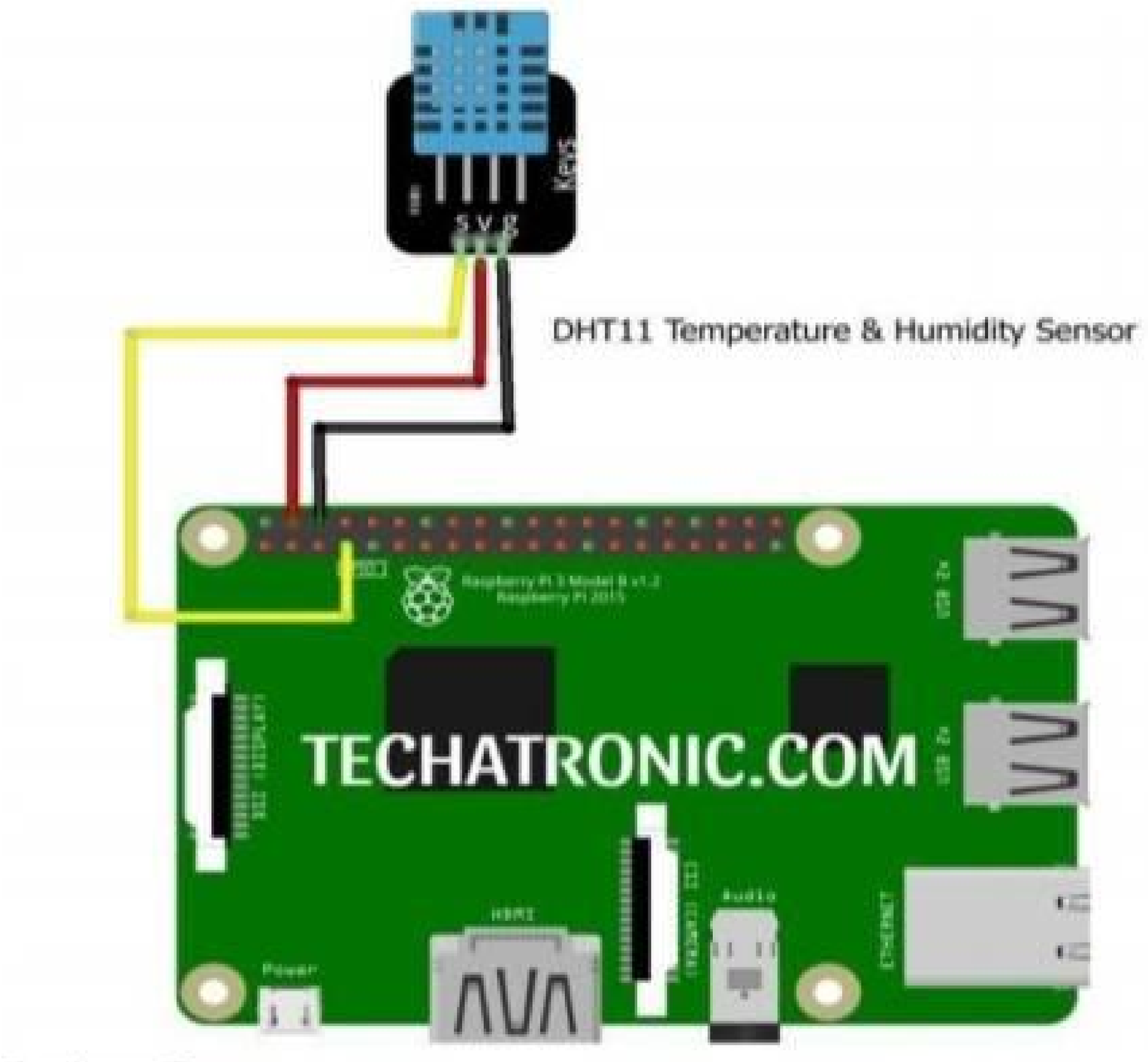
BUILD A PYTHON CODE,ASSUME U GET TEMPERATURE AND HUMIDITY VALUE AND WRITE A CONDITION TO CONTINUOUSLY DETECT ALARM IN CASE OF HIGH TEMPERATURE:

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.



- 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.

DHT11 with Raspberry pi Circuit Diagram



Raspberry Pi

```
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 ) ) )
```