

PRACTICAL 9

AIM: Using Raspberry pi with DHT sensor to sense temperature and send data to a server URL.

Parts Required:

- 1 x Raspberry Pi
- 1 x DHT sensor
- 1 x 100 Ohm resistors
- Breadboard wires
- 1 x Breadboard (project board)
- 1 x Raspberry Pi power supply

Circuit Diagram:

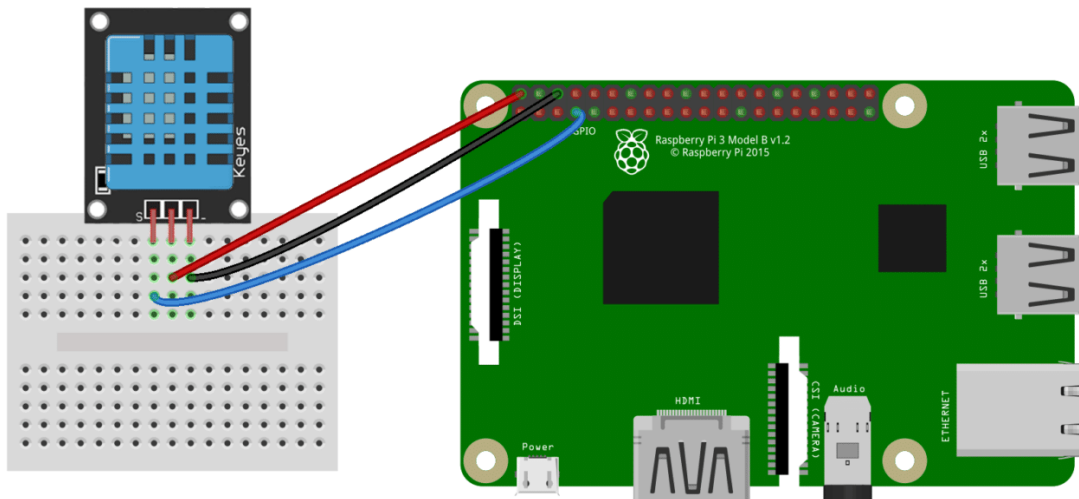


Figure 9.1: Circuit Diagram for interfacing DHT sensor with Raspberry Pi

Code:

```
import sys
import requests
import urllib
#import threading
from time import sleep
import Adafruit_DHT as dht
# Enter Your API key here
myAPI = 'VE1DQP8O6XVX4O55'
# URL where we will send the data, Don't change it
baseURL = 'https://api.thingspeak.com/update?api_key=%s' % myAPI
def DHT11_data():
    # Reading from DHT11 and storing the temperature and humidity
    humi, temp = dht.read_retry(dht.DHT11, 23)
    return humi, temp
while True:
    try:
        humi, temp = DHT11_data()
```

```

# If Reading is valid
if isinstance(humi, float) and isinstance(temp, float):
    # Formatting to two decimal places
    humi = '%.2f' % humi
    temp = '%.2f' % temp
    print('humidity:%s'%humi,'temperature:%s'%temp)
    # Sending the data to thingspeak
    conn = urllib.request.urlopen(baseUrl + '&field1=%s&field2=%s' % (temp, humi))
    conn.read()
    # Closing the connection
    conn.close()
else:
    print('Error')
# DHT22 requires 2 seconds to give a reading, so make sure to add delay of above 2 seconds.
sleep(2)
except:
    break

```

Implementation

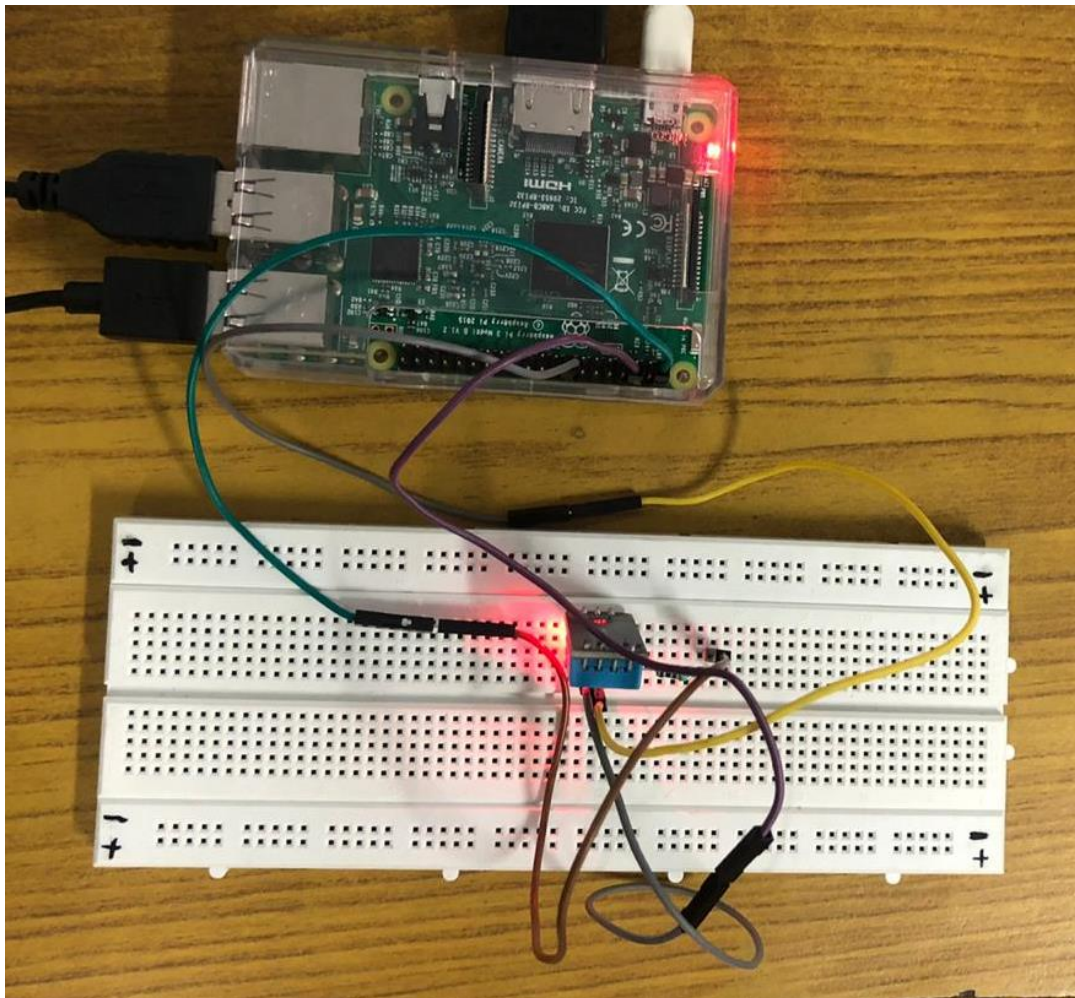


Figure 9.2: Breadboard with DHT Sensor

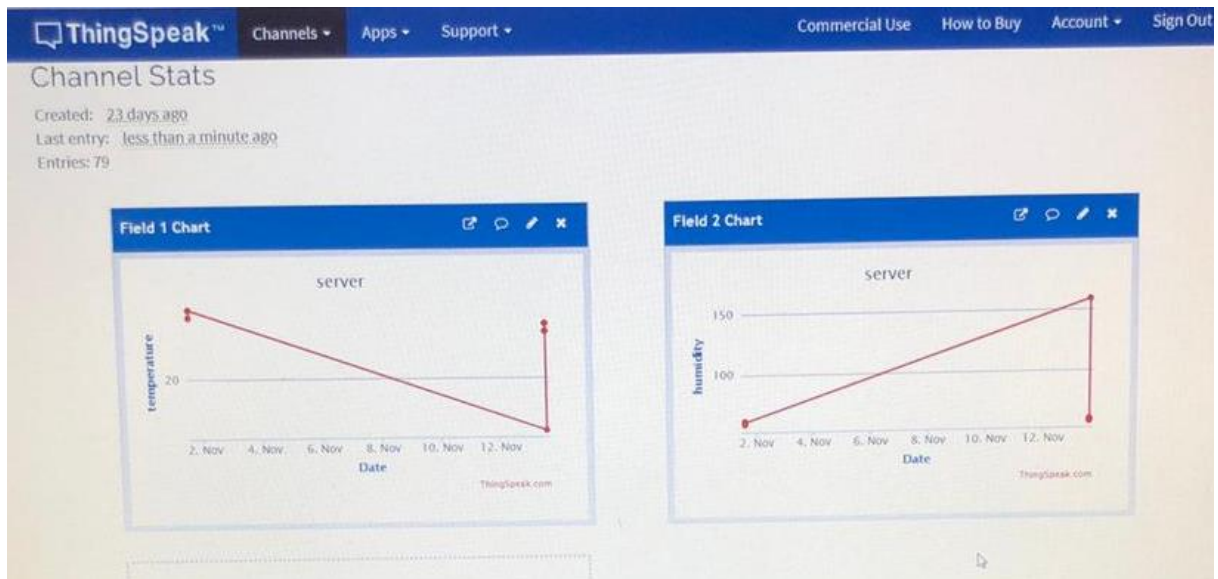


Figure 9.3: Plotted Data on the Server