

# HUMIDITY READINGS USING RASBERRY Pi 3, DHT22 SENSOR and PYTHON PROGRAMMING

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Using some simple Python code and a Raspberry Pi, the DHT22 will allow real-time humidity readings to be read to the Pi, with reasonable accuracy. The Raspberry Pi DHT22 sensor makes for an affordable, easy-to-use, and reliable sensor due to its simple 4-pin wiring and greater accuracy.

## Components Required

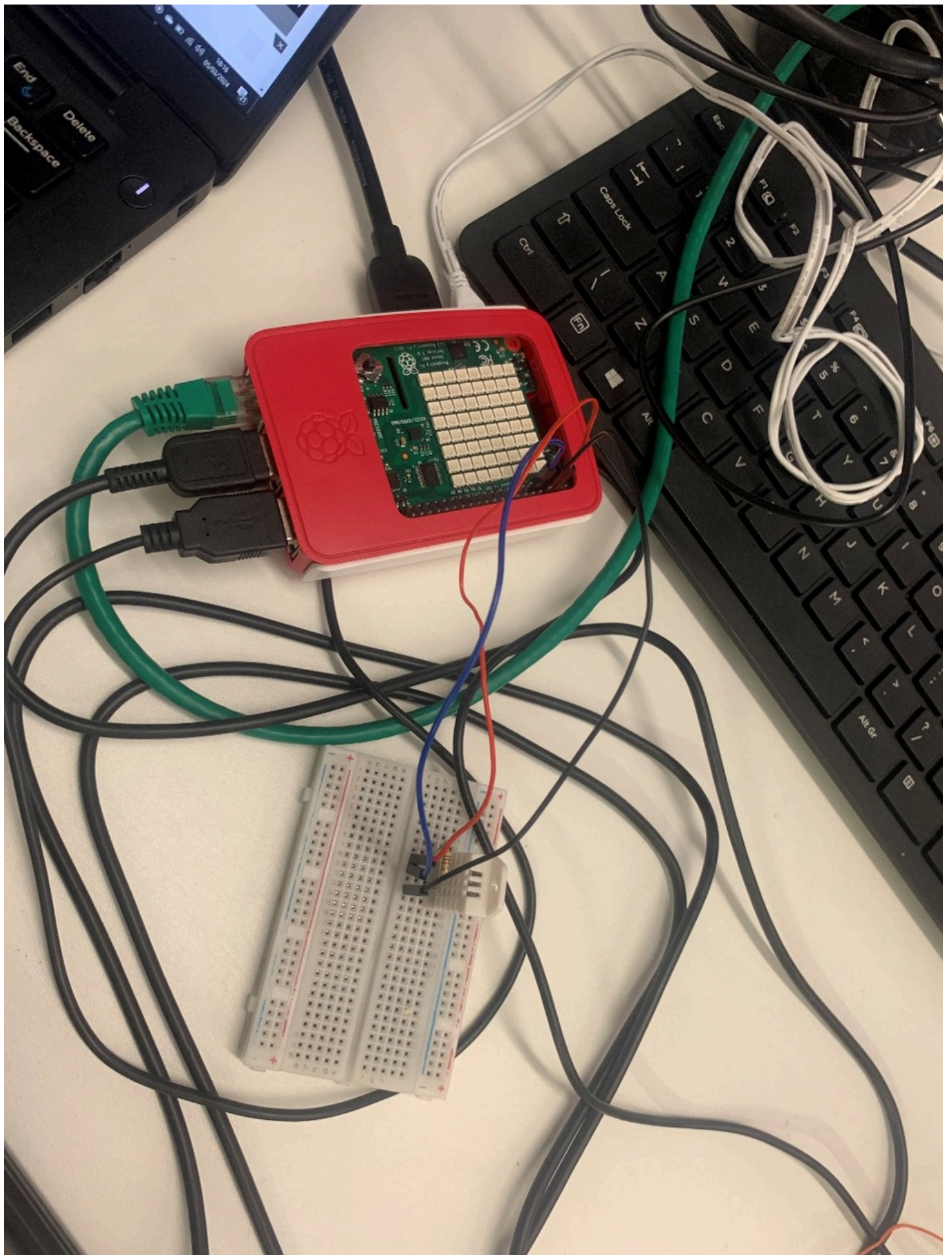
- Raspberry Pi 3
- Breadboard
- Male-Female Jumper Wires (3)
- DHT22 Temperature & Humidity Sensor
- 10K $\Omega$  resistor

## DHT22 Raspberry Pi Connection

In the diagram below, a 10K $\Omega$  pull-up resistor is added between the VCC and data pin of the DHT22 sensor. This resistor is needed to sustain a HIGH signal to the microcontroller (Raspberry Pi) and maintain constant communication between the sensor and the Pi.

- I connected VCC (Pin 1) to 5v (Pin 04) on my Raspberry Pi 3,
- the Data pin (Pin 2) to GPIO04 (Pin 07)
- and GND (Pin 4) to GND (Pin 06) on the Raspberry Pi
- I connected a 10K $\Omega$  resistor between the VCC (Pin 1) and Data pin (Pin 2) on the DHT22 sensor.

**![Picture 1. The raspberry pi 3 and other nodes connection]**



\*Figure 1

The Thorny Snapshots containing the Python Code below:

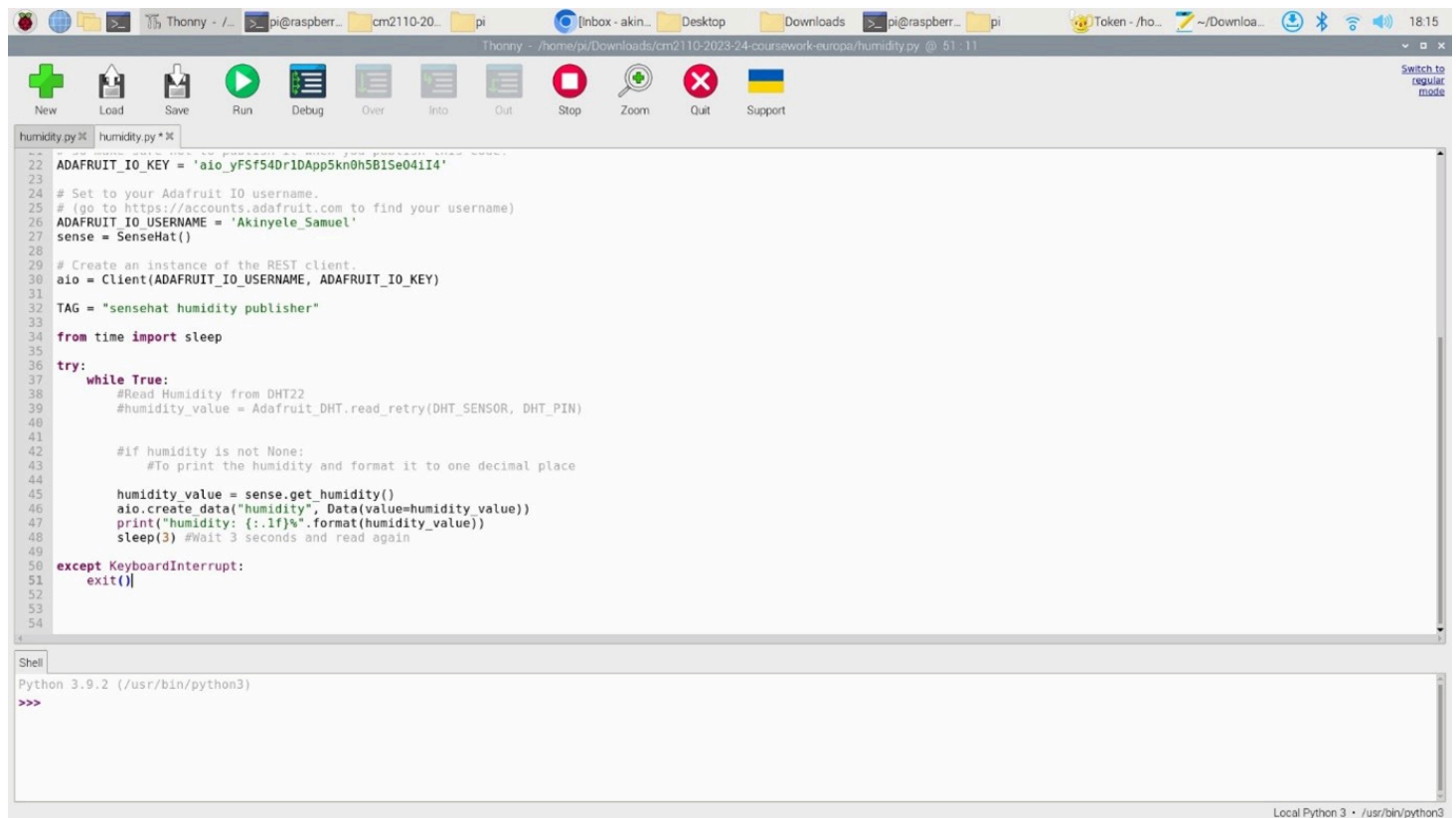
I imported the Adafruit client, feed, request-error, and data from Adafruit to connect my readings from the Raspberry Pi to the Adafruit feeds.

I imported Adafruit DHT for my cable connections and the DHT22.

The Adafruit Key was also imported to link my Adafruit account to the python code.

Sleep was imported from time

Humidity value was gotten from the sense hat that was imported.



The screenshot shows the Thonny IDE interface. The top toolbar includes icons for New, Load, Save, Run, Debug, Over, Info, Out, Stop, Zoom, Quit, and Support. The main editor window displays a Python script named 'humidity.py'. The script imports the Adafruit client, feed, request-error, and data modules, as well as the Adafruit DHT module and the sleep function from the time module. It sets the Adafruit IO key and username, creates an instance of the REST client, and defines a TAG. The script then enters a while loop that reads humidity from the DHT22 sensor, formats the value, and sends it to the Adafruit IO feed. A KeyboardInterrupt exception handler is also present.

```
22 ADAFRUIT_IO_KEY = 'aio_yFs754Dr1DApp5kn0h5B1Se041I4'
23
24 # Set to your Adafruit IO username.
25 # (go to https://accounts.adafruit.com to find your username)
26 ADAFRUIT_IO_USERNAME = 'Akinyele_Samuel'
27 sense = SenseHat()
28
29 # Create an instance of the REST client.
30 aio = Client(ADAFRUIT_IO_USERNAME, ADAFRUIT_IO_KEY)
31
32 TAG = "sensehat humidity publisher"
33
34 from time import sleep
35
36 try:
37     while True:
38         #Read Humidity from DHT22
39         humidity_value = Adafruit_DHT.read_retry(DHT_SENSOR, DHT_PIN)
40
41         #if humidity is not None:
42         #To print the humidity and format it to one decimal place
43
44         humidity_value = sense.get_humidity()
45         aio.create_data("humidity", Data(value=humidity_value))
46         print("humidity: {:.1f}%".format(humidity_value))
47         sleep(3) #Wait 3 seconds and read again
48
49 except KeyboardInterrupt:
50     exit()
```

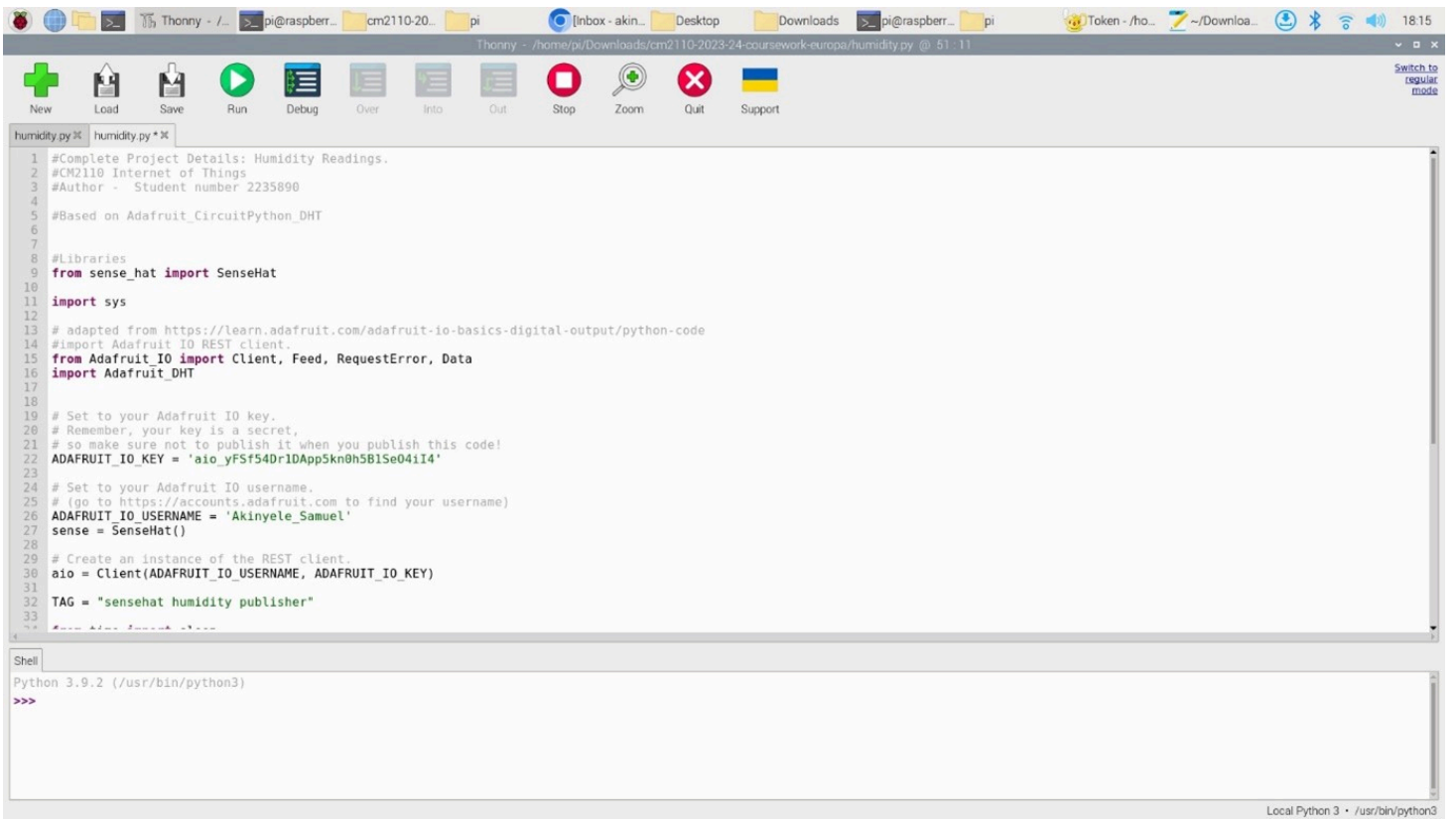
Below the editor is a Shell window showing the Python 3.9.2 prompt.

```
Python 3.9.2 (/usr/bin/python3)
>>>
```

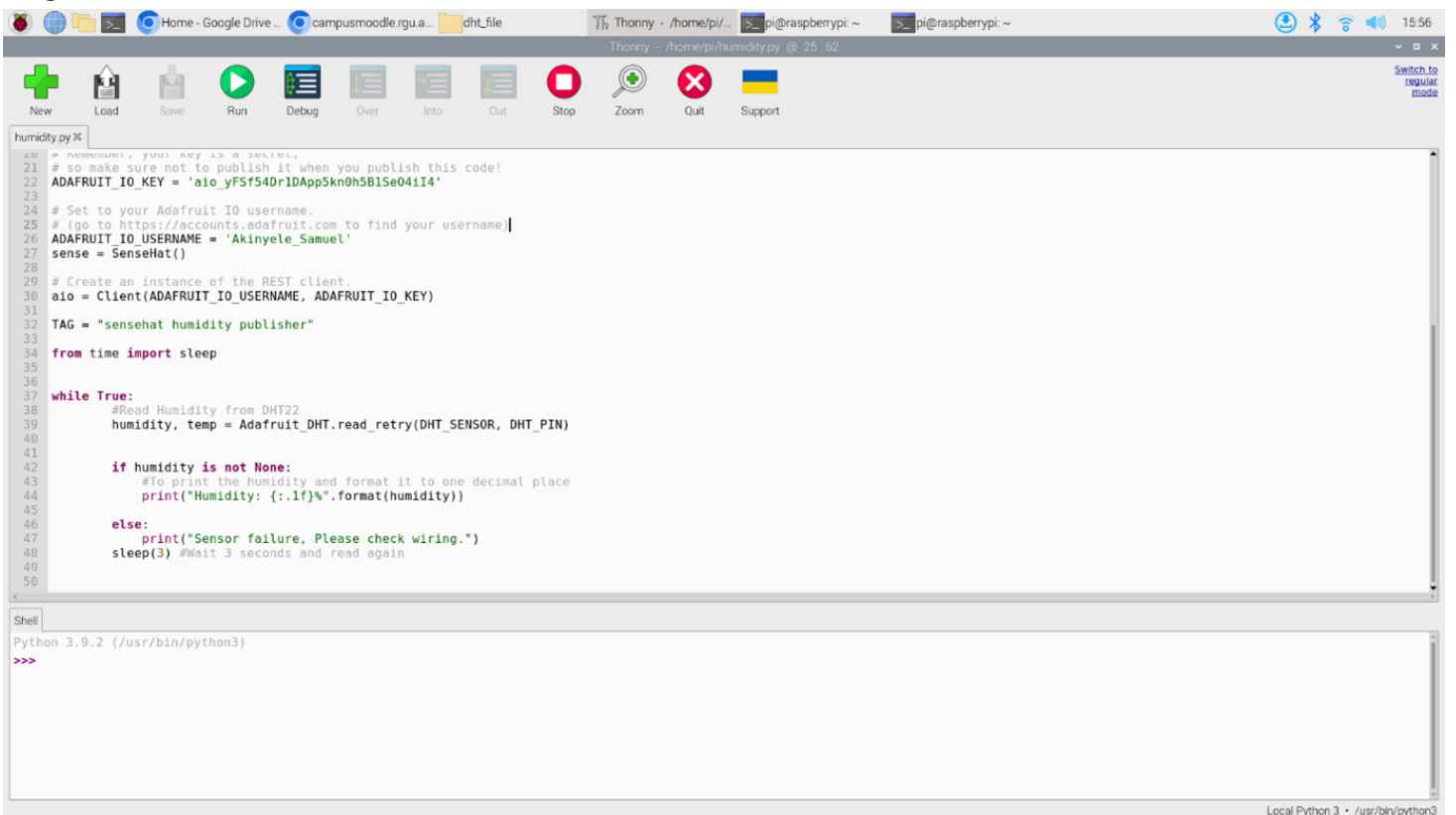
The status bar at the bottom indicates 'Local Python 3 • /usr/bin/python3'.

\*Figure 2



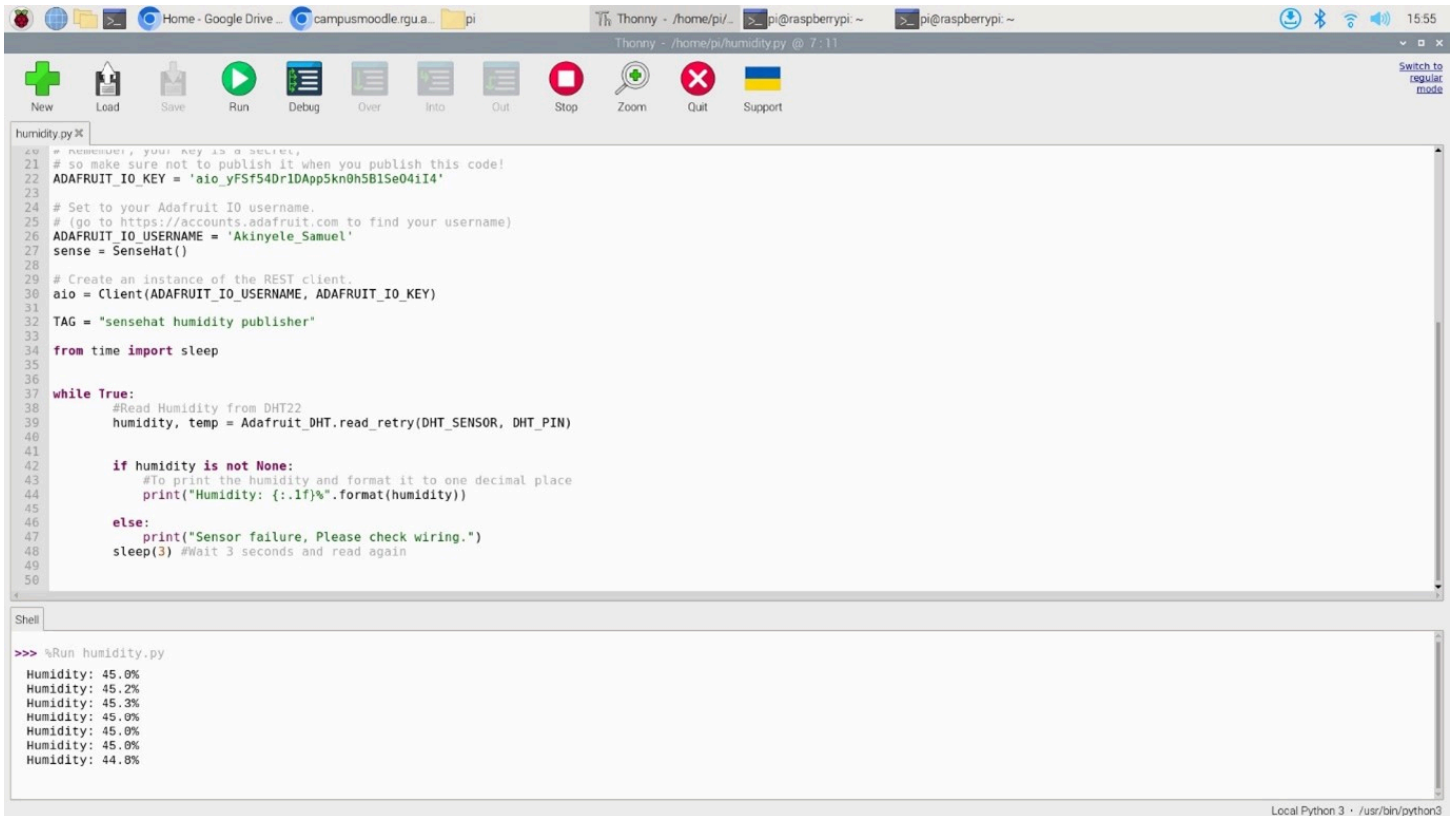


\*Figure 3



\*Figure 4

# Getting the humidity readings on the Thorny Python Shell:



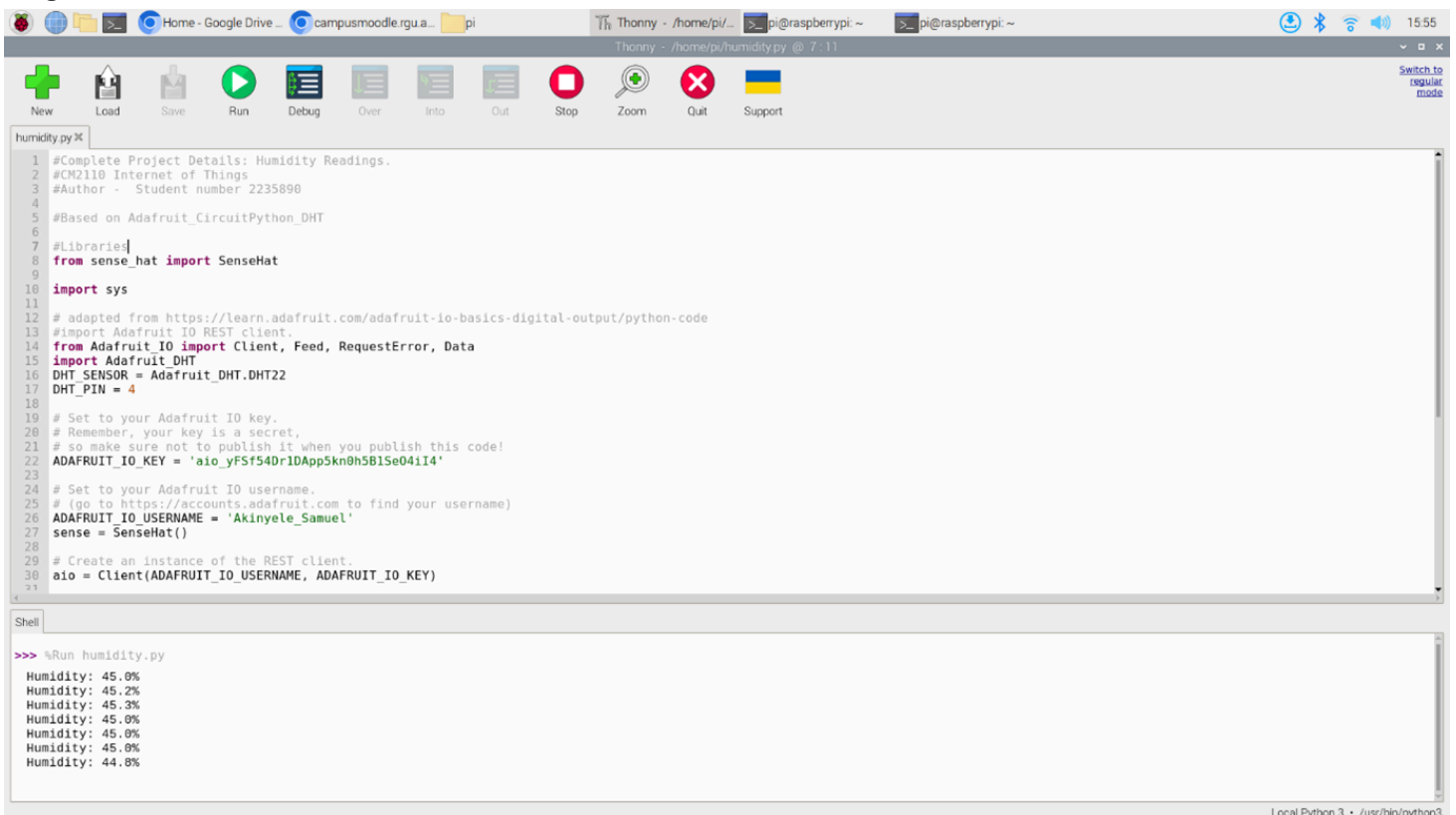
The screenshot shows the Thonny IDE interface. The top toolbar includes icons for New, Load, Save, Run, Debug, Over, Info, Out, Stop, Zoom, Quit, and Support. The main editor window displays a Python script named `humidity.py`. The script imports the `sense_hat` module and uses the `Adafruit_I2C` library to read humidity data from a DHT22 sensor. It includes comments for setting up the Adafruit I2C key and username. The script uses a `while True` loop to continuously read and print humidity values. The bottom shell window shows the output of the script, displaying humidity readings in percentage format.

```
humidity.py
1 # Remember, your key is a secret,
2 # so make sure not to publish it when you publish this code!
3 ADAFRUIT_IO_KEY = 'aio_yFs754Dr1DApp5kn0h5B1Se04iI4'
4
5 # Set to your Adafruit IO username.
6 # (go to https://accounts.adafruit.com to find your username)
7 ADAFRUIT_IO_USERNAME = 'Akinyele_Samuel'
8 sense = SenseHat()
9
10 # Create an instance of the REST client
11 aio = Client(ADAFRUIT_IO_USERNAME, ADAFRUIT_IO_KEY)
12
13 TAG = "sensehat humidity publisher"
14
15 from time import sleep
16
17 while True:
18     #Read Humidity from DHT22
19     humidity, temp = Adafruit_DHT.read_retry(DHT_SENSOR, DHT_PIN)
20
21     if humidity is not None:
22         #To print the humidity and format it to one decimal place
23         print("Humidity: {:.1f}%".format(humidity))
24     else:
25         print("Sensor failure, Please check wiring.")
26         sleep(3) #Wait 3 seconds and read again
```

```
Shell
>>> %Run humidity.py
Humidity: 45.0%
Humidity: 45.2%
Humidity: 45.3%
Humidity: 45.0%
Humidity: 45.0%
Humidity: 45.0%
Humidity: 44.8%
```

Local Python 3 · /usr/bin/python3

\*Figure 5



This screenshot shows a more detailed version of the Python script in the Thonny IDE. The script includes project details, library imports, and a more comprehensive setup for the Adafruit I2C client. The output in the shell window shows the same humidity readings as the previous figure.

```
humidity.py
1 #Complete Project Details: Humidity Readings.
2 #CM2110 Internet of Things
3 #Author - Student number 2235890
4
5 #Based on Adafruit_CircuitPython_DHT
6
7 #Libraries
8 from sense_hat import SenseHat
9
10 import sys
11
12 # adapted from https://learn.adafruit.com/adafruit-io-basics-digital-output/python-code
13 #import Adafruit IO REST client.
14 from Adafruit_IO import Client, Feed, RequestError, Data
15 import Adafruit_DHT
16 DHT_SENSOR = Adafruit_DHT.DHT22
17 DHT_PIN = 4
18
19 # Set to your Adafruit IO key.
20 # Remember, your key is a secret,
21 # so make sure not to publish it when you publish this code!
22 ADAFRUIT_IO_KEY = 'aio_yFs754Dr1DApp5kn0h5B1Se04iI4'
23
24 # Set to your Adafruit IO username.
25 # (go to https://accounts.adafruit.com to find your username)
26 ADAFRUIT_IO_USERNAME = 'Akinyele_Samuel'
27 sense = SenseHat()
28
29 # Create an instance of the REST client
30 aio = Client(ADAFRUIT_IO_USERNAME, ADAFRUIT_IO_KEY)
```

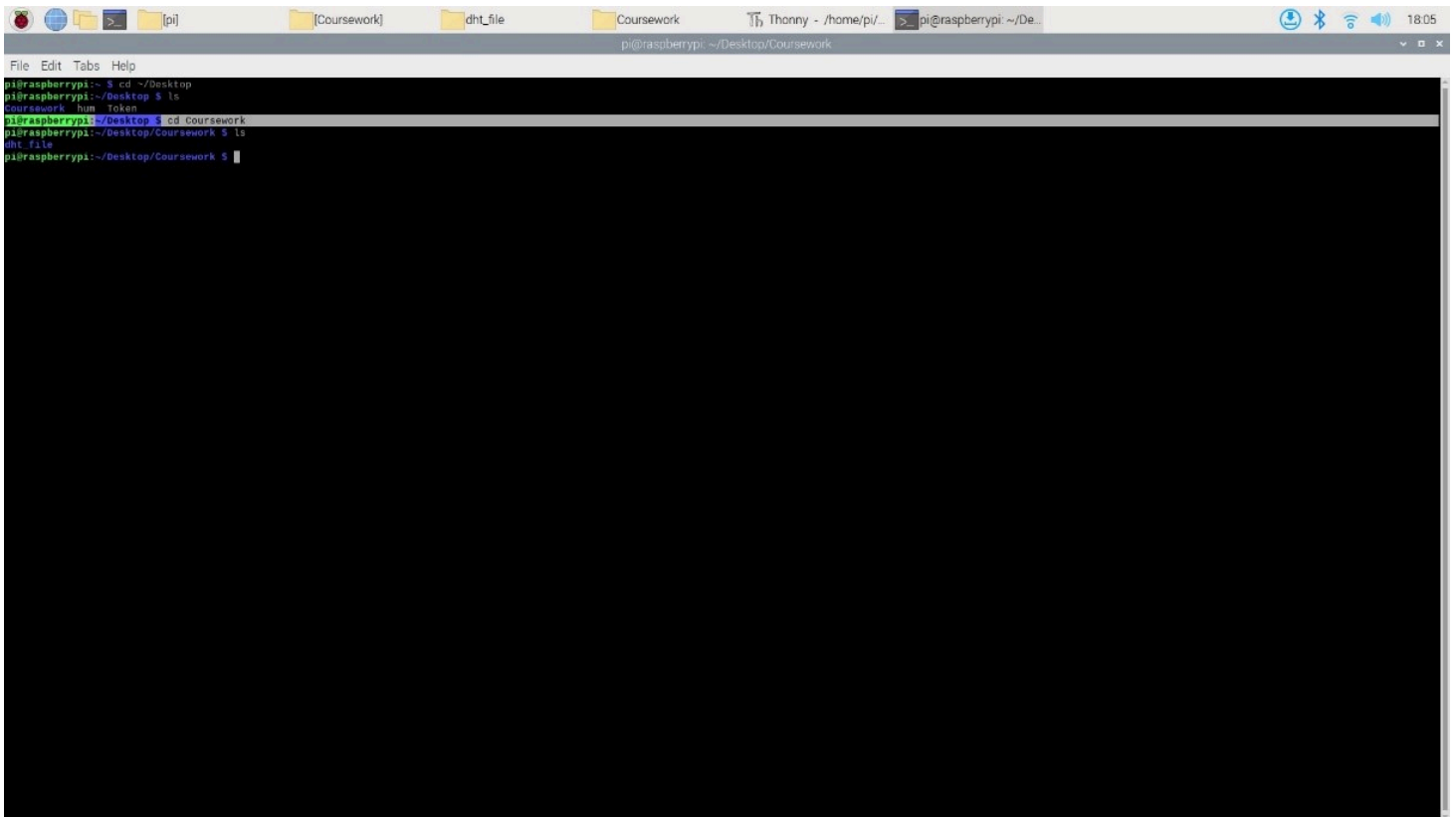
```
Shell
>>> %Run humidity.py
Humidity: 45.0%
Humidity: 45.2%
Humidity: 45.3%
Humidity: 45.0%
Humidity: 45.0%
Humidity: 45.0%
Humidity: 44.8%
```

Local Python 3 · /usr/bin/python3

\*Figure 6

## The commands used:

I created a directory on the Desktop, named Coursework, and another directory in the coursework folder named dht\_file.

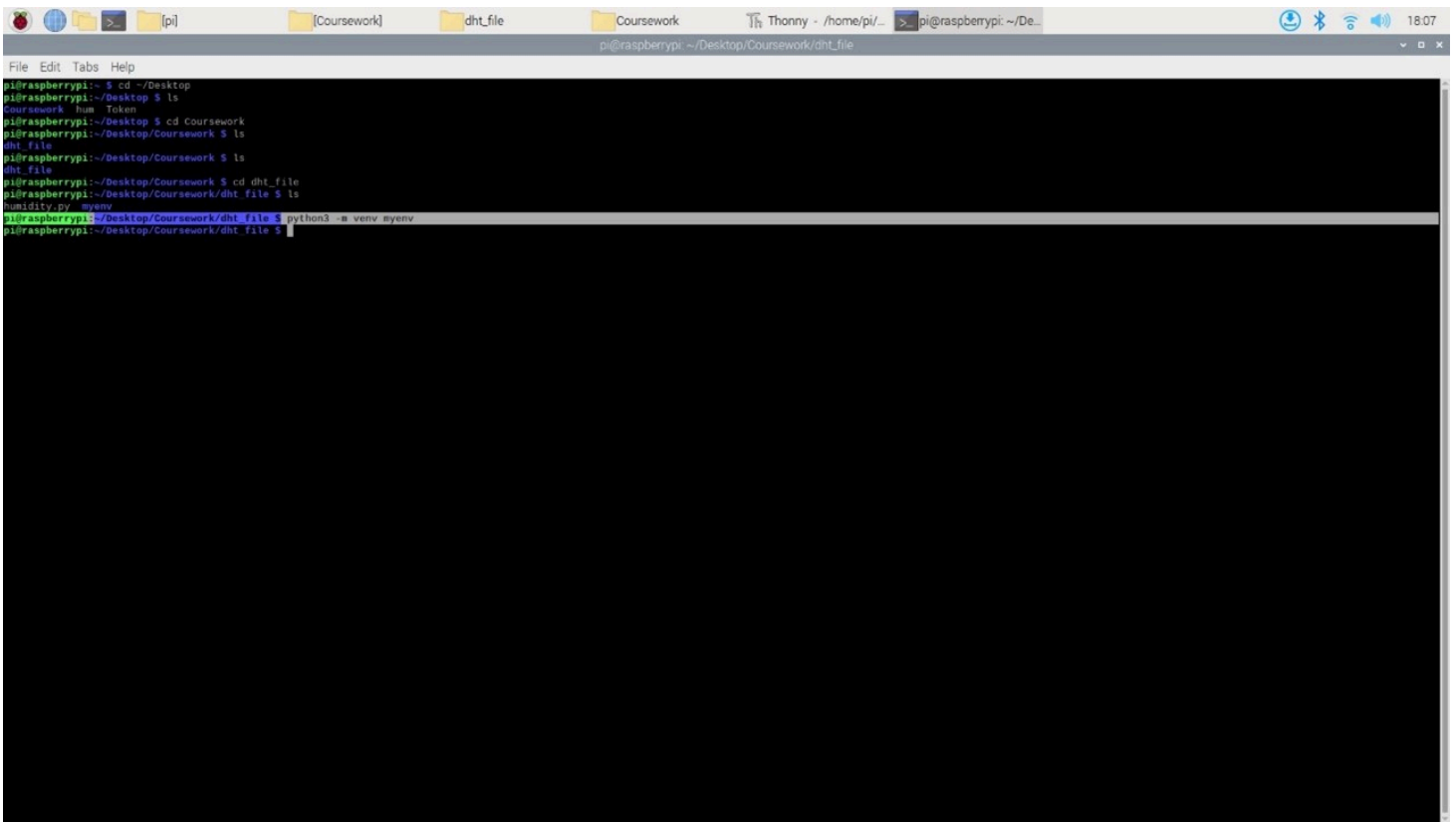


```
pi@raspberrypi:~$ cd ~/Desktop
pi@raspberrypi:~/Desktop$ ls
Coursework  dht_file
pi@raspberrypi:~/Desktop$ cd Coursework
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$
```

\*Figure 7

I installed the DHT library in a virtual environment. Creating a virtual environment will isolate the Python libraries we're using, in this case, the DHT library, from the rest of the system.

- `cd ~/Desktop/dht_test`

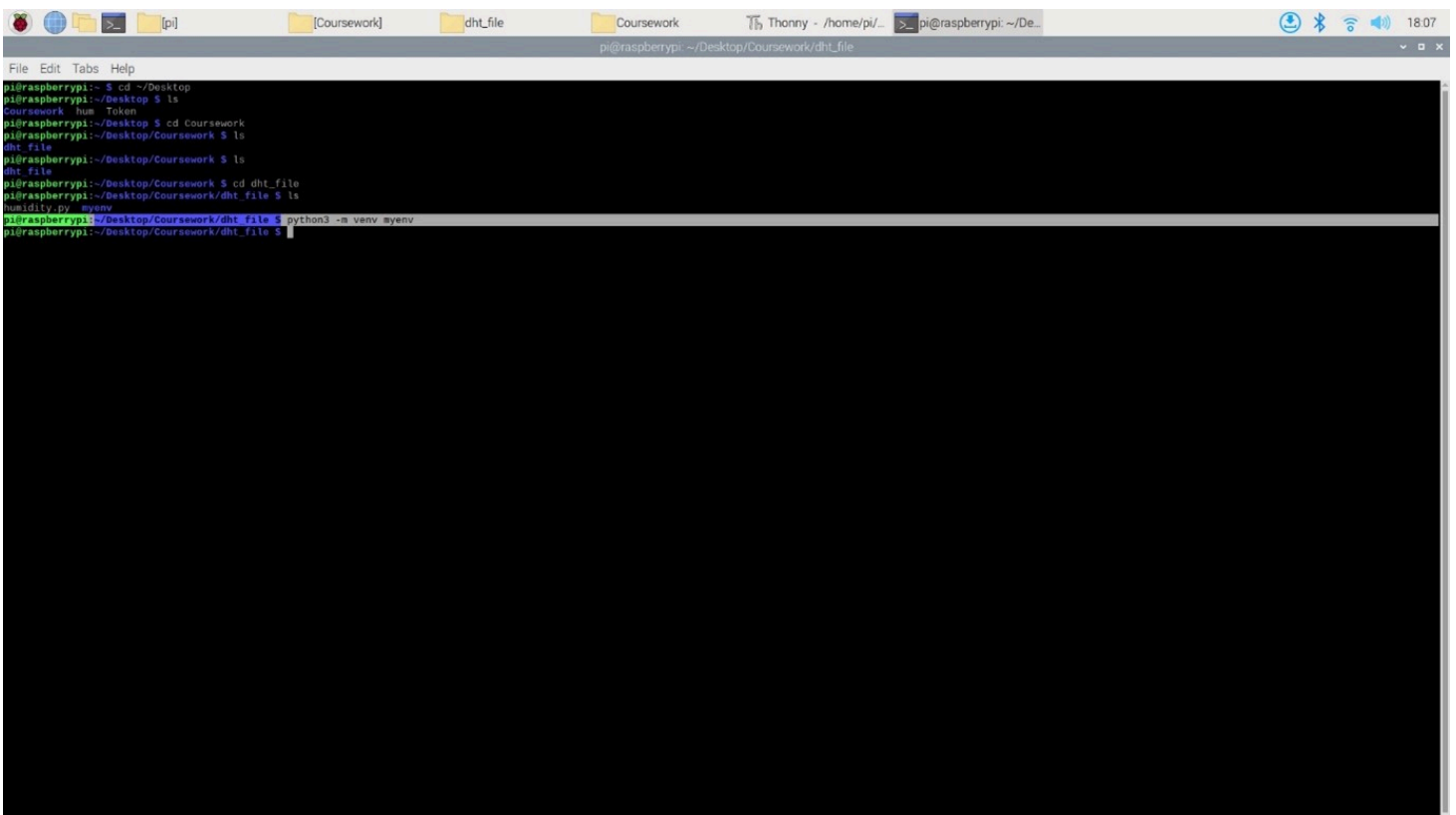


```
pi@raspberrypi: ~/Desktop/Coursework/dht_file
File Edit Tabs Help
pi@raspberrypi:~$ cd ~/Desktop
pi@raspberrypi:~/Desktop$ ls
Coursework hum Token
pi@raspberrypi:~/Desktop$ cd Coursework
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$ cd dht_file
pi@raspberrypi:~/Desktop/Coursework/dht_file$ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m venv myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$
```

\*Figure 8

Created a virtual environment for this directory called myenv. This is the same directory where I installed the DHT library.

-python3 -m venv myenv

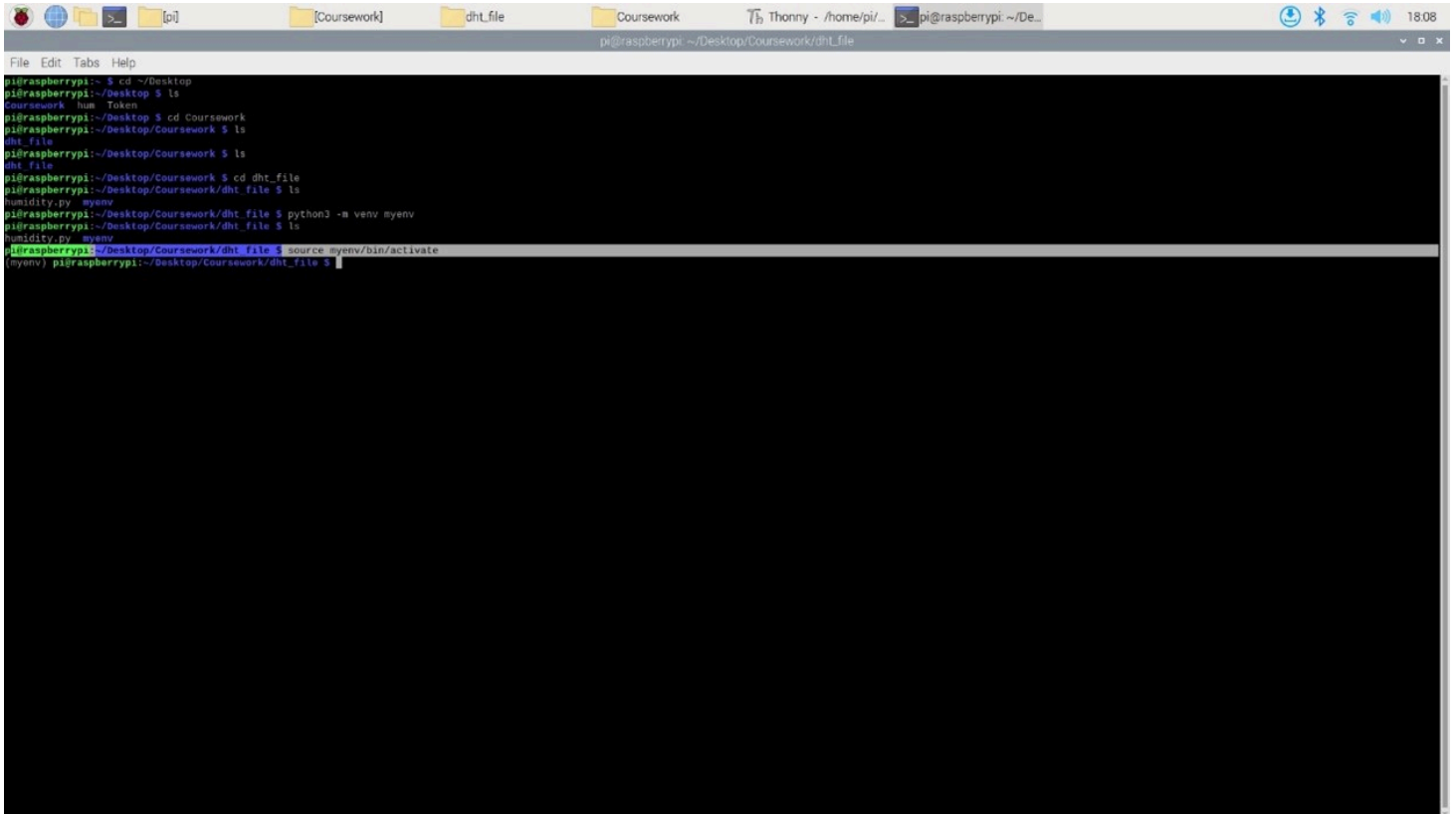


```
pi@raspberrypi: ~/Desktop/Coursework/dht_file
File Edit Tabs Help
pi@raspberrypi:~$ cd ~/Desktop
pi@raspberrypi:~/Desktop$ ls
Coursework hum Token
pi@raspberrypi:~/Desktop$ cd Coursework
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$ cd dht_file
pi@raspberrypi:~/Desktop/Coursework/dht_file$ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m venv myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$
```

\*Figure 9

To activate the virtual environment

- `source myenv/bin/activate`



```
pi@raspberrypi: ~/Desktop
$ cd ~/Desktop
pi@raspberrypi:~/Desktop $ ls
Coursework hum Token
pi@raspberrypi:~/Desktop $ cd Coursework
pi@raspberrypi:~/Desktop/Coursework $ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework $ cd dht_file
pi@raspberrypi:~/Desktop/Coursework/dht_file $ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file $ python3 -m venv myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file $ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file $ source myenv/bin/activate
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file $
```

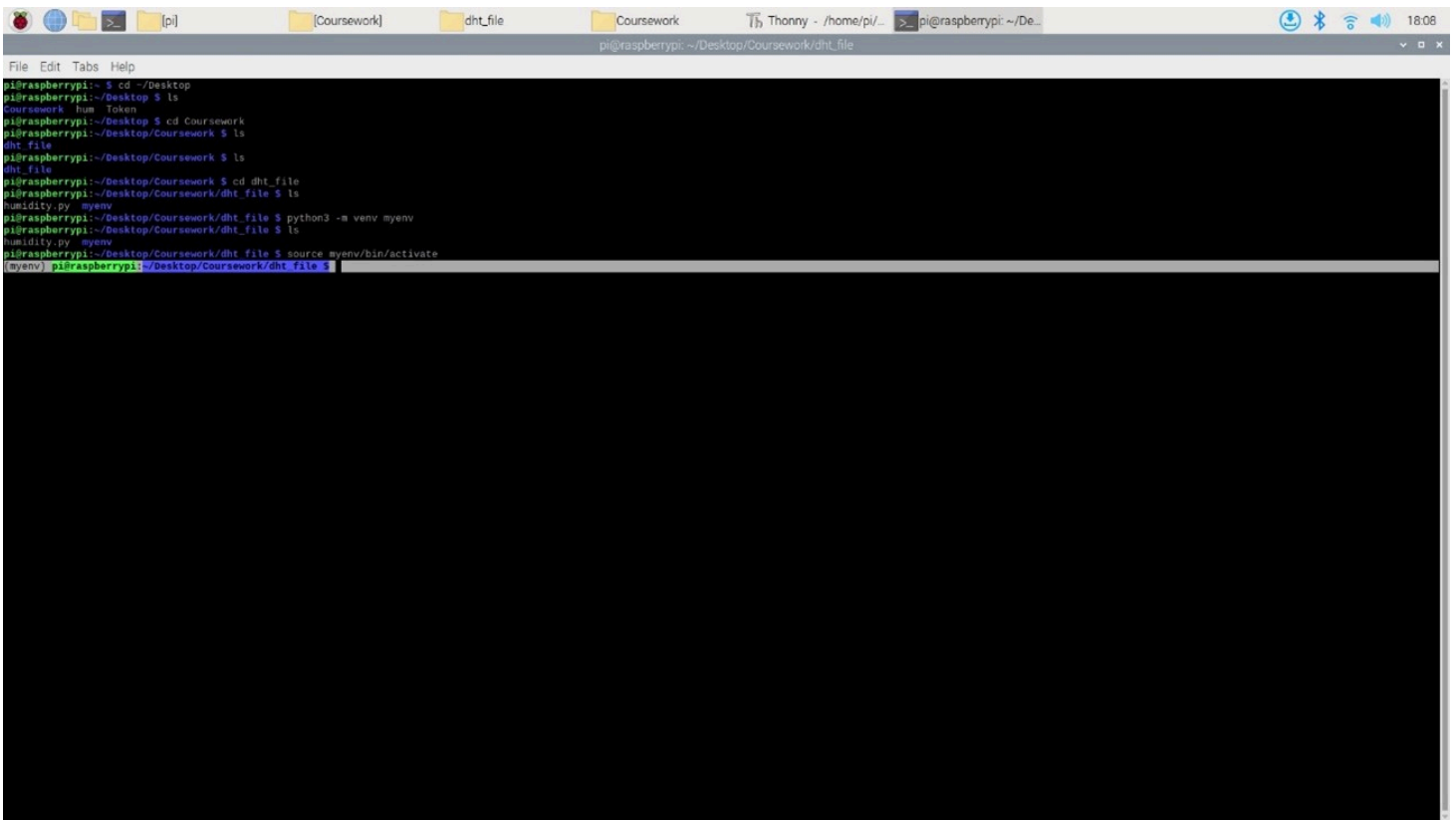
\*Figure 10

Installing the Adafruit\_CircuitPython\_DHT Library

Now that we are in our virtual environment, we can install the library, using the following command:

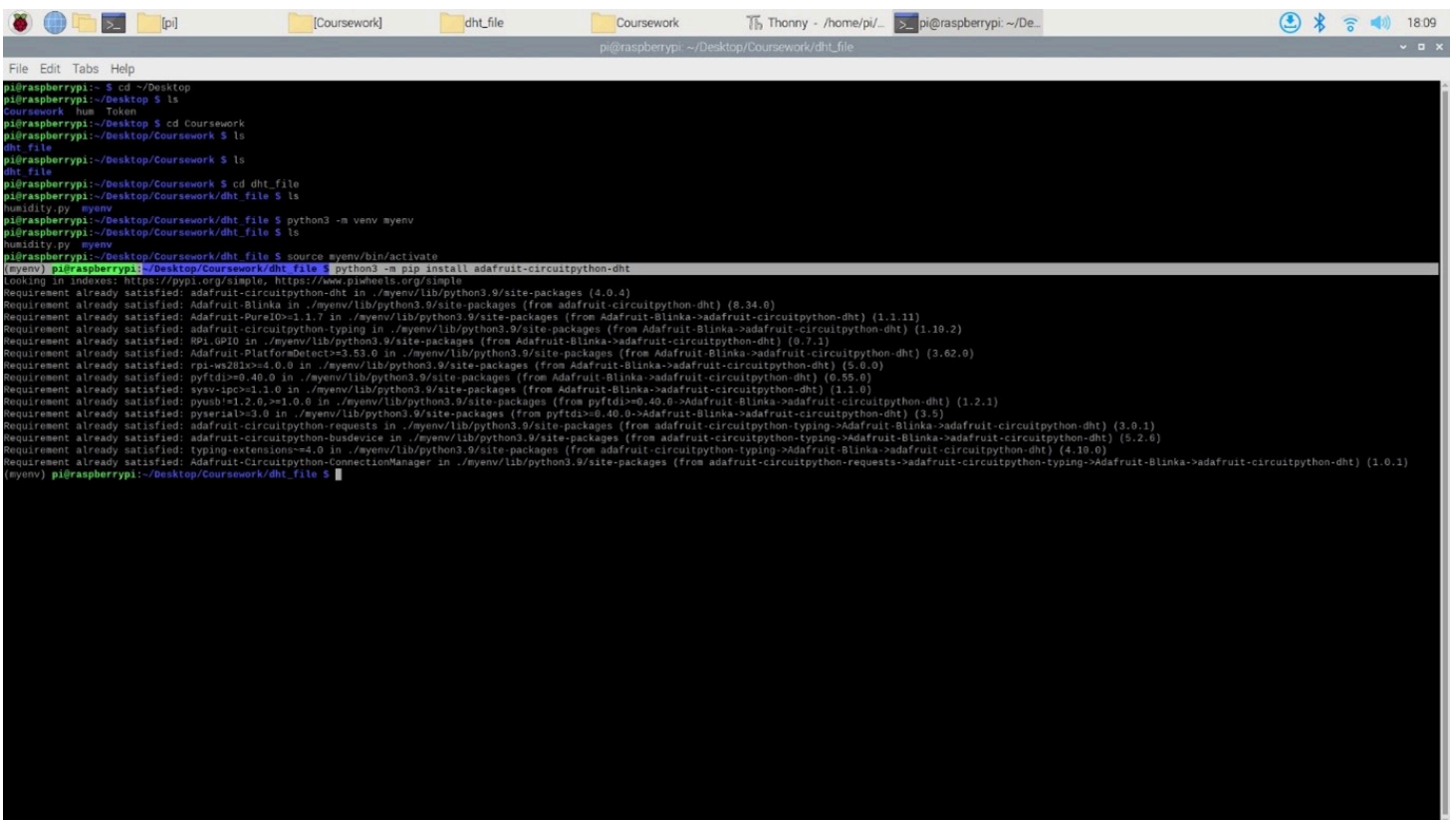
- `python3 -m pip install adafruit-circuitpython-dht`





```
pi@raspberrypi: ~/Desktop/Coursework/dht_file
File Edit Tabs Help
pi@raspberrypi:~$ cd ~/Desktop
pi@raspberrypi:~/Desktop$ ls
Coursework hum Token
pi@raspberrypi:~/Desktop$ cd Coursework
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$ cd dht_file
pi@raspberrypi:~/Desktop/Coursework/dht_file$ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m venv myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ source myenv/bin/activate
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$
```

\*Figure 11



```
pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m pip install adafruit-circuitpython-dht
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Requirement already satisfied: adafruit-circuitpython-dht in ./myenv/lib/python3.9/site-packages (4.0.4)
Requirement already satisfied: Adafruit-Blinka in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-dht) (8.34.0)
Requirement already satisfied: Adafruit-PureIO>=1.1.7 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.1.11)
Requirement already satisfied: adafruit-circuitpython-typing in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.10.2)
Requirement already satisfied: RPi.GPIO in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (0.7.3)
Requirement already satisfied: Adafruit-PlatformDetect>=3.53.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (3.62.0)
Requirement already satisfied: rpi-ws281x>=4.0.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (5.0.0)
Requirement already satisfied: pyftdi>=0.40.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (0.55.0)
Requirement already satisfied: sysv_ipc>=1.1.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) [0.1.0]
Requirement already satisfied: pyusb>=1.2.0, >=1.0.0 in ./myenv/lib/python3.9/site-packages (from pyftdi==0.40.0->Adafruit-Blinka->adafruit-circuitpython-dht) (1.2.1)
Requirement already satisfied: pyserial>=3.0 in ./myenv/lib/python3.9/site-packages (from pyftdi>=0.40.0->Adafruit-Blinka->adafruit-circuitpython-dht) (3.5)
Requirement already satisfied: adafruit-circuitpython-requests in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (3.0.1)
Requirement already satisfied: adafruit-circuitpython-busdevice in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (5.2.0)
Requirement already satisfied: typing-extensions>=4.0 in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (4.10.0)
Requirement already satisfied: Adafruit-Circuitpython-ConnectionManager in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-requests->adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (1.0.1)
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$
```

\*Figure 12

To run the python code to get the humidity readings

- python humidity.py

```

pi@raspberrypi: ~/Desktop/Coursework/dht_file
File Edit Tabs Help
pi@raspberrypi:~$ cd ~/Desktop
pi@raspberrypi:~/Desktop$ ls
Coursework hum Token
pi@raspberrypi:~/Desktop$ cd Coursework
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$ cd dht_file
pi@raspberrypi:~/Desktop/Coursework/dht_file$ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m venv myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ source myenv/bin/activate
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m pip install adafruit-circuitpython-dht
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Requirement already satisfied: adafruit-circuitpython-dht in ./myenv/lib/python3.9/site-packages (4.0.4)
Requirement already satisfied: Adafruit-Blinka in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-dht) (0.34.0)
Requirement already satisfied: Adafruit-PureIO>=1.1.7 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.1.11)
Requirement already satisfied: adafruit-circuitpython-typing in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.10.2)
Requirement already satisfied: RPi.GPIO in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (0.7.2)
Requirement already satisfied: Adafruit-PlatformDetect>=3.53.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (3.62.0)
Requirement already satisfied: rpi-ws281x>=4.0.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (5.0.0)
Requirement already satisfied: pyftdi>=0.40.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (0.55.0)
Requirement already satisfied: sysv_ipc>=1.1.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.1.0)
Requirement already satisfied: pyusb>=1.2.0,>=1.0.0 in ./myenv/lib/python3.9/site-packages (from pyftdi>=0.40.0->Adafruit-Blinka->adafruit-circuitpython-dht) (1.2.1)
Requirement already satisfied: pyserial>=3.0 in ./myenv/lib/python3.9/site-packages (from pyftdi>=0.40.0->Adafruit-Blinka->adafruit-circuitpython-dht) (3.5)
Requirement already satisfied: adafruit-circuitpython-requests in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (3.0.1)
Requirement already satisfied: adafruit-circuitpython-busdevice in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (5.2.6)
Requirement already satisfied: typing-extensions>=4.0 in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (4.10.0)
Requirement already satisfied: Adafruit-CircuitPython-ConnectionManager in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-requests->Adafruit-Blinka->adafruit-circuitpython-dht) (1.0.1)
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$ python humidity.py
Humidity 31.700000762939453
Humidity 31.799999237060547
Humidity 31.700000762939453
Humidity 31.700000762939453
Humidity 31.799999237060547
Humidity 31.799999237060547
Humidity 31.799999237060547
Humidity 31.799999237060547
Humidity 31.89999918530273
Humidity 31.89999918530273
Humidity 31.89999918530273
Humidity 31.89999918530273
Humidity 31.89999918530273
^CTraceback (most recent call last):
  File "/home/pi/Desktop/Coursework/dht_file/humidity.py", line 25, in <module>
    sleep(3) #Wait 3 seconds and read again
KeyboardInterrupt
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$

```

\*Figure 13

Getting the readings in a formatted version

```

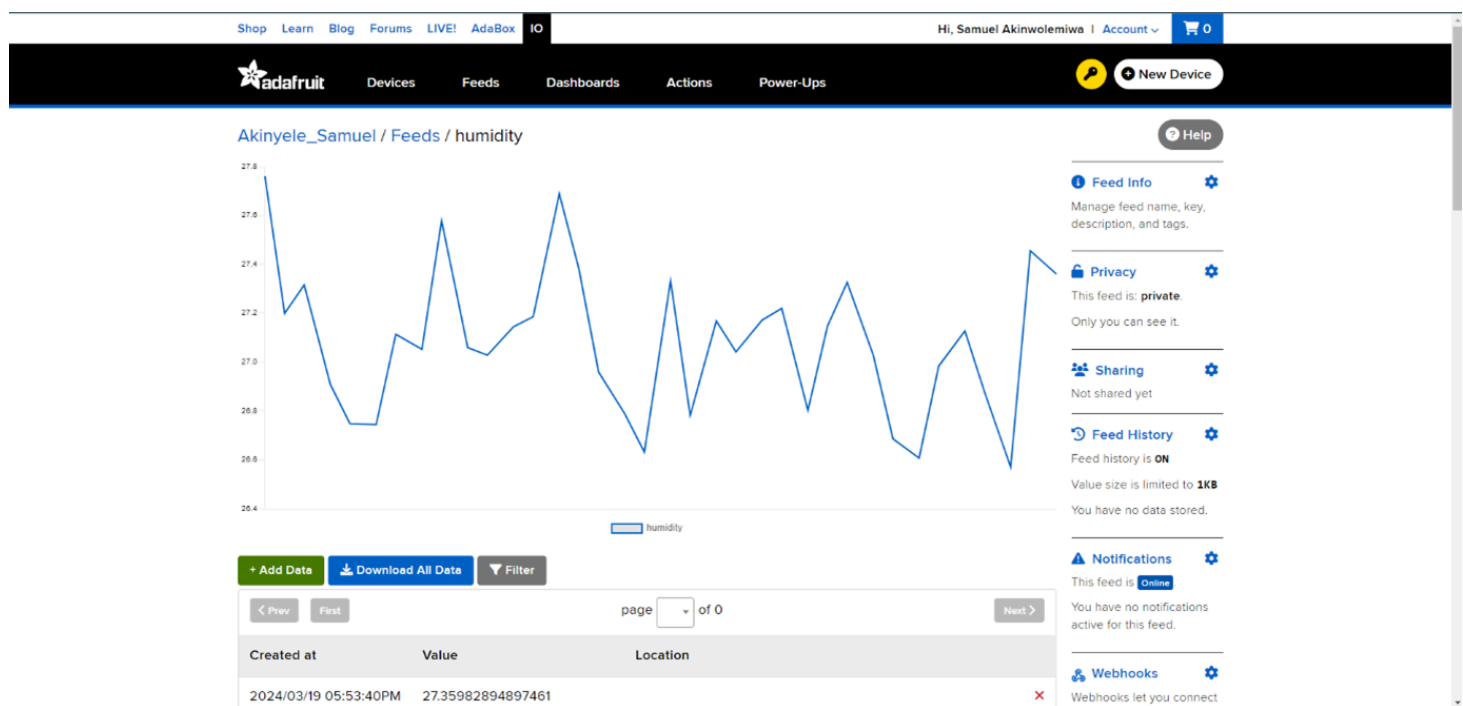
pi@raspberrypi: ~/Desktop/Coursework/dht_file
File Edit Tabs Help
pi@raspberrypi:~$ cd ~/Desktop
pi@raspberrypi:~/Desktop$ ls
Coursework hum Token
pi@raspberrypi:~/Desktop$ cd Coursework
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$ ls
dht_file
pi@raspberrypi:~/Desktop/Coursework$ cd dht_file
pi@raspberrypi:~/Desktop/Coursework/dht_file$ ls
humidity.py myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m venv myenv
pi@raspberrypi:~/Desktop/Coursework/dht_file$ source myenv/bin/activate
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$ python3 -m pip install adafruit-circuitpython-dht
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Requirement already satisfied: adafruit-circuitpython-dht in ./myenv/lib/python3.9/site-packages (4.0.4)
Requirement already satisfied: Adafruit-Blinka in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-dht) (0.34.0)
Requirement already satisfied: Adafruit-PureIO>=1.1.7 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.1.11)
Requirement already satisfied: adafruit-circuitpython-typing in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.10.2)
Requirement already satisfied: RPi.GPIO in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (0.7.2)
Requirement already satisfied: Adafruit-PlatformDetect>=3.53.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (3.62.0)
Requirement already satisfied: rpi-ws281x>=4.0.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (5.0.0)
Requirement already satisfied: pyftdi>=0.40.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (0.55.0)
Requirement already satisfied: sysv_ipc>=1.1.0 in ./myenv/lib/python3.9/site-packages (from Adafruit-Blinka->adafruit-circuitpython-dht) (1.1.0)
Requirement already satisfied: pyusb>=1.2.0,>=1.0.0 in ./myenv/lib/python3.9/site-packages (from pyftdi>=0.40.0->Adafruit-Blinka->adafruit-circuitpython-dht) (1.2.1)
Requirement already satisfied: pyserial>=3.0 in ./myenv/lib/python3.9/site-packages (from pyftdi>=0.40.0->Adafruit-Blinka->adafruit-circuitpython-dht) (3.5)
Requirement already satisfied: adafruit-circuitpython-requests in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (3.0.1)
Requirement already satisfied: adafruit-circuitpython-busdevice in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (5.2.6)
Requirement already satisfied: typing-extensions>=4.0 in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-typing->Adafruit-Blinka->adafruit-circuitpython-dht) (4.10.0)
Requirement already satisfied: Adafruit-CircuitPython-ConnectionManager in ./myenv/lib/python3.9/site-packages (from adafruit-circuitpython-requests->Adafruit-Blinka->adafruit-circuitpython-dht) (1.0.1)
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$ python humidity.py
Humidity 31.700000762939453
Humidity 31.799999237060547
Humidity 31.700000762939453
Humidity 31.700000762939453
Humidity 31.799999237060547
Humidity 31.799999237060547
Humidity 31.799999237060547
Humidity 31.799999237060547
Humidity 31.89999918530273
Humidity 31.89999918530273
Humidity 31.89999918530273
Humidity 31.89999918530273
Humidity 31.89999918530273
^CTraceback (most recent call last):
  File "/home/pi/Desktop/Coursework/dht_file/humidity.py", line 25, in <module>
    sleep(3) #Wait 3 seconds and read again
KeyboardInterrupt
(myenv) pi@raspberrypi:~/Desktop/Coursework/dht_file$

```

\*Figure 14

```
File Edit Tabs Help
error: Your local changes to the following files would be overwritten by merge:
  humidity.py
Please commit your changes or stash them before you merge.
Aborting
pi@raspberrypi:~/Downloads/cm2110-2023-24-coursework-europa $ git config pull.rebase
pi@raspberrypi:~/Downloads/cm2110-2023-24-coursework-europa $ git pull
hint: Pulling without specifying how to reconcile divergent branches is
hint: discouraged. You can squelch this message by running one of the following
hint: commands sometime before your next pull:
hint:
hint:   git config pull.rebase false # merge (the default strategy)
hint:   git config pull.rebase true  # rebase
hint:   git config pull.ff only      # fast-forward only
hint:
hint: You can replace "git config" with "git config --global" to set a default
hint: preference for all repositories. You can also pass --rebase, --no-rebase,
hint: or --ff-only on the command line to override the configured default per
hint: invocation.
Username for 'https://github.com': Akinyele-Samuel
Password for 'https://github.com': 
Updating f012b99..00de2c6
error: Your local changes to the following files would be overwritten by merge:
  humidity.py
Please commit your changes or stash them before you merge.
Aborting
pi@raspberrypi:~/Downloads/cm2110-2023-24-coursework-europa $ python3 humidity.py
humidity: 26.5%
humidity: 26.8%
humidity: 26.1%
humidity: 26.7%
humidity: 26.3%
humidity: 26.1%
humidity: 26.3%
humidity: 26.6%
humidity: 26.3%
humidity: 27.1%
humidity: 26.6%
humidity: 26.8%
humidity: 26.4%
humidity: 26.6%
humidity: 26.6%
humidity: 26.5%
humidity: 26.6%
humidity: 25.9%
humidity: 26.7%
humidity: 26.4%
humidity: 26.4%
humidity: 26.5%
humidity: 26.2%
humidity: 25.9%
humidity: 26.6%
humidity: 26.1%
humidity: 26.5%
humidity: 26.3%
humidity: 26.5%
humidity: 26.8%
pi@raspberrypi:~/Downloads/cm2110-2023-24-coursework-europa $
```

\*Figure 15



\*Figure 16

Humidity readings from my python code on raspberry pi being published to my Adafruit feeds.

# References

<https://www.tech-sparks.com/raspberry-pi-dht22-sensor-project/>

<https://randomnerdtutorials.com/raspberry-pi-dht11-dht22-python/>