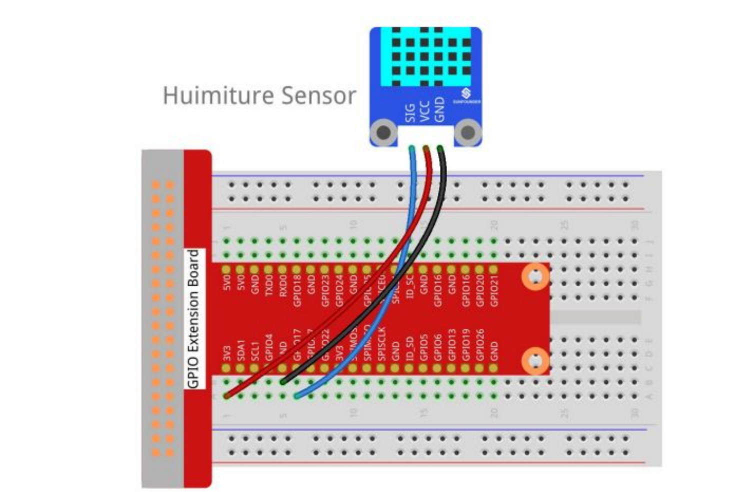
Week 5:

CSCI 3907: IoT using Raspberry Pi

Assignment #4



Assignment :

- Part A
  - Read humiture sensor to get humidity and temperature
  - Send readings to server
- Part B
  - Send request to server to get all the data you've sent so far
  - Graph data received from server

Steps to get started:

1. Wire up humiture sensor
2. Move **28_humiture.py** from Sunfounder github repo to current directory
   a. Use **read_dht11_dat()** to get data
      i. Function returns **False** if reading fails

Note: If you did the assignment last week, you don't need to re-clone the git repo again.

Sending data to server:

- Send POST request
    - Send to http://161.253.75.170:5000/piReading/<your name>
- Send parameters “temperature” and “humidity”
- Only send request if reading from sensor was successful

- Data will be stored on server – the “/<your name>” at end of route is so everyone’s data can be stored separately
    - To view data & last reading sent to server go (in browser) to http://161.253.75.170:5000/<your name>

Getting data from server:

- Send GET request
  - Send to http://161.253.75.170:5000/getData/<your name
- Server will send back JSON with all data that has been sent through POST request to “/piReading/<your name>”
  - JSON format:
    - {“data”: [
    - {“time”: , “temp”, “humidity”},
    - {{“time”: , “temp”, “humidity”},...
    -]}
- Graph temperature & humidity over time

Helpful Info

Requests in python:

```
import requests
response = requests.get(url)
response = requests.post(url, data=)
```

Note: data should be json format (i.e. {‘param1_name’:param1_val, ‘param2_name’: param2_val}

JSON in python:

```
import json
json.loads(response.content.decode(‘utf-8’))
```

- Response content will be sent as bytes, need this call to decode to be able to load json object

Example - indexing json:

```
json = ‘{“name” : …}’
Name = json[“name”]
```

Matplotlib:

https://www.w3schools.com/python/matplotlib_pyplot.asp