**Project Report 2 CSCI 43300**

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**1. Introduction**

**Hardware platform used:** ​Raspberry Pi 4

**Software platforms used:**

* Raspberry Pi OS
* Python programming language
* CoAP
* Chrome Copper
* Wiresharks

**Sensor:** DHT11 Temperature and Humidity sensor

**2. Project description**

**Step 2:**

We started by installing CoAPthon package for python and adding the Copper extention in Chrome browser. Then we chose to use the temperature and humidity sensor DHT11 in this project and connected it to the raspberry pi. In order to make the sensor work with Python, we also need to install Adafruit package.

Here is the circuit diagram for our DHT11 sensor connection:

…(diagram)

After testing that the sensor works well and is able to produce proper readings, I made a my\_resource.py file and a my\_coap\_server.py file. In the resource file, I simply create a class of our sensor as a resource, get the readings from the sensor and pass the results to ‘payload’. The class defines 4 main methods: render\_GET(), render\_PUT(), render\_POST() and render\_DELETE(), which will be triggered when the client send any request respectively to the server. In the server file, I imported the CoAP library and the DHT11 resource from the resource file. Then simply add our resource to the server class, and enter the IP address of our raspberry pi device to CoAP server.

Next, I run my\_coap\_server.py file in command line to start the server. Use our laptop to connect the web client Copper on Chrome using the same IP address to access our server. Choose ‘Core’ on the left and hit ‘GET’, it will show our DHT11 sensor resource on the left. Then choose the sensor resource and “GET” again, we can see the readings in the payload session of the page. To this point, it means that everything is working well.

**Step 3:**

**3. Lesson Learnt**

**4. Conclusion**