

Assignment 3

Write Sensor Data from Arduino

CPSC 3555 - Spring 2018

Project Overview: The goal of this project is to store the data collected from sensors connected to the Arduino (Edge Device) into the database on the Raspberry PI (Gateway Device).

Step 1: Add the photoresistor sensor and one other analog sensor to the Arduino and verify the sensors work. Tips: I suggest temporarily disconnecting the ESP8266 chip and printing the readings to the Serial Monitor to verify you are getting readings. After this, you no longer need to print those values to the Serial Monitor and can remove the prints from sketch.

Step 2: For the sensor values into a single string to be transmitted to the Gateway. Add the ability for the `updateGateway()` to take a string argument and pass the argument to the `send` instead of the Hello World string we sent in class. Tip: I suggest a comma delimited string. This will help you parse the data in python more easily. You may also find it beneficial to add Device ID into the string to use to Identify your device in the data.

Step 3: Connect the ESP8266 chip back and send the data to the py. Verify your reading is making it to the Raspberry PI.

Step 4: Update your python code to parse the data into two variables (or three) variables and print the individual variables to the console. These variables will next be used in your INSERT statement in the database.

Step 5: Create your new table in your database. It should mirror the following, however, you may need to change the data type on the each sensor value. Write a new description for the sensor value. You will need to turn in a copy of this table with your submission.

Column Name	Data Type	Description
ROW_ID	Integer	This is the primary key, it cannot be null and should auto increment by 1 each time a row is entered
DEVICE_ID	Varchar of 25 characters	This is a unique device id
SENSOR_VAL_1	Int	
SENSOR_VAL_2	Int	
INSERT_DATE	Date Time	Timestamp of the data

Step 6: Add your database connection information to your python file and create the INSERT statement to insert the data into the database. Remember this will be done in the loop after you receive the data. Tip: Reuse your code from Assignment 2. I will also add a sample solution for Assignment 2 in CougarView for those who had trouble.

Step 7: Test and debug your program. You should have all the pieces together for this to work.

Deliverables:

1. A copy of the description table that shows your database descriptions.
2. A screenshot of a query that shows the database with your sensor data.
3. A copy of your python code
4. A copy of your Arduino code
5. A picture of your wired Arduino