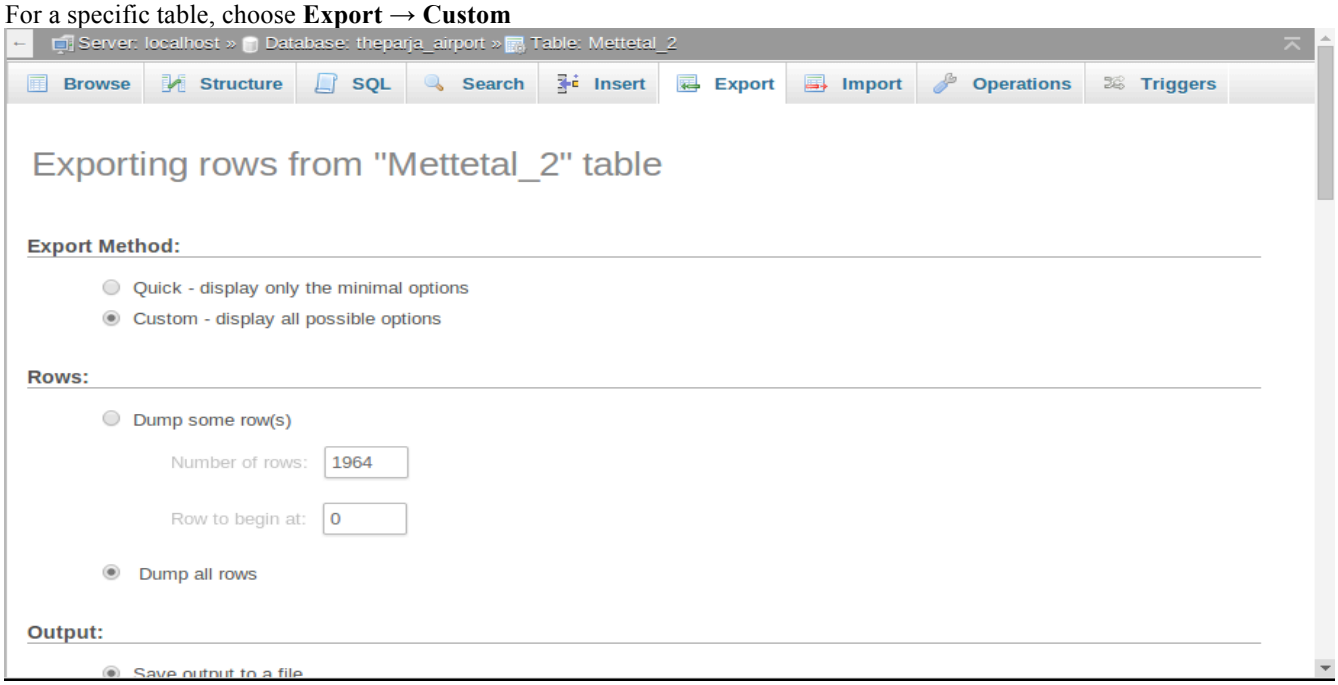
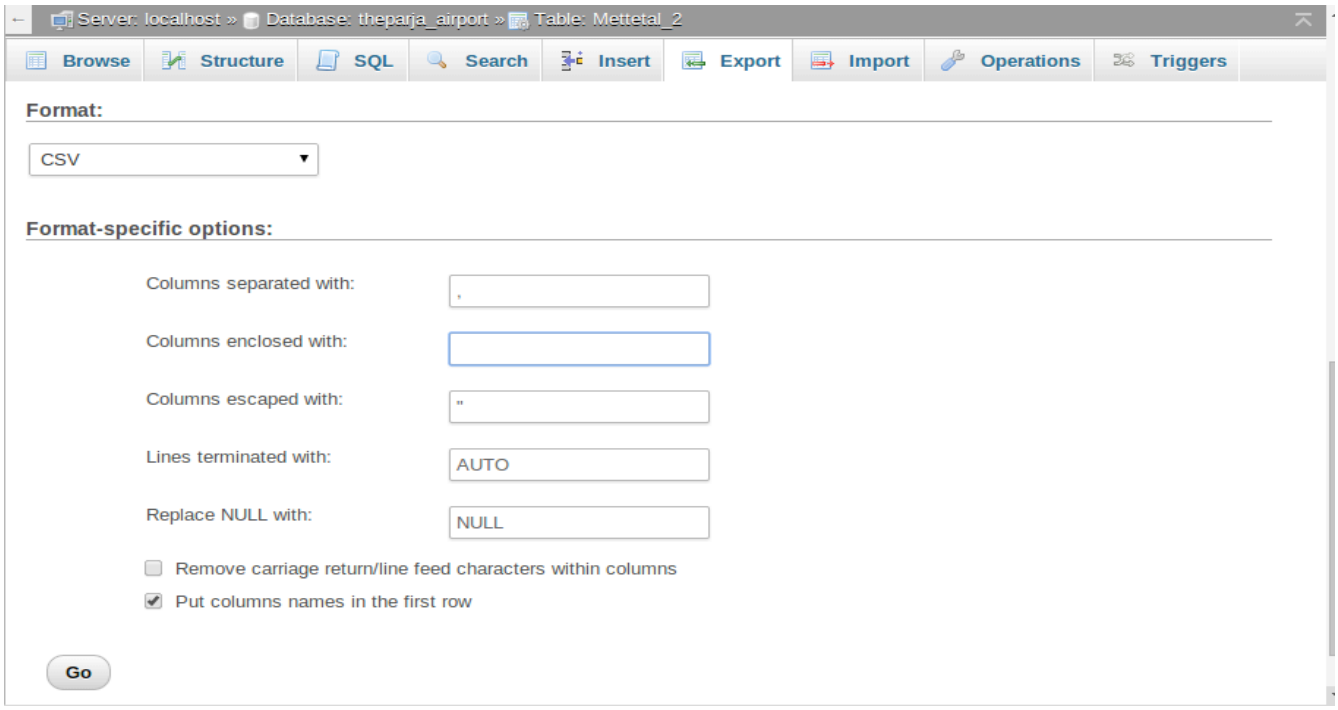
Generate Graphs

Step 1. Get the .csv file with specific format from the phpMyAdmin server.

For a specific table, choose **Export → Custom**



(1) In the **Format area**, choose CSV;
(2) In the **Format-specific area**: leave the **Columns enclosed with** blank and tick the **Put columns names in the first row** option. See the screen shot for details;
(4) Then click the button **Go**.



Step 2. Check the exported .csv file. The .csv file should look like this when you open it using vim:

life@Tech-1st: ~/Desktop

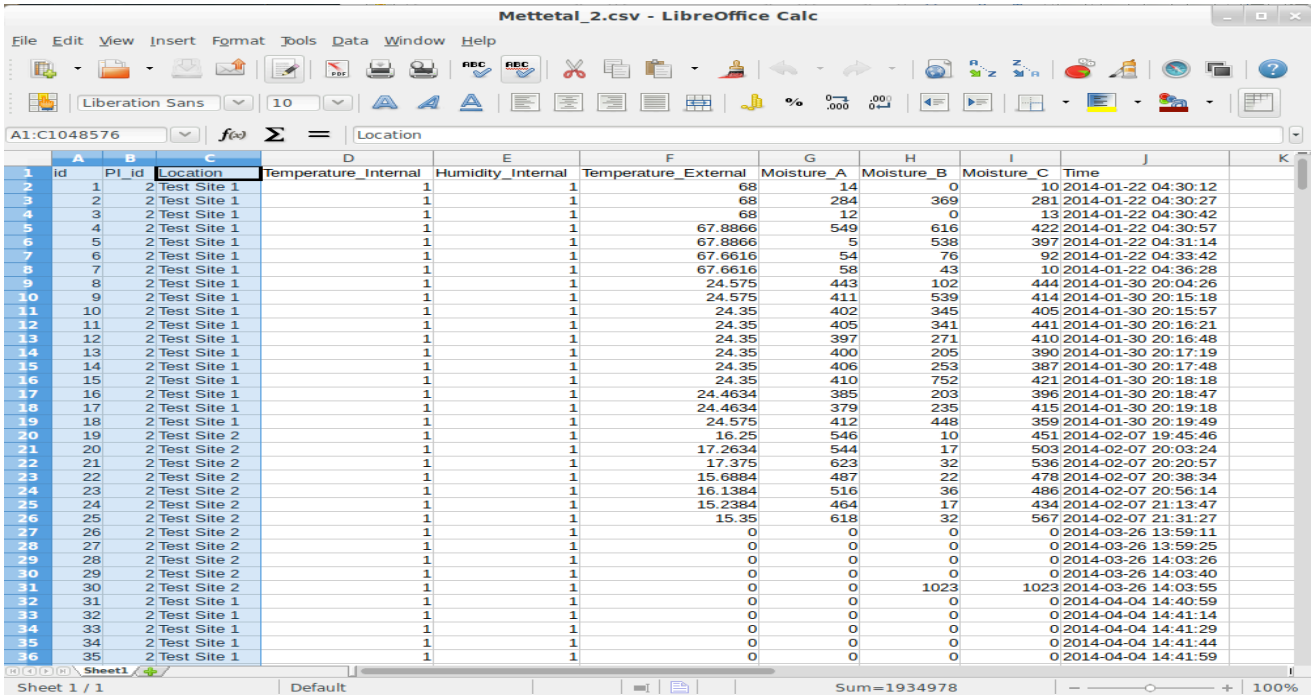
File Edit View Search Terminal Help

```
  1 id,PI_id,Location,Temperature_Internal,Humidity_Internal,Temperature_External,Moisture_A,Moisture_B,Moisture_C,
    Time
  2 1,2,Test Site 1,1,1,68,14,0,10,2014-01-22 04:30:12
  3 2,2,Test Site 1,1,1,68,284,369,281,2014-01-22 04:30:27
  4 3,2,Test Site 1,1,1,68,12,0,13,2014-01-22 04:30:42
  5 4,2,Test Site 1,1,1,67.8866,549,616,422,2014-01-22 04:30:57
  6 5,2,Test Site 1,1,1,67.8866,5,538,397,2014-01-22 04:31:14
  7 6,2,Test Site 1,1,1,67.6616,54,76,92,2014-01-22 04:33:42
  8 7,2,Test Site 1,1,1,67.6616,58,43,10,2014-01-22 04:36:28
  9 8,2,Test Site 1,1,1,24.575,443,102,444,2014-01-30 20:04:26
 10 9,2,Test Site 1,1,1,24.575,411,539,414,2014-01-30 20:15:18
 11 10,2,Test Site 1,1,1,24.35,402,345,405,2014-01-30 20:15:57
 12 11,2,Test Site 1,1,1,24.35,405,341,441,2014-01-30 20:16:21
 13 12,2,Test Site 1,1,1,24.35,397,271,410,2014-01-30 20:16:48
 14 13,2,Test Site 1,1,1,24.35,400,205,390,2014-01-30 20:17:19
 15 14,2,Test Site 1,1,1,24.35,406,253,387,2014-01-30 20:17:48
 16 15,2,Test Site 1,1,1,24.35,410,752,421,2014-01-30 20:18:18
 17 16,2,Test Site 1,1,1,24.4634,385,203,396,2014-01-30 20:18:47
 18 17,2,Test Site 1,1,1,24.4634,379,235,415,2014-01-30 20:19:18
 19 18,2,Test Site 1,1,1,24.575,412,448,359,2014-01-30 20:19:49
 20 19,2,Test Site 2,1,1,16.25,546,10,451,2014-02-07 19:45:46
 21 20,2,Test Site 2,1,1,17.2634,544,17,503,2014-02-07 20:03:24
Mettetal_2.csv[#1,m115,$115]                                    1,1/1965 Top
```

The first row contains the attributes information. And the values in each row should be seperated by comma.

Step 3. We only need the data gathered from the sensors, so before drawing the graphs we first need **remove some unnecessary columns** in the csv file(e.g. the ID, PI_ID, LOCATION columns).

Open the csv file using **Excel** in windows or **LibreOffice** in Ubuntu and delete unnecessary columns.



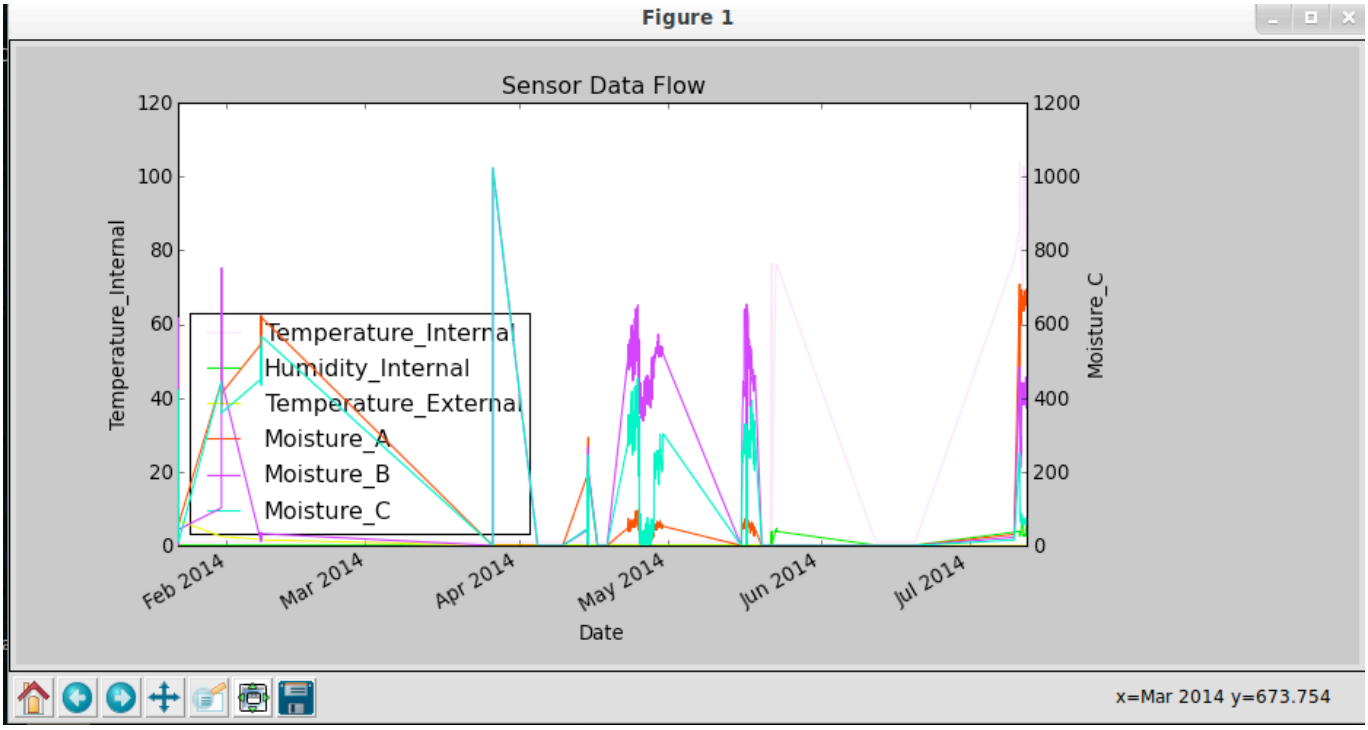
	A	B	C	D	E	F	G	H	I	J	K
1	id	PI_id	Location	Temperature_Internal	Humidity_Internal	Temperature_External	Moisture_A	Moisture_B	Moisture_C	Time	
2	1	2	Test Site 1	1	1	68	14	0	10	2014-01-22 04:30:12	
3	2	2	Test Site 1	1	1	68	284	369	281	2014-01-22 04:30:27	
4	3	2	Test Site 1	1	1	68	12	0	13	2014-01-22 04:30:42	
5	4	2	Test Site 1	1	1	67.8866	549	616	422	2014-01-22 04:30:57	
6	5	2	Test Site 1	1	1	67.8866	5	538	397	2014-01-22 04:31:14	
7	6	2	Test Site 1	1	1	67.6616	54	76	92	2014-01-22 04:33:42	
8	7	2	Test Site 1	1	1	67.6616	58	43	10	2014-01-22 04:36:28	
9	8	2	Test Site 1	1	1	24.575	443	102	444	2014-01-30 20:04:26	
10	9	2	Test Site 1	1	1	24.575	411	539	414	2014-01-30 20:15:18	
11	10	2	Test Site 1	1	1	24.35	402	345	405	2014-01-30 20:15:57	
12	11	2	Test Site 1	1	1	24.35	405	341	441	2014-01-30 20:16:21	
13	12	2	Test Site 1	1	1	24.35	397	271	410	2014-01-30 20:16:48	
14	13	2	Test Site 1	1	1	24.35	400	205	390	2014-01-30 20:17:19	
15	14	2	Test Site 1	1	1	24.35	406	253	387	2014-01-30 20:17:48	
16	15	2	Test Site 1	1	1	24.35	410	752	421	2014-01-30 20:18:18	
17	16	2	Test Site 1	1	1	24.4634	385	203	396	2014-01-30 20:18:47	
18	17	2	Test Site 1	1	1	24.4634	379	235	415	2014-01-30 20:19:18	
19	18	2	Test Site 1	1	1	24.575	412	448	359	2014-01-30 20:19:49	
20	19	2	Test Site 2	1	1	16.25	546	10	451	2014-02-07 19:45:46	
21	20	2	Test Site 2	1	1	17.2634	544	17	503	2014-02-07 20:03:24	
22	21	2	Test Site 2	1	1	17.375	623	32	536	2014-02-07 20:20:57	
23	22	2	Test Site 2	1	1	15.6884	487	22	478	2014-02-07 20:38:34	
24	23	2	Test Site 2	1	1	16.1384	516	36	486	2014-02-07 20:56:14	
25	24	2	Test Site 2	1	1	15.2384	464	17	434	2014-02-07 21:13:47	
26	25	2	Test Site 2	1	1	15.35	618	32	567	2014-02-07 21:31:27	
27	26	2	Test Site 2	1	1	0	0	0	0	2014-03-26 13:59:11	
28	27	2	Test Site 2	1	1	0	0	0	0	2014-03-26 13:59:25	
29	28	2	Test Site 2	1	1	0	0	0	0	2014-03-26 14:03:26	
30	29	2	Test Site 2	1	1	0	0	0	0	2014-03-26 14:03:40	
31	30	2	Test Site 2	1	1	0	0	1023	1023	2014-03-26 14:03:55	
32	31	2	Test Site 1	1	1	0	0	0	0	2014-04-04 14:40:59	
33	32	2	Test Site 1	1	1	0	0	0	0	2014-04-04 14:41:14	
34	33	2	Test Site 1	1	1	0	0	0	0	2014-04-04 14:41:29	
35	34	2	Test Site 1	1	1	0	0	0	0	2014-04-04 14:41:44	
36	35	2	Test Site 1	1	1	0	0	0	0	2014-04-04 14:41:59	

Please make sure that the column containing the Time information is located in the last column.

Step 4. Put the .csv file in the project folder. Run:

$sudo python genGraphs.py filename

Use real name of the file to substitute for the filename here. It will generate graphs automatically.



Sorry I didn't figure it out to use different y axises for different data. I can only use two y axises, the left one is for the first column in the csv file and the right one is for the last column. The colors of the lines are randomly chose. Change the value of loc in the ax.legend() function to change the position of the labels.

Since the data in this test is out of order, so the graph generated looks like a mess. Format the data before drawing the graph.

Tell me if you want to make any modifications.

PS: Thanks George, you taught me a lot during the past few months. I really enjoy the time here but it is time to say goodbye now. Hope I can see you in University of Michigan in the near future and good luck on your application for the master degree! I believe that you can make it!! Sorry I have to leave a few days earlier as I said for some personal reasons!

Thanks again! My skype account is “cheng.pingpan”, add me as a friend if you need me in the future.