Department of Electrical Engineering
City University of Hong Kong

EE4090/EE4097 Engineering Training
Module 2 (M2) Raspberry PI and IoT

Assignment

Assignment (IoT):
Implementation
of the
Environment Recorder

Stage 1:

Try to upload three environment measurement, temperature, humidity and pressure, into a new local database. Also, upload the ID of your Raspberry Pi. The result should be similar to the following:

Then, make a web page to monitor your new database. The result should be similar to the following:

Raspberry Pi Environment Recorder

ID	Date and Time	Temperature	Humidity	Pressure
1	2020-05-17 01:00:35	38.769	55.013	993.865
1	2020-05-17 01:00:40	38.731	54.926	993.886
1	2020-05-17 01:00:45	38.731	54.984	993.875
1	2020-05-17 01:00:50	38.491	54.800	993.852
1	2020-05-17 01:00:55	38.787	54.883	993.831

After finish your work, please demonstrate your database and web page to the technical staffs. Then, copy your code (.py and .php) to two .txt file and zip them, then upload to Canvas, name it "yourSID_EnvironmentRecorder1".

Stage 2:

Try to upload three environment measurements by triggering the joystick to the common database 1. Based on the following:

1) the database name is: **mydb** and table name is **trainingdb1**,

2) the variable name of the common database 1: `ID`, `rec_temp`, `rec_humi` and `rec_press`.

You can check out the data of the common database by entering the database IP address to your browser, you will notice the data from your fellow classmate as well.

After finish your work, please switch to table name: **trainingdb2** and demonstrate the result to the technical staffs. Then, copy your code (.py) to a .txt file and zip it, then upload to Canvas, name it "yourSID_EnvironmentRecorder2".

Stage 3:

a. Try to write a mobile application that monitor the data of the table **trainingdb2**. The IP address will be provided to you for extracting the data. The result should be similar to the picture:
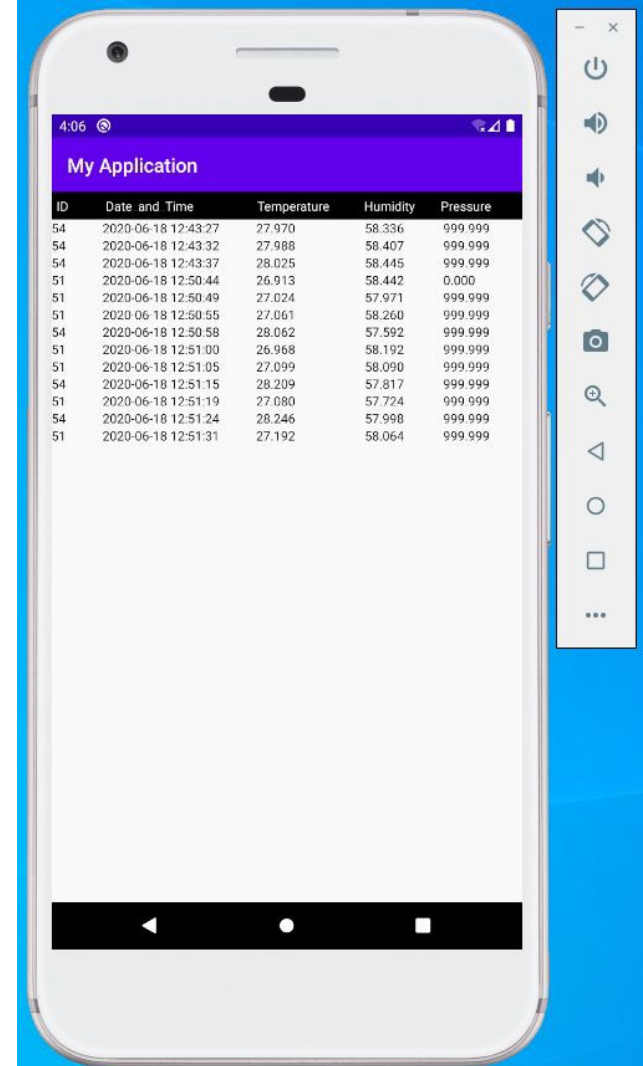
b. Try to add more functions to your mobile application.

    i. Add an update button to refresh the apps when new data is received.

    ii. Add a delete button to delete selected entries. This button should also delete the data inside the database. (You can try to delete the data in **trainingdb1**, but do **NOT** delete the data in **trainingdb2**)

    iii. Able to insert entries in the apps. The inserted data should also registered in the database.

    iv. Able to search entries by the ID. When you search an ID, only the entries with that ID shown.

    v. Able to sort each column in ascending order and descending order.

    vi. Notification function. A notification window will show up when new data received if the apps is closed.

After finish your work, demonstrate the result to the technical staffs. Then, copy your code to a .txt file and zip it, then upload to Canvas, name it "yourSID_RecorderApps".

Optional: You can try to download the application to your phone if you are using Android phone.