PIPSTA012 –RETRIEVING A PRINT-JOB FROM THE WEB

Contents

Revision History

Revision	Author	Date	Description
1.0	AH	27/11/14	First Release

Difficulty Level:

- There is no pre-requisite technical understanding to working through this tutorial

Time to Complete:

- This tutorial should not take more than half an hour to complete.

Who Should Read This Document

This tutorial is suitable for anyone wishing to demonstrate printing over the web as a basis for Internet of Things and/or Internet of People applications. This document also serves to complete the simple web-printing application spanning tutorials ***PIPSTA010-PIPST012***.

Warning

Although this is a primitive implementation, it is quick, simple to understand and portable between web hosting companies. This is not necessarily the most robust nor secure implementation, so please be aware of these limitations and DO NOT use this as the basis for anything other than a demonstration system!

Prerequisites

- It is expected that you have a fully-working, web-connected Raspberry Pi and Pipsta
- You should have the following settings from your web hosting company by having followed ***PIPSTA010- Simple WebPrinting – Pre-requisites*** :
  - Username
  - Password
  - Host IP address
  - Database name
  - Port
- You should have completed ***PIPSTA011 – Sending a Print-Job to the Web***

Additional Configuration Step

- Open LXTerminal
- At the $ prompt, enter:

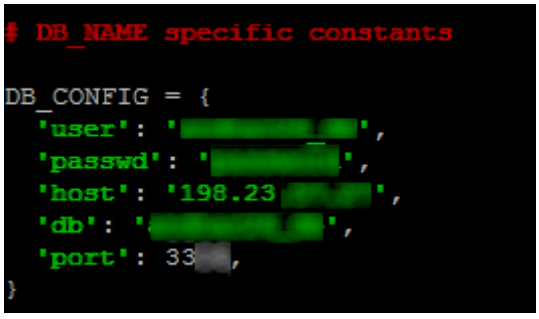
  sudo apt-get install python-mysqldb

  to install the library that allows Python to interact with MySQL databases.

Sending Data to Your Database

1) On the Pi, navigate to **/home/pi/pipsta/2_Web_Print**
2) In LXTerminal, enter:

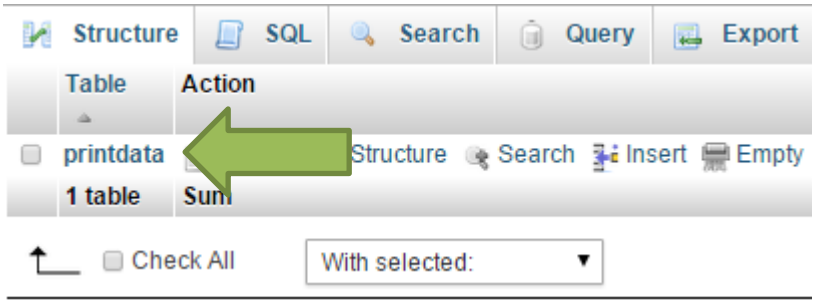
   nano WebPrint.py
3) Locating the following DB_CONFIG block, now enter the you details you used in the previous two tutorial (including the password *for the database)*, e.g.:



4) Save and exit nano in the usual way, i.e. **[CTRL]+[X], [Y], [return]**
5) Now, in LXTerminal, enter:

   cd ..

   python server.py start
6) If all is well, you should see the message(s) stored as print-job records *for your printer* printed to the paper roll now.
7) If all is *not* well, first check ALL of the details: user, password, host, db and port. Then check your internet connection is okay.
8) Once you have found the success message, go to FreeHostia, log-in, and in phpMyAdmin look at the *printdata* table by clicking on the *printdata* hyperlink:



9) Within the table, you should now see that the record(s) you inspected during ***PIPSTA011*** have been modified as follows:

+ Options

ID	print_data	printer_id	job_id
0	48656c6c6f2066726f6d20506970737461206f766572207468...		0

10) Note that the **printer_id** has been cleared.
11) Enter:

python server.py stop

to stop the server when you are finished.

How it Works

- The script **server.py** runs as a *daemon* (i.e. a program that runs in the background), and will periodically launch **WebPrint.py**.
- **WebPrint.py**. This script connects to, and checks the database to see if there are any jobs pending *for a printer of that serial number*. Note that the serial number is queried by the Pi using a special command issued to the printer.
- The **job_id** is used to uniquely identify that job, so –if a job is found— it is printed, and the **job_id** index is then used to identify the record just printed to **clear the printer_id**, preventing the job from being printed again the next time the database is polled.

You have now successfully used a daemon server to retrieve and print data from your database on the web.

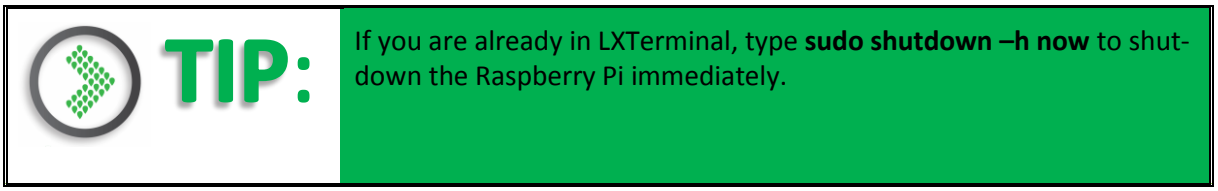
Extending the Tutorial

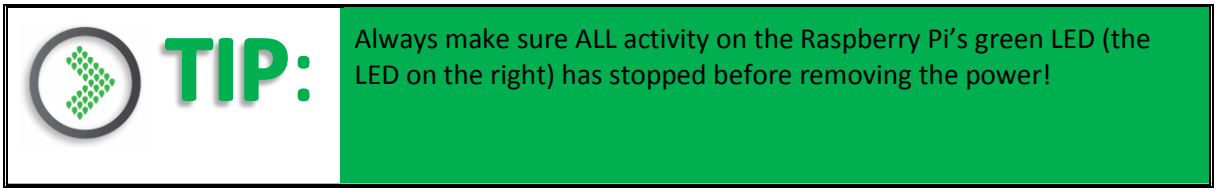
You can:

- Now run WebSend.py and the server simultaneously to see data going to the web and being retrieved.
- Swap serial numbers with a friend and have hard-copy 'chats'
- Discuss how the use of ASCII-encoded hex would permit the transmission of graphical data over the web, to print banners, QR-Codes etc.

Shutting Pipsta Down Safely

Whilst the printer is resilient when it comes to powering down, the Raspberry Pi must undergo a strict shutdown process to avoid corrupting the Micro SD card. The most straightforward method of doing this is to double-click the 'Shutdown' icon on the desktop.





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