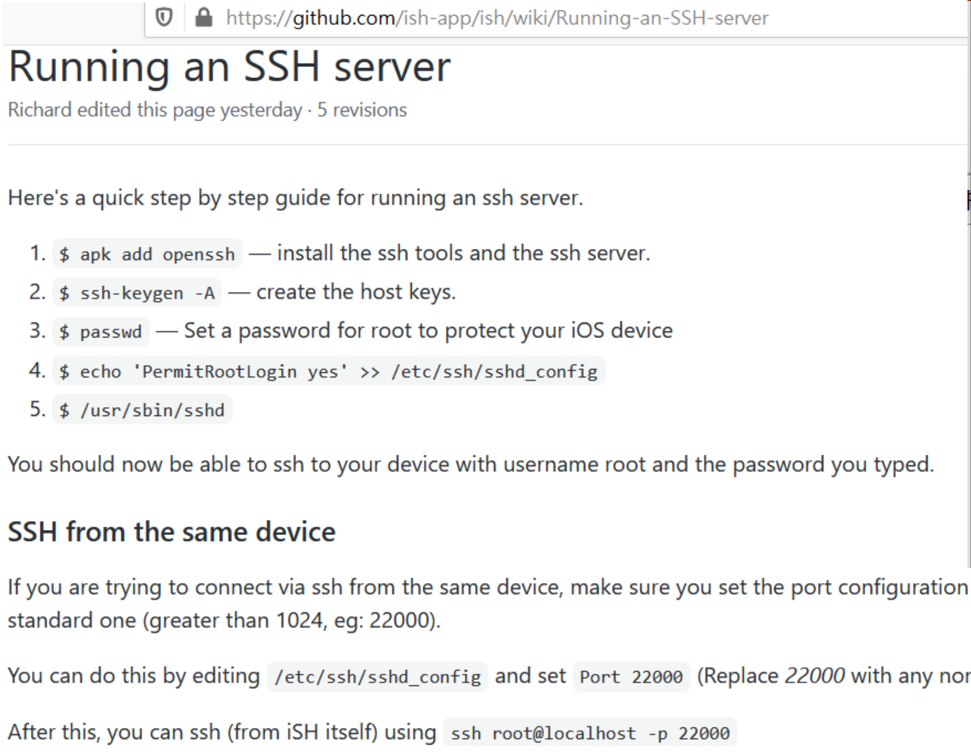
將 Adroid 手機變成 Linux Server

- 安裝 Termux app
  - pkg update ; pkg install openssh ; sshd
  - id (獲得使用者名字) ; passwd (設定密碼) ; ifconfig (獲得 ip 位址)
- client 端連線： ssh -p 8022 id@ip 位址
- 存取 Android 手機上的檔案 : termux-setup-storage
- 防止 android 系統進入 deep sleep 而導致程式執行緩慢
  - termux-wake-lock, termux-wake-unlock
- 定時執行任務
  - crond, crontab -e, crontab -l, pidof crond, kill

將 iPhone 手機變成 Linux Server



https://github.com/ish-app/ish/wiki/Running-an-SSH-server

Running an SSH server

Richard edited this page yesterday · 5 revisions

Here's a quick step by step guide for running an ssh server.

1. `$ apk add openssh` — install the ssh tools and the ssh server.
2. `$ ssh-keygen -A` — create the host keys.
3. `$ passwd` — Set a password for root to protect your iOS device
4. `$ echo 'PermitRootLogin yes' >> /etc/ssh/sshd_config`
5. `$ /usr/sbin/sshd`

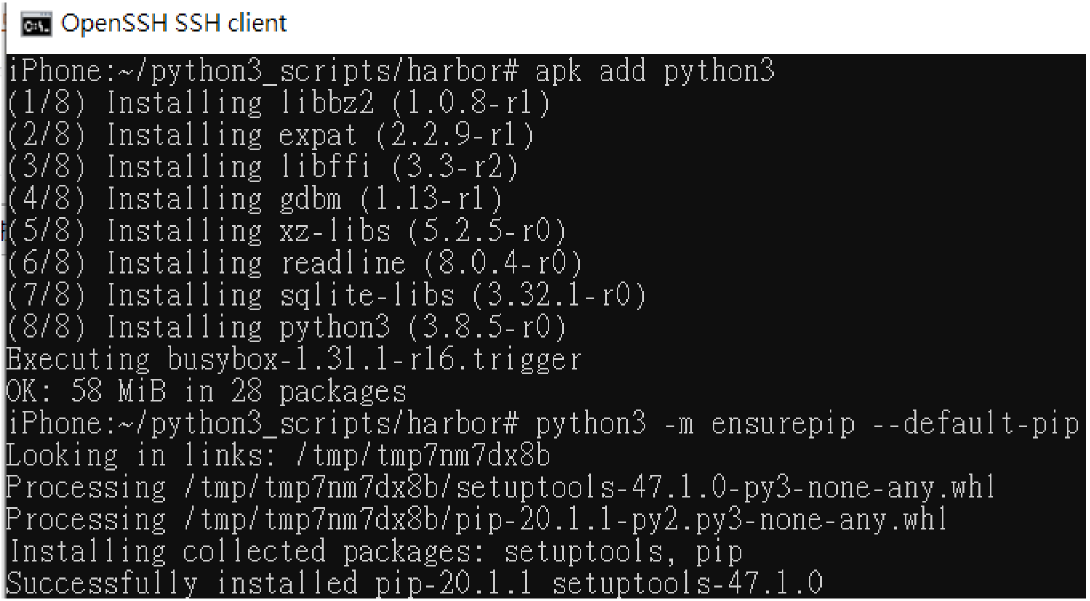
You should now be able to ssh to your device with username root and the password you typed.

SSH from the same device

If you are trying to connect via ssh from the same device, make sure you set the port configuration of sshd to use a non standard one (greater than 1024, eg: 22000).

You can do this by editing `/etc/ssh/sshd_config` and set `Port 22000` (Replace *22000* with any non-standard port).

After this, you can ssh (from iSH itself) using `ssh root@localhost -p 22000`

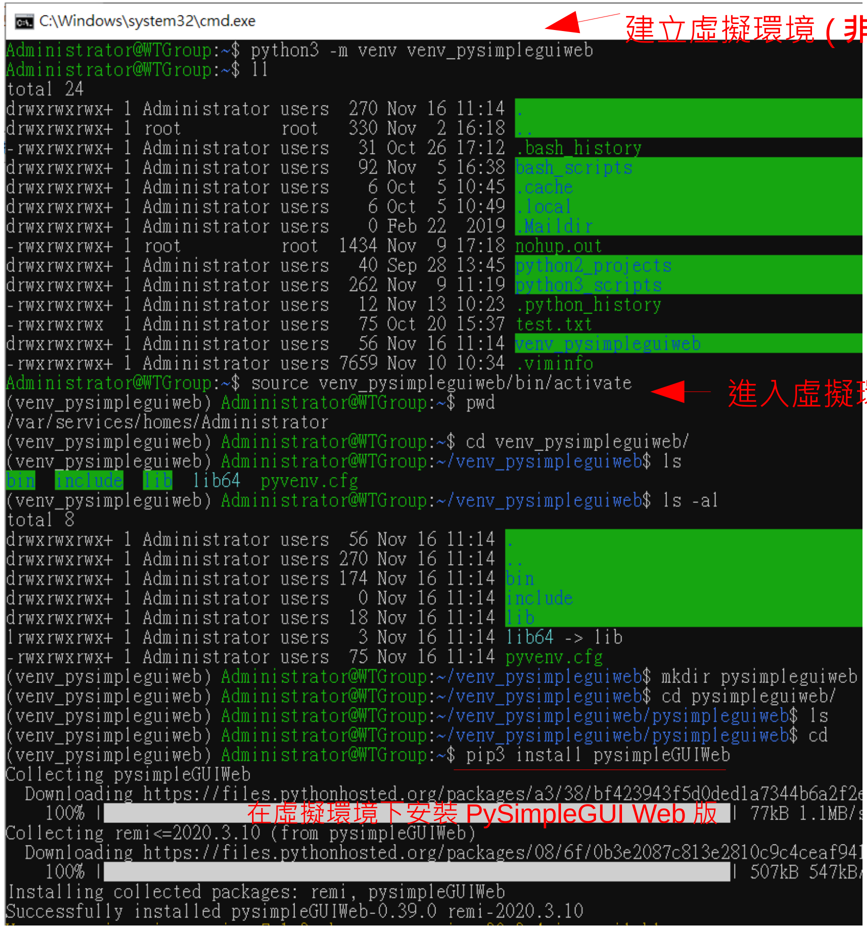


```
iPhone:~/python3_scripts/harbor# apk add python3
(1/8) Installing libbz2 (1.0.8-r1)
(2/8) Installing expat (2.2.9-r1)
(3/8) Installing libffi (3.3-r2)
(4/8) Installing gdbm (1.13-r1)
(5/8) Installing xz-libs (5.2.5-r0)
(6/8) Installing readline (8.0.4-r0)
(7/8) Installing sqlite-libs (3.32.1-r0)
(8/8) Installing python3 (3.8.5-r0)
Executing busybox-1.31.1-r16.trigger
OK: 58 MiB in 28 packages
iPhone:~/python3_scripts/harbor# python3 -m ensurepip --default-pip
Looking in links: /tmp/tmp7nm7dx8b
Processing /tmp/tmp7nm7dx8b/setuptools-47.1.0-py3-none-any.whl
Processing /tmp/tmp7nm7dx8b/pip-20.1.1-py2.py3-none-any.whl
Installing collected packages: setuptools, pip
Successfully installed pip-20.1.1 setuptools-47.1.0
```

設定 iPhone 螢幕永不關閉，以防 ssh 斷線

恢復 apk: wget -qO- http://dl-cdn.alpinelinux.org/alpine/v3.12/main/x86/apk-tools-static-2.10.5-r1.apk | tar -xz sbin/apk.static && ./sbin/apk.static add apk-tools && rm sbin/apk.static

將 GUI App 搬到 Linux Server 執行

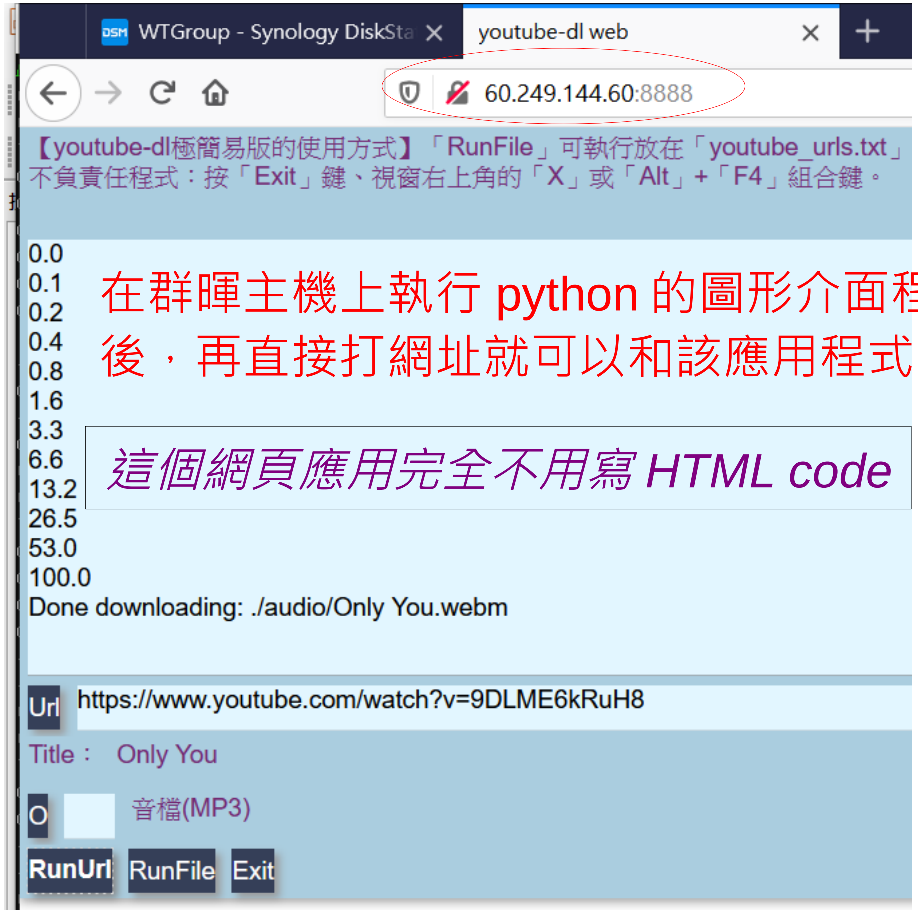


建立虛擬環境（非必要）

```
Administrator@WTGroup:~$ python3 -m venv venv_pysimpleguiweb
Administrator@WTGroup:~$ ll
total 24
drwxrwxrwx+ 1 Administrator users  270 Nov 16 11:14 .
drwxrwxrwx+ 1 root          root   330 Nov  2 16:18 ..
-rwxrwxrwx+ 1 Administrator users   31 Oct 26 17:12 .bash_history
drwxrwxrwx+ 1 Administrator users   92 Nov  5 16:38 bash_scripts
drwxrwxrwx+ 1 Administrator users    6 Oct  5 10:45 .cache
drwxrwxrwx+ 1 Administrator users    6 Oct  5 10:49 .local
drwxrwxrwx+ 1 Administrator users    0 Feb 22  2019 .Maildir
-rwxrwxrwx+ 1 root          root  1434 Nov  9 17:18 nohup.out
drwxrwxrwx+ 1 Administrator users   40 Sep 28 13:45 python2_projects
drwxrwxrwx+ 1 Administrator users  262 Nov  9 11:19 python3_scripts
-rwxrwxrwx+ 1 Administrator users   12 Nov 13 10:23 .python_history
-rwxrwxrwx  1 Administrator users   75 Oct 20 15:37 test.txt
drwxrwxrwx+ 1 Administrator users   56 Nov 16 11:14 venv_pysimpleguiweb
-rwxrwxrwx+ 1 Administrator users 7659 Nov 10 10:34 .viminfo
Administrator@WTGroup:~$ source venv_pysimpleguiweb/bin/activate
(venv_pysimpleguiweb) Administrator@WTGroup:~$ pwd
/var/services/homes/Administrator
(venv_pysimpleguiweb) Administrator@WTGroup:~$ cd venv_pysimpleguiweb/
(venv_pysimpleguiweb) Administrator@WTGroup:~/venv_pysimpleguiweb$ ls
bin  include  lib  lib64  pyvenv.cfg
(venv_pysimpleguiweb) Administrator@WTGroup:~/venv_pysimpleguiweb$ ls -al
total 8
drwxrwxrwx+ 1 Administrator users  56 Nov 16 11:14 .
drwxrwxrwx+ 1 Administrator users 270 Nov 16 11:14 ..
drwxrwxrwx+ 1 Administrator users 174 Nov 16 11:14 bin
drwxrwxrwx+ 1 Administrator users   0 Nov 16 11:14 include
drwxrwxrwx+ 1 Administrator users  18 Nov 16 11:14 lib
lrwxrwxrwx+ 1 Administrator users   3 Nov 16 11:14 lib64 -> lib
-rwxrwxrwx+ 1 Administrator users  75 Nov 16 11:14 pyvenv.cfg
(venv_pysimpleguiweb) Administrator@WTGroup:~/venv_pysimpleguiweb$ mkdir pysimpleguiweb
(venv_pysimpleguiweb) Administrator@WTGroup:~/venv_pysimpleguiweb$ cd pysimpleguiweb/
(venv_pysimpleguiweb) Administrator@WTGroup:~/venv_pysimpleguiweb/pysimpleguiweb$ ls
(venv_pysimpleguiweb) Administrator@WTGroup:~/venv_pysimpleguiweb/pysimpleguiweb$ cd
(venv_pysimpleguiweb) Administrator@WTGroup:~$ pip3 install pysimpleGUIWeb
Collecting pysimpleGUIWeb
  Downloading https://files.pythonhosted.org/packages/a3/38/bf423943f5d0ded1a7344b6a2f2e
    100% |████████████████████████████████| 77kB 1.1MB/s
Collecting remi<=2020.3.10 (from pysimpleGUIWeb)
  Downloading https://files.pythonhosted.org/packages/08/6f/0b3e2087c813e2810c9c4ceaf941
    100% |████████████████████████████████| 507kB 547kB/
Installing collected packages: remi, pysimpleGUIWeb
Successfully installed pysimpleGUIWeb-0.39.0 remi-2020.3.10
```

進入虛擬環境

在虛擬環境下安裝 PySimpleGUI Web 版



【youtube-dl極簡易版的使用方式】「RunFile」可執行放在「youtube_urls.txt」
不負責任程式：按「Exit」鍵、視窗右上角的「X」或「Alt」+「F4」組合鍵。

```
0.0
0.1
0.2
0.4
0.8
1.6
3.3
6.6
13.2
26.5
53.0
100.0
Done downloading: ./audio/Only You.webm
```

Url https://www.youtube.com/watch?v=9DLME6kRuH8

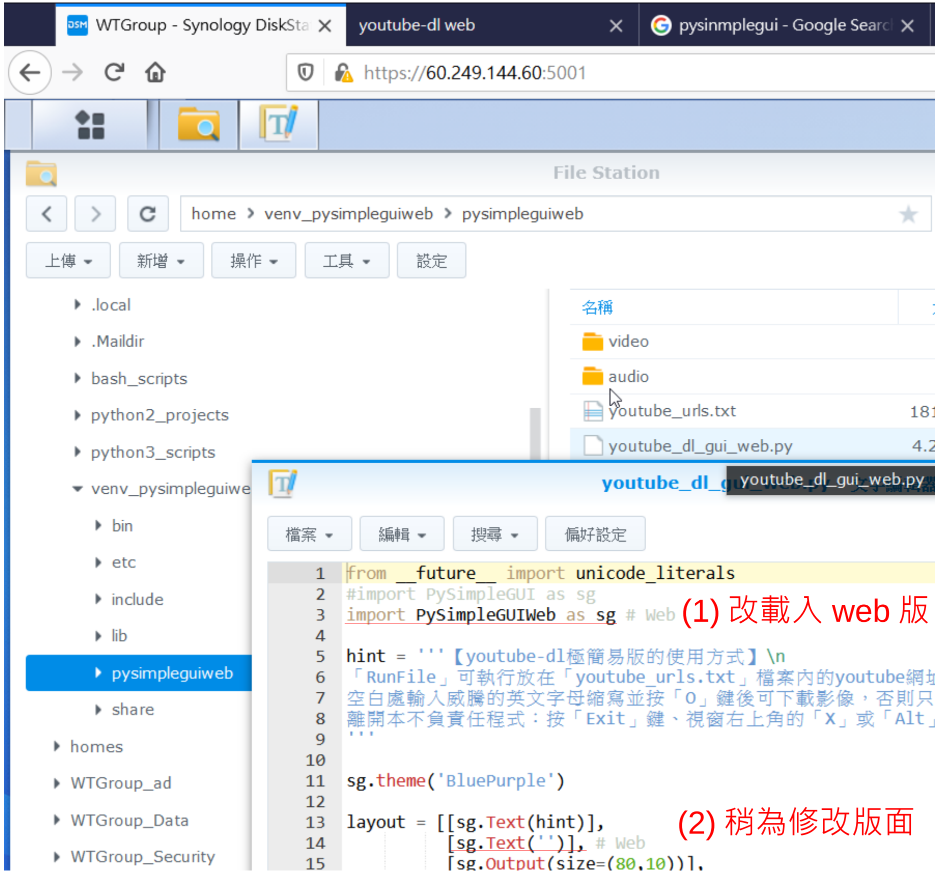
Title： Only You

O □ 音檔(MP3)

在群暉主機上執行 python 的圖形介面程式後，再直接打網址就可以和該應用程式溝通

這個網頁應用完全不用寫 HTML code

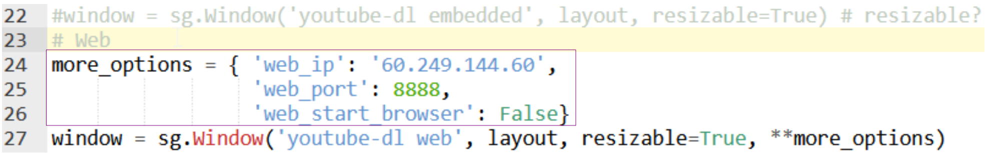
Web 版 GUI 程式幾乎和 PC 版一樣



```
from __future__ import unicode_literals
#import PySimpleGUI as sg
import PySimpleGUIWeb as sg # Web

hint = ''' 【youtube-dl極簡易版的使用方式】\n
「RunFile」可執行放在「youtube_urls.txt」檔案內的youtube網址
空白處輸入威騰的英文字母縮寫並按「O」鍵後可下載影像，否則只
離開本不負責任程式：按「Exit」鍵、視窗右上角的「X」或「Alt」
'''


sg.theme('BluePurple')

layout = [[sg.Text(hint)],
          [sg.Text('')], # Web
          [sg.Output(size=(80,10))],
```

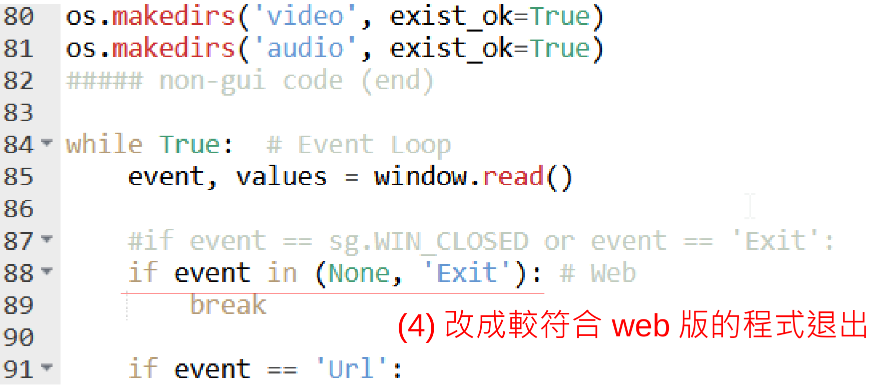
(1) 改載入 web 版 library

(2) 稍為修改版面



```
#window = sg.Window('youtube-dl embedded', layout, resizable=True) # resizable?
# Web
more_options = { 'web_ip': '60.249.144.60',
                 'web_port': 8888,
                 'web_start_browser': False}
window = sg.Window('youtube-dl web', layout, resizable=True, **more_options)
```

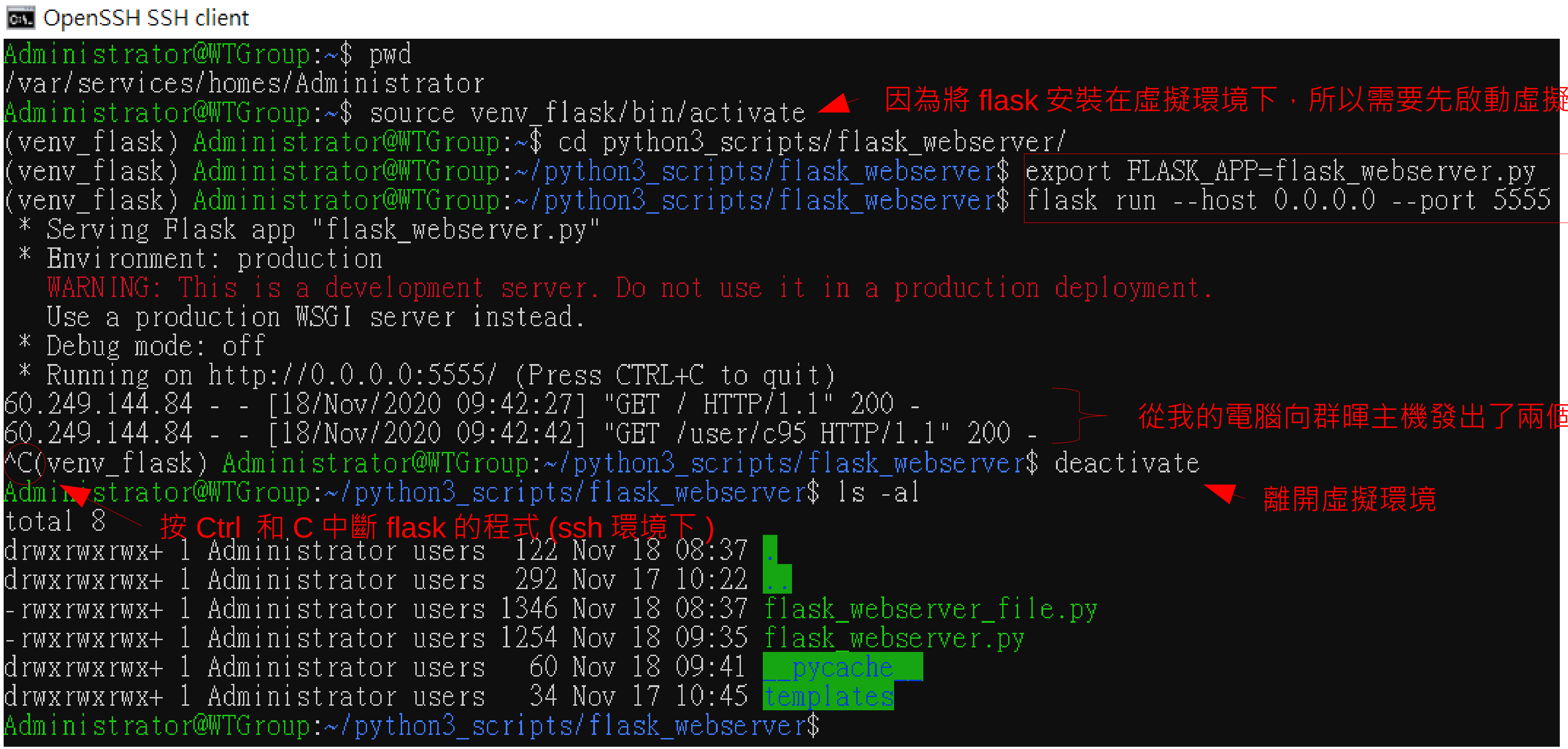
(3)Web 版主要新增 3 個圖形視窗控制選項



```
os.makedirs('video', exist_ok=True)
os.makedirs('audio', exist_ok=True)
##### non-gui code (end)

while True:  # Event Loop
    event, values = window.read()

    #if event == sg.WIN_CLOSED or event == 'Exit':
    if event in (None, 'Exit'): # Web
        break

    if event == 'Url':
```

(4) 改成較符合 web 版的程式退出

在群暉主機測試 flask 生成的網頁



```
Administrator@WTGroup:~$ pwd
/var/services/homes/Administrator
Administrator@WTGroup:~$ source venv_flask/bin/activate
(venv_flask) Administrator@WTGroup:~$ cd python3_scripts/flask_webserver/
(venv_flask) Administrator@WTGroup:~/python3_scripts/flask_webserver$ export FLASK_APP=flask_webserver.py
(venv_flask) Administrator@WTGroup:~/python3_scripts/flask_webserver$ flask run --host 0.0.0.0 --port 5555
 * Serving Flask app "flask_webserver.py"
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: off
 * Running on http://0.0.0.0:5555/ (Press CTRL+C to quit)
60.249.144.84 - - [18/Nov/2020 09:42:27] "GET / HTTP/1.1" 200 -
60.249.144.84 - - [18/Nov/2020 09:42:42] "GET /user/c95 HTTP/1.1" 200 -
^C(venv_flask) Administrator@WTGroup:~/python3_scripts/flask_webserver$ deactivate
Administrator@WTGroup:~/python3_scripts/flask_webserver$ ls -al
total 8
drwxrwxrwx+ 1 Administrator users  122 Nov 18 08:37 .
drwxrwxrwx+ 1 Administrator users  292 Nov 17 10:22 ..
-rwxrwxrwx+ 1 Administrator users 1346 Nov 18 08:37 flask_webserver_file.py
-rwxrwxrwx+ 1 Administrator users 1254 Nov 18 09:35 flask_webserver.py
drwxrwxrwx+ 1 Administrator users   60 Nov 18 09:41 __pycache__
drwxrwxrwx+ 1 Administrator users   34 Nov 17 10:45 templates
Administrator@WTGroup:~/python3_scripts/flask_webserver$
```

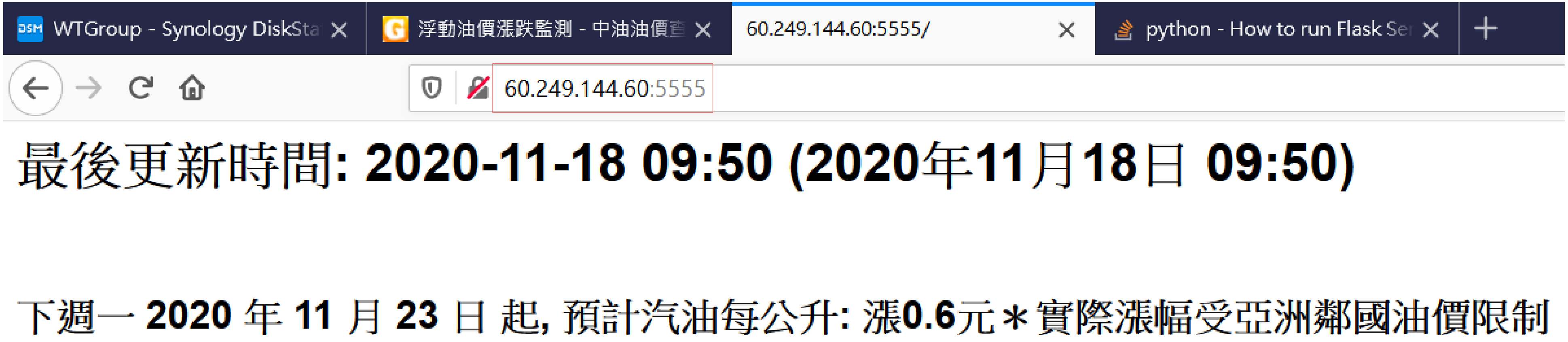
因為將 flask 安裝在虛擬環境下，所以需要先啟動虛擬環境

從我的電腦向群暉主機發出了兩個 http 請求

離開虛擬環境

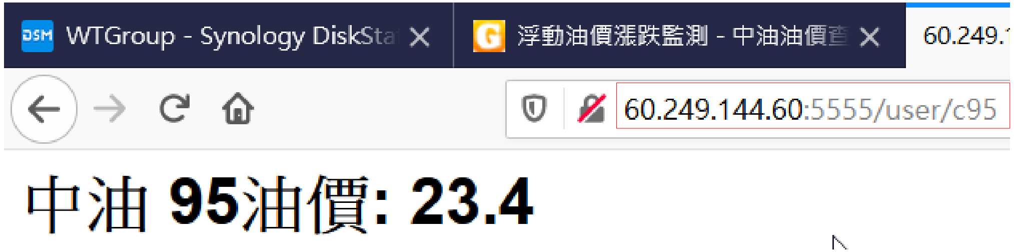
按 Ctrl 和 C 中斷 flask 的程式 (ssh 環境下)

透過瀏覽器和 flask 生成的網頁溝通

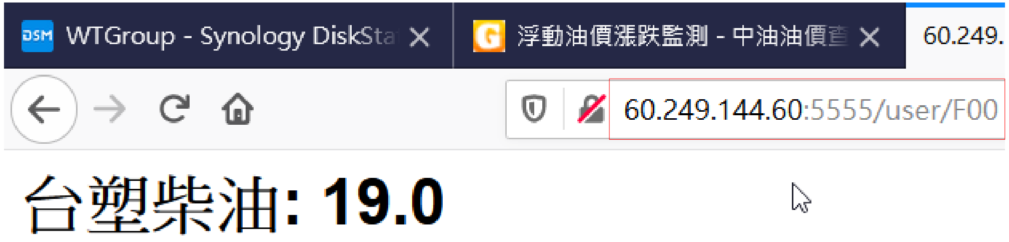

WTGroup - Synology DiskSta
浮動油價漲跌監測 - 中油油價查
60.249.144.60:5555/
python - How to run Flask Se
60.249.144.60:5555

最後更新時間: 2020-11-18 09:50 (2020年11月18日 09:50)

下週一 2020 年 11 月 23 日 起, 預計汽油每公升: 漲0.6元＊實際漲幅受亞洲鄰國油價限制


WTGroup - Synology DiskSta
浮動油價漲跌監測 - 中油油價查
60.249.1
60.249.144.60:5555/user/c95

中油 95油價: 23.4

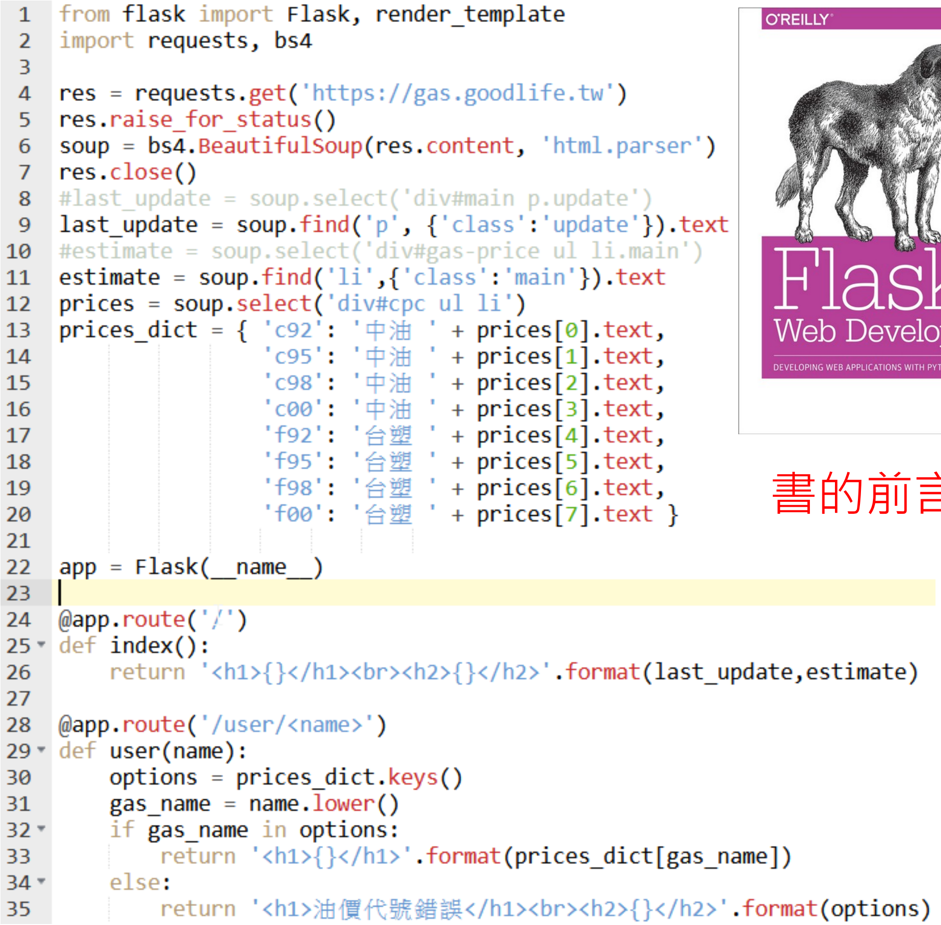

WTGroup - Synology DiskSta
浮動油價漲跌監測 - 中油油價查
60.249.
60.249.144.60:5555/user/F00

台塑柴油: 19.0

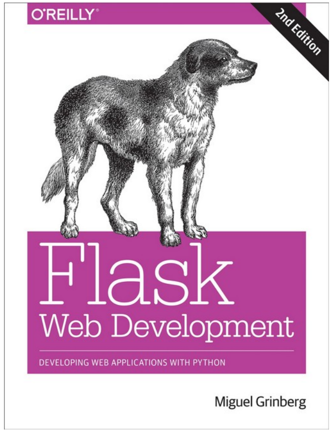
/user/c95

/user/F00

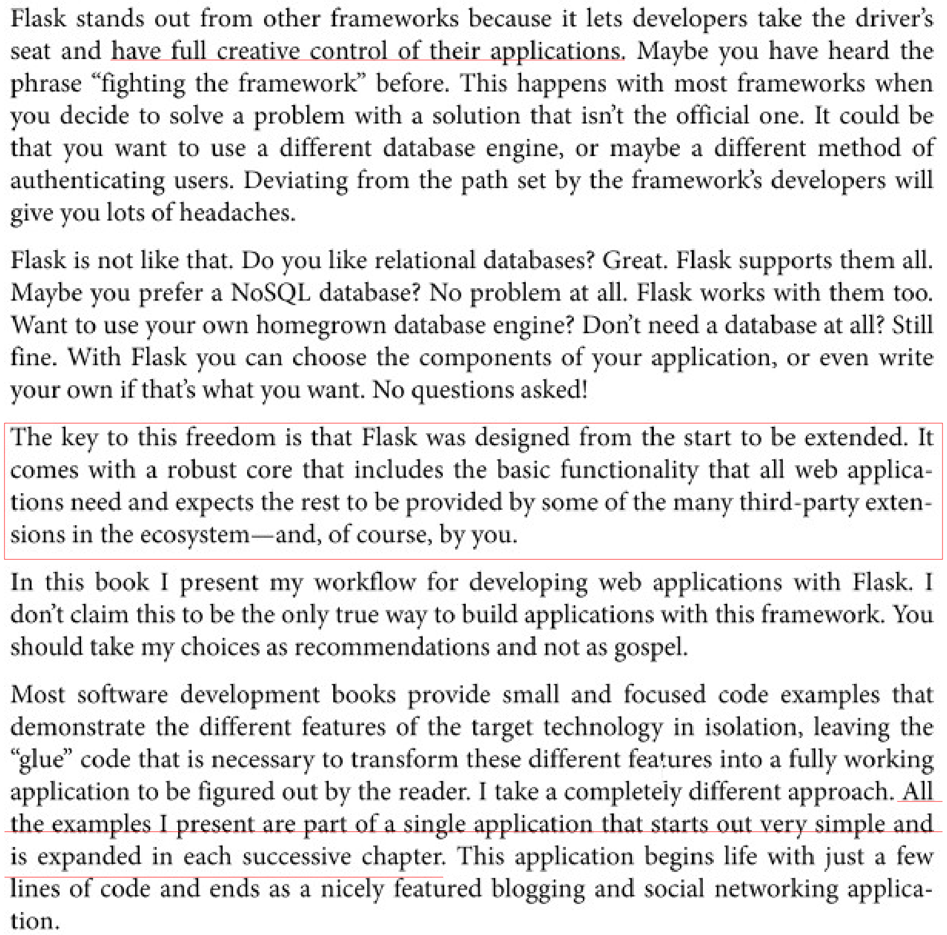
flask 網頁框架下的程式碼 (35 行)



```python
from flask import Flask, render_template
import requests, bs4

res = requests.get('https://gas.goodlife.tw')
res.raise_for_status()
soup = bs4.BeautifulSoup(res.content, 'html.parser')
res.close()
#last_update = soup.select('div#main p.update')
last_update = soup.find('p', {'class':'update'}).text
#estimate = soup.select('div#gas-price ul li.main')
estimate = soup.find('li',{'class':'main'}).text
prices = soup.select('div#cpc ul li')
prices_dict = { 'c92': '中油 ' + prices[0].text,
                'c95': '中油 ' + prices[1].text,
                'c98': '中油 ' + prices[2].text,
                'c00': '中油 ' + prices[3].text,
                'f92': '台塑 ' + prices[4].text,
                'f95': '台塑 ' + prices[5].text,
                'f98': '台塑 ' + prices[6].text,
                'f00': '台塑 ' + prices[7].text }

app = Flask(__name__)

@app.route('/')
def index():
    return '<h1>{}</h1><br><h2>{}</h2>'.format(last_update,estimate)

@app.route('/user/<name>')
def user(name):
    options = prices_dict.keys()
    gas_name = name.lower()
    if gas_name in options:
        return '<h1>{}</h1>'.format(prices_dict[gas_name])
    else:
        return '<h1>油價代號錯誤</h1><br><h2>{}</h2>'.format(options)
```



書的前言



Flask stands out from other frameworks because it lets developers take the driver's seat and have full creative control of their applications. Maybe you have heard the phrase "fighting the framework" before. This happens with most frameworks when you decide to solve a problem with a solution that isn't the official one. It could be that you want to use a different database engine, or maybe a different method of authenticating users. Deviating from the path set by the framework's developers will give you lots of headaches.

Flask is not like that. Do you like relational databases? Great. Flask supports them all. Maybe you prefer a NoSQL database? No problem at all. Flask works with them too. Want to use your own homegrown database engine? Don't need a database at all? Still fine. With Flask you can choose the components of your application, or even write your own if that's what you want. No questions asked!

The key to this freedom is that Flask was designed from the start to be extended. It comes with a robust core that includes the basic functionality that all web applications need and expects the rest to be provided by some of the many third-party extensions in the ecosystem—and, of course, by you.

In this book I present my workflow for developing web applications with Flask. I don't claim this to be the only true way to build applications with this framework. You should take my choices as recommendations and not as gospel.

Most software development books provide small and focused code examples that demonstrate the different features of the target technology in isolation, leaving the "glue" code that is necessary to transform these different features into a fully working application to be figured out by the reader. I take a completely different approach. All the examples I present are part of a single application that starts out very simple and is expanded in each successive chapter. This application begins life with just a few lines of code and ends as a nicely featured blogging and social networking application.