

Hacking the Home 2013

Brady Marks - furiousgreencloud@gmail.com - +1.604.727.1325 sms/vox - <http://furiousgreencloud.com/>

Simon Lyons - simon@makermobile.org - <http://makermobile.org/>

Python Cheat Sheet

Main Points:

- Python is a programming language we will use, all python programs are in files, called <something>.py
- Python like bash (aka The Command Line) allows you to do a bunch of simple actions, and to combine them into complex programs
- We will use the “Geany” application which is found on the PI’s desktop, to edit and run our programs from.

Running Python

```
sudo python blink.py
```

Elements

Element	Description	Example(s)
<i>Modules</i>		
import module[.attribute] as name	Bring extra functions into Python	<pre>import RPi.GPIO as GPIO import os import time</pre>
from module.[attribute] import name	Bring extra function in and make them not need a prefix.	<pre>from RPi.GPIO import * from time import sleep</pre>
<i>Basic Instructions</i>		
print (text)	Print out text to screen	<pre>print "Hello Everyone"</pre>
raw_input (prompt)	Get in text from user	<pre>age = raw_input("Hello, What is your age? ")</pre>
setmode (BOARD BCM)	Tell python, if you want to use the pin numbers counting from P1 on the BOARD or the pin numbers printed on the PI Cobbler determined by the BCM.	<pre>setmode(BCM)</pre>
setup (pinNo, IN OUT)	Set a pin, to do ouput or input	<pre>setup(25, OUT)</pre>
output (pinNo, value)	set and output pin to hi or lo	<pre>output(ledPin, HIGH)</pre>
sleep (seconds)	wait for a bit	<pre>sleep(0.5)</pre>

<i>Loops</i>		
while condition : instructions to loop	Loop while condition is true	<code>while True : blink()</code>
for i in group : do something with i	Loop over a list, or a fixed number of times.	<code>for count in range(4) : print(count)</code>
<i>Conditionals</i>		
if condition : instruction to do if condition true else : instructions to do if condition is false	Make decisions on what to do next.	<code>if (age <= 19 and age > 12) : print("Teen") elif age < 12 : print("Child") else : print("Adult")</code>
<i>Functions</i>		
def function_name() : function body	Define a reusable function	<code>def area(radius) : return pi * r * r</code>