

Python for IT specialists tasks automation

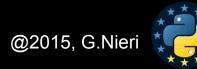
EuroPython 2015, Bilbao



Talk contents

We'll show tools and scripts to automate different common tasks using Python scripts.

This talk is just a starting point for your new life as automation addicted



Who is Gianluca Nieri?

- Software developer;
- Amazon AWS Architect and DevOps;
- Technical writer;
- Automation&Python addicted;

Web: <u>www.gianlucanieri.com</u> Mail: gianluca@gianlucanieri.com Twitter: @gianx

@2015, G.Nieri



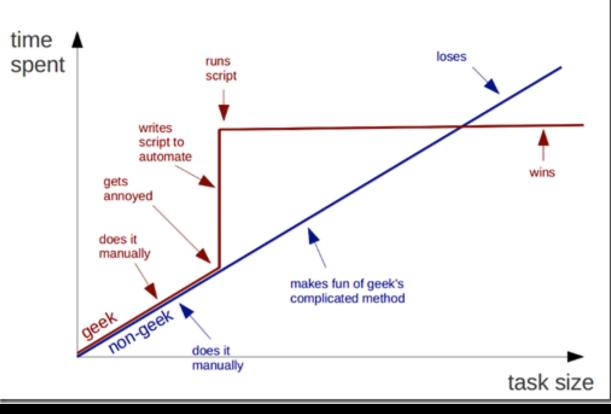
Introduction - Why automation?

Geeks and repetitive tasks

Save time

No errors

Less disctractions



(found on Intermnet, I apologize with the author for not citating him)



Introduction – When automate?

Three factors:

- Single execution time;
- Run frequency;
- Accuracy.

(found on Intermnet, I apologize with the author for not citating him)



Introduction – What can you automate?

Almost everything:

... string manipulation... ... information retriving... ... data manipulation... ... image management... ... document management...

Whatever you want!



Introduction - The tools

- Python alone is not enough
- Writing a UI for interaction is not handy;
- You need third-party tools to manage interaction, activation, results handling, etc.



Tools – What are these tools?

- "Line command tools": a useful tool to launch command, macros, action without leaving your workflow;
- "Text expansion tools": expand text snippets and automatically retrive informations
- "File trigger tools": do action based on filesystem objects, files, folder, etc.



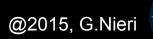


Tools - What software do we need?

Tools	OS X	Linux	Windows
Command line	 Alfred Keyboard Maestro 	 Synapse Mutate Kupfer Gnome Do 	 Listary Launcy
Text expansion	• Text expander	 AutoKey 	 Autotext Phrase expander
FS Triggers	• Hazel	 Maid 	?????

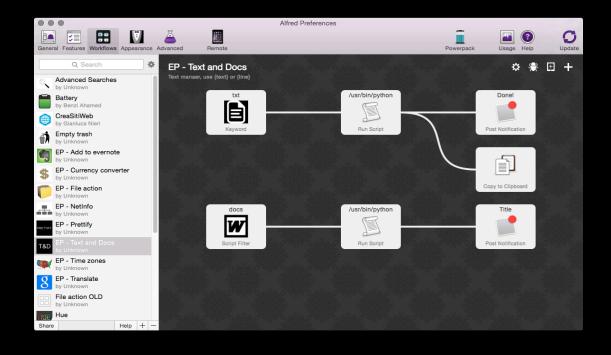
Alfred (http://www.alfredapp.com/)





"Create immensely powerful workflows by connecting keywords, hotkeys and actions together to extend Alfred to do amazing things without writing a single line of code!"

Casa casa, abitazione, dimora, famiglia, focolare, tetto, ospizio, ricovero, nido, asilo, a casa, direttamente, do... maison maison maison, domicile, foyer, pays, habitation, gte, pays natal, maison de retraite, but, la maison, raider Haus Haus, Heimat, Heim, Zuhause, Inland, Daheim, Wohnheim, Walsenhaus, Anstalt, Ziel, Heim-, heimisch, p... Casa casa, hogar, morada, domicilio, cludad natal, patria, habitat, ambiente, meta, madre, residencia, asilo, pu...



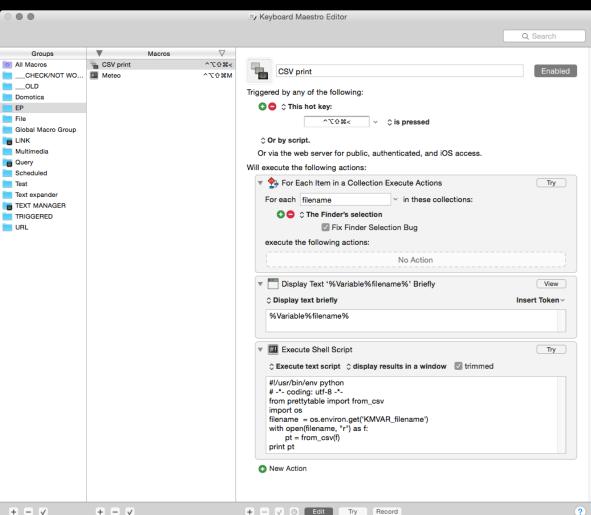
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Keyboard maestro

(http://www.keyboardmaestro.com/)

"Keyboard Maestro can help improve almost every aspect of using your Mac [...] like typing your email address, or going to Gmail or Facebook, launching Pages, or duplicating a line, all take time and add frustration"



Try





Text expander (https://smilesoftware.com/TextExpander)

te

"TextExpander saves your fingers and your keyboard, expanding custom keyboard shortcuts into frequently-used text and pictures"

	TextExpander			
+	Q Filtro			
Nuovo Snippet Nuovo Group Rimuovi	Statistica Preferenze Filter			
▶ 🛅 Generic	Contenuti: script shell			
Correttore ortografico	#l/usr/bin/python			
▶ 📄 Boilerplates	import subprocess			
▶ 📄 Data e ora	def myencode(text):			
Connections	charsets = ['US-ASCII', 'ISO-8859-1', 'UTF-16'] for charset in charsets:			
▶ Code	try:			
Characters	out = text.decode(charset).encode('utt8') except UnicodeError, e:			
▶ 🔄 Web dev	pass			
Lists management	else: return out return ''.join[[i for i in text if (<u>ord(</u> i) < 128 and <u>ord(</u> i) >31)]])			
Prettify				
► TEMP	def getClipboardData():			
Snippet Suggeriti	p = subprocess.Popen(('pbpaste'), stdout=subprocess.PIPE) retcode = p.wait() data = p.stdout.read() return data			
▶ 📄 Markdown				
Euro Python				
Get Chrome LINK html (,,clinkh)	cb = myencode(getClipboardData())			
Get Chrome LINK md ,,clinkm	print '\n'.join(["'"+x.strip()+"'," for x in cb.split('\n') if x != ""])[:-1]			
Get Chrome shorten URL ,,cshort				
Get Chrome TITLE ,,ctitle				
Get Chrome URL ,,curl				
List 2 SQL (,,listsql)				
UrlDecode ,,urldecode				
UrlEncode ,,urlencode				
	I▼ T▼ Itich. List 2 SQL			
	Abbrev.: Sensibile al Maiuscolo (aB, Ab differiscono)			
+ 🗘 🗉	"listsql			



Haze (http://www.noodlesoft.com/hazel.php)



"Hazel watches whatever folders you tell it to, automatically organizing your files according to the rules you create."

	Hazel	Q Ricerca
 Folder	s Trash Info	
Folders	Rules	
Crivania Scrivania	Upload images	
RESIZE		
Eun Fun		
Ownloads		
CDN		
	* - /	
	Throw away:	
+ - •	Duplicate files	Week 🗘
		?

	CDN	
Name:	Upload images	6
fall	of the following conditions are met	
Kind	 ○) (is ○) (Image ○) 	-+
Do the f	ollowing to the matched file or folder:	
Run	shell script	-+
Dis	Shell: /usr/bin/python	-+
?	Use sys.argv[1] to refer to the file being processed.) ок
_	<pre>#!/usr/bin/env python # -*- coding: utf-8 -*-</pre>	
	import sys from ftplib import FTP import os	
	<pre>def setClipboardData(data):</pre>	



Some ideas...

Commands	Text expansion	Automated procedures
Simple tasks • Translate; • Meteo; • CSV display; • Currency; • Timezones; • Net infos; File actions • Image manipulation; • Copy file names; • Quick notes; Advanced • Documenting; • Text manager;	 URL shortening; Pretty printing; Minifying (simple); List to sql; Encode/decode text (url/html); Links; 	 Batch image processing; Batch upload&share



Net info

netinfo	٥
4lo0} 127.0.0.1	
{en0} 10.0.0.54 [54:26:96:cd:d6:83]	
Fastweb Disconnected	
Bluetooth DUN 2 Disconnected	
Fastweb-Cernova Disconnected	



... in depth...

Input is passed to a script via a {query} placeholder;

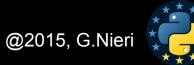
- Script filter (simplified)

```
<?xml version="1.0"?>
<items>
<item uid="1" arg="VALUE" valid="YES" autocomplete="option">
<title>Option1</title>
<subtitle>First option</subtitle>
<icon>icon.png</icon>
</item>
</items>
```



Time zones





Translate





Quick notes

nnn This is a note test



Crea nota in evernote Crea e non mostra una nota in evernote



Currency converter

cur 1000 eur	¢
1090.4 USD	
697.5 GBP	
135150.0 JPY 135.15	



Text manager

txt line+"
"

E Text manager Use {text} or {line}



Pretty print

prettify	0
XML XML	
JSON JSON	
SQL SQL	
MIN minify	

Documenting



docs 1234	¢
PID Inserisci il tuo nome	

docs 1234>gianluca	¢
AUTHOR Inserisci il tuo nome	





PNG

Recipient-BITSTREAM ATM Asimmetrico Flat /Users/gianx/Dropbox/Pictures/Screenshot/Recipient-BITSTREAM ATM Asimmetrico Flat.png

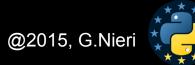
🖂 Email

Copy Path to Clipboard

Image manipulation

- Copy file names to clipboard with path
- Copy file names to clipboard without path
- Open in sublime
- Resize
- Rotate clockwise
- Rotate counterclockwise
- Remove DS_STORE
- Create note in Evernote

Size: 27.4 KB Opens in: Preview.app Created: 10/mar/2015 17:21 Modified: 10/mar/2015 17:21



Copy file names

20150317-194643 /Users/gianx/Dropbox/Pictures/Screenshot/20150317-194643.png	
🖂 Email	
Copy Path to Clipboard	
Copy file names to clipboard with path	
Copy file names to clipboard without path	Le tais prenotazione vian sono nome Anno se trangge tino manuta hazz negle zono
Open in sublime	Ref13 canes 1 Ouri 24444 Canese (Tarth Intelevale
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Rotate clockwise	Evertal IT Taxare Dialityateria Tasta A. Bootomika Awakare C. K. H. B. Dork M. E. A. Alakare C. K. H.
F Rotate counterclockwise	Testsymmetrie 264,00 € 344,08
Remove DS_STORE	
🔄 Create note in Evernote	
	Size: 57.3 KB
	Opens in: Preview.app
	Created: 17/mar/2015 19:46
	Modified: 17/mar/2015 19:46



Meteo

	Keyboard Maestro - Shell Script Results	
The output of the te	ext script is:	
2015-07-16 Giove	edi	
	uvoloso] few clouds, 0 mm di pioggia, 32 gradi, 65% di umidita'	
	ereno] sky is clear, 0 mm di pioggia, 33 gradi, 54% di umidita'	
	ereno] sky is clear, 0 mm di pioggia, 31 gradi, 53% di umidita'	
	uvoloso] few clouds, 0 mm di pioggia, 25 gradi, 71% di umidita'	
2015-07-17 Vene		
	ereno] sky is clear, 0 mm di pioggia, 21 gradi, 84% di umidita'	
	ereno] sky is clear, 0 mm di pioggia, 25 gradi, 72% di umidita'	
	ereno] sky is clear, 0 mm di pioggia, 31 gradi, 61% di umidita' ereno] sky is clear, 0 mm di pioggia, 33 gradi, 46% di umidita'	
	uvoloso] few clouds, 0 mm di pioggia, 33 gradi, 40% di umidita'	
18:00:00 [N	luvoloso] few clouds, 0 mm di pioggia, 30 gradi, 44% di umidita'	
	ereno] sky is clear, 0 mm di piogqia, 25 gradi, 44% di umidita'	
2015-07-18 Sabat		
	ereno] sky is clear, 0 mm di pioggia, 20 gradi, 76% di umidita'	
	ereno] ský is clear, 0 mm di pioggia, 25 gradi, 65% di umidita'	
09:00:00 [S	ereno] sky is clear, 0 mm di pioggia, 30 gradi, 53% di umidita'	
12:00:00 [N	uvoloso] few clouds, 0 mm di pioggia, 33 gradi, 46% di umidita'	
	uvoloso] few clouds, 0 mm di pioggia, 34 gradi, 43% di umidita'	
18:00:00 [N	uvoloso] few clouds, 0 mm di pioggia, 32 gradi, 45% di umidita'	
	uvoloso] few clouds, 0 mm di pioggia, 25 gradi, 72% di umidita'	
2015-07-19 Domen		
	ereno] sky is clear, 0 mm di pioggia, 22 gradi, 72% di umidita'	
	ereno] sky is clear, 0 mm di pioggia, 26 gradi, 63% di umidita'	
	ereno] sky is clear, 0 mm di pioggia, 31 gradi, 49% di umidita' 'ioggia] light rain, 0 mm di pioggia, 34 gradi, 45% di umidita'	
	rioggia] light rain, 0 mm di pioggia, 33 gradi, 41% di umidita'	
	ereno] sky is clear, 0 mm di pioggia, 32 gradi, 43% di umidita'	
	erenoj sky is clear, 0 mm di ploggia, 25 gradi, 67% di umidita'	



#6 - CSV Display

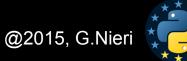
			+	++
Year	Make	Model	Description	Price
1997	Ford	E350	ac, abs, moon	3000.00
1999	Chevy	Venture "Extended Edition"	1	4900.00
1999	Chevy	Venture "Extended Edition, Very Large"		5000.00
1996	Jeep	Grand Cherokee	MUST SELL!	4799.00
i			air, moon roof, loaded	i i

OK



Links

,,curl ,,ctitle ,,clinkm ,,clinkh



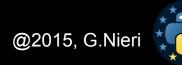
Url shortening

,,cshort



List to SQL

,,listsql



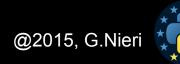
Encode/Decode text

,,urlencode ,,urldecode



Batch image processing

Nome	^	Data di modifica
💻 img1.jpg		oggi 13:10
img2.jpg		oggi 13:09
🔻 📃 out		oggi 13:14
img1_150x134.jpg		oggi 13:14
img1_640x480.jpg		oggi 13:14
img2_150x134.jpg		oggi 13:14
img2_640x480.jpg		oggi 13:14
img2_1024x768.jpg		oggi 13:14
img2_1024x768.jpg		oggi 13:14



Batch upload and share

	CDN		
Name:	Upload images		6
lf all	of the following cor	nditions are met	
Kin	d 🗘 is	s 🗘 (Image 🗘	- +
Do the	following to the matched f	file or folder:	
			0.0
Rur	n shell script	embedded script SEdit script	- +
Rur			
	Shell: /usr/bin/python		
Dis	Shell: /usr/bin/python Use sys.argv[1] to refer #!/usr/bin/env pyt	or to the file being processed.	
Dis	Shell: /usr/bin/python Use sys.argv[1] to refe #!/usr/bin/env pyt # -*- coding: utf- import sys	thon -8 -*-	
Dis	Shell: /usr/bin/python Use sys.argv[1] to refer #!/usr/bin/env pyt # -*- coding: utf- import sys from ftplib import	thon -8 -*-	
Dis	Shell: /usr/bin/python Use sys.argv[1] to refer #!/usr/bin/env pyt # -*- coding: utf- import sys from ftplib import import os	r to the file being processed. thon -8 -*- t FTP	
Dis	Shell: /usr/bin/python Use sys.argv[1] to refer #!/usr/bin/env pyt # -*- coding: utf- import sys from ftplib import import os def setClipboardDa	r to the file being processed. thon -8 -*- t FTP	



Conclusion

Where to go from here?

- Think which are the most repetitive/sensitive action you do on a daily basis and try to automate them, you literraly have no limits;
- Learn about automation on mobile (Android: Tasker, iOS: Workflow, Pythonista, Drafts);



Conclusion

Thanks everybody!

You can find all the scripts here: <u>http://www.gianlucanieri.com/ep2015/</u>

If you want you can contact me at: <u>gianluca@gianlucanieri.com</u>