



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;

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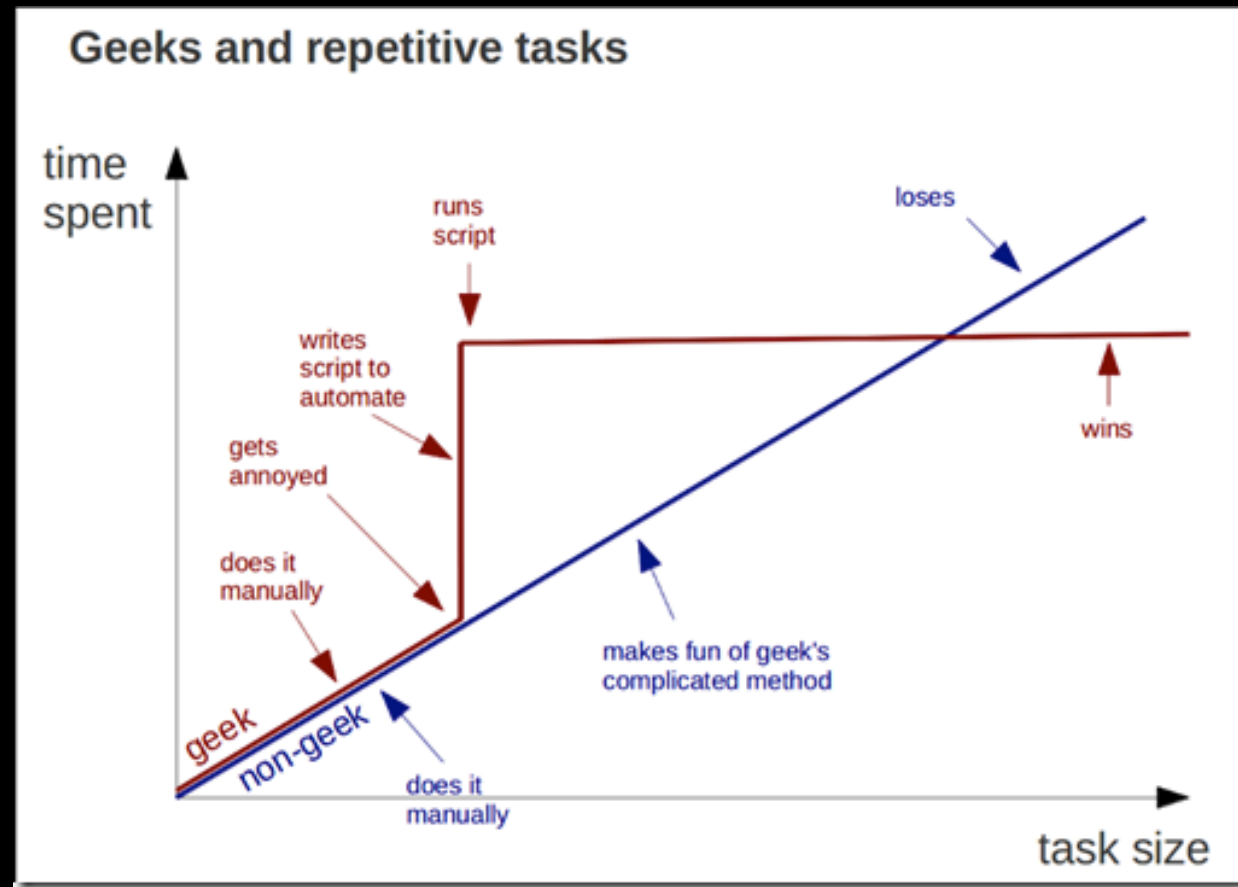


Introduction - Why automation?

Save time

No errors

Less distractions



(found on Internet, I apologize with the author for not citing him)



Introduction – When automate?

Three factors:

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

(found on Internmet, I apologize with the author for not citing 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 retrieve 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	<ul style="list-style-type: none">• Alfred• Keyboard Maestro	<ul style="list-style-type: none">• Synapse• Mutate• Kupfer• Gnome Do	<ul style="list-style-type: none">• Listary• Launcy
Text expansion	<ul style="list-style-type: none">• Text expander	<ul style="list-style-type: none">• AutoKey	<ul style="list-style-type: none">• Autotext• Phrase expander
FS Triggers	<ul style="list-style-type: none">• Hazel	<ul style="list-style-type: none">• Maid	?????

Alfred

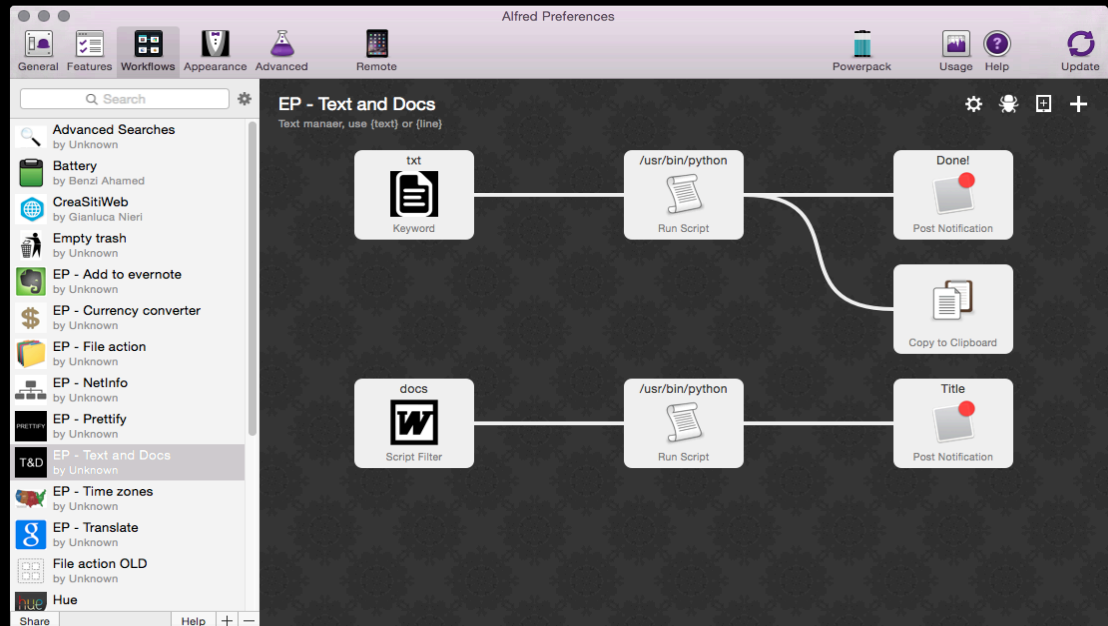
(<http://www.alfredapp.com/>)



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“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!~~”



Keyboard maestro

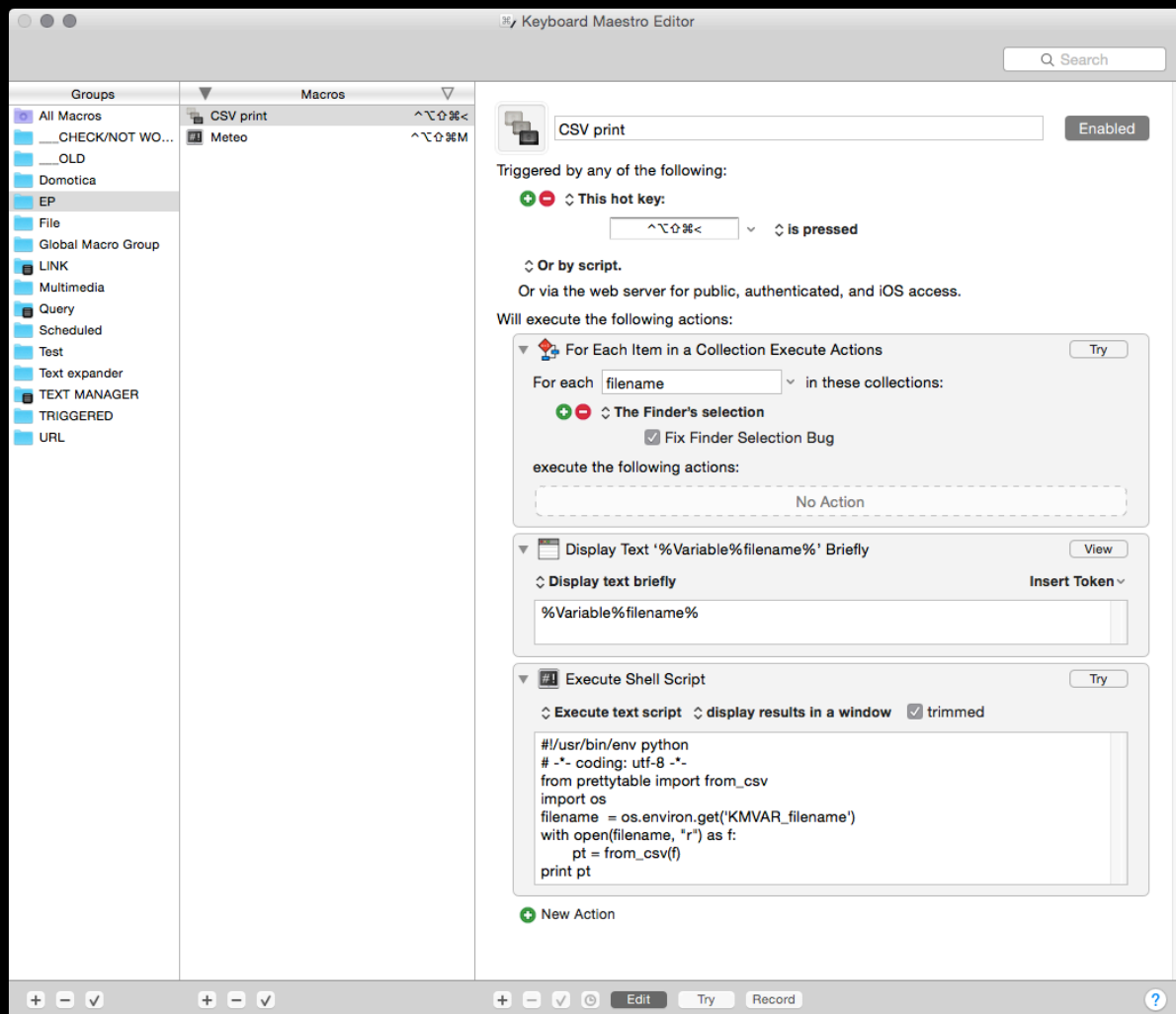
(<http://www.keyboardmaestro.com/>)



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“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”



Text expander

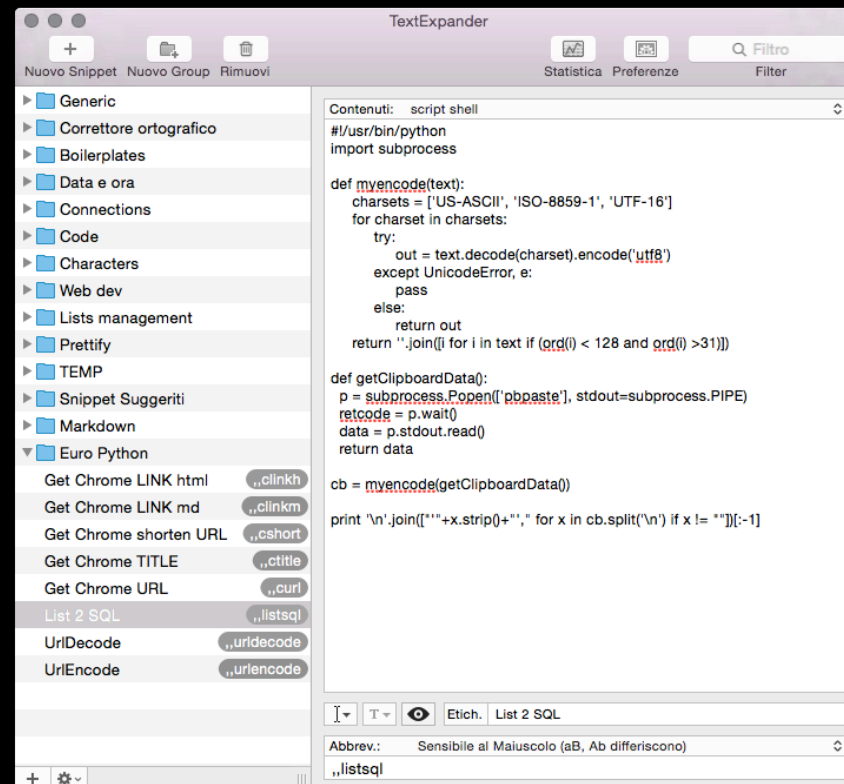
(<https://smilesoftware.com/TextExpander>)



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



Hazel

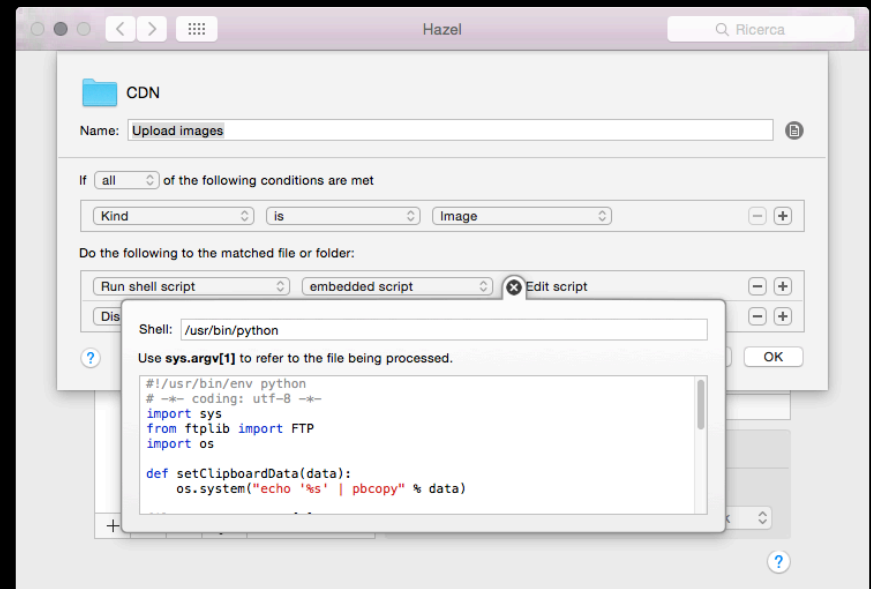
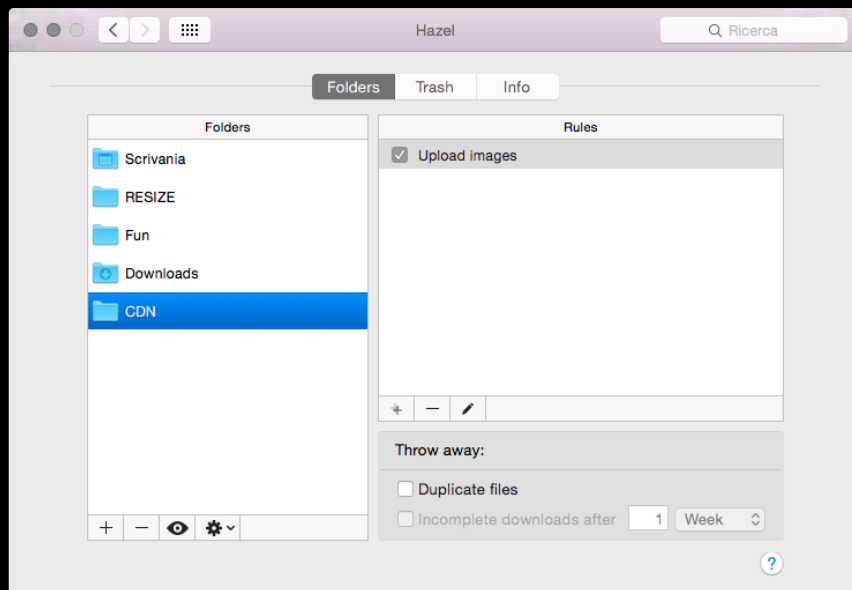
(<http://www.noodlesoft.com/hazel.php>)



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






Some ideas...


Commands	Text expansion	Automated procedures
<p>Simple tasks</p> <ul style="list-style-type: none">• Translate;• Meteo;• CSV display;• Currency;• Timezones;• Net infos; <p>File actions</p> <ul style="list-style-type: none">• Image manipulation;• Copy file names;• Quick notes; <p>Advanced</p> <ul style="list-style-type: none">• Documenting;• Text manager;	<ul style="list-style-type: none">• URL shortening;• Pretty printing;• Minifying (simple);• List to sql;• Encode/decode text (url/html);• Links;	<ul style="list-style-type: none">• Batch image processing;• Batch upload&share;





Net info


netinfo

 {lo0} 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


tz

 [CET] 09:41:38
09:41:38 16/07/2015

 [GMT] 07:41:38
07:41:38 16/07/2015

 [US/Eastern] 03:41:38
03:41:38 16/07/2015

 [US/Central] 02:41:38
02:41:38 16/07/2015

 [US/Pacific] 00:41:38
00:41:38 16/07/2015

Translate

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tr home



casa

casa, abitazione, dimora, famiglia, focolare, tetto, ospizio, ricovero, nido, asilo, a casa, direttamente, do...



maison

maison, domicile, foyer, pays, habitation, gte, pays natal, maison de retraite, but, la maison, rsider



Haus

Haus, Heimat, Heim, Zuhause, Inland, Daheim, Wohnheim, Waisenhaus, Anstalt, Ziel, Heim-, heimisch, p...



casa

casa, hogar, morada, domicilio, ciudad natal, patria, habitat, ambiente, meta, madre, residencia, asilo, pu...

Quick notes

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nnn This is a note test



Crea nota in evernote

Crea e non mostra una nota in evernote



Currency converter

cur 1000 eur

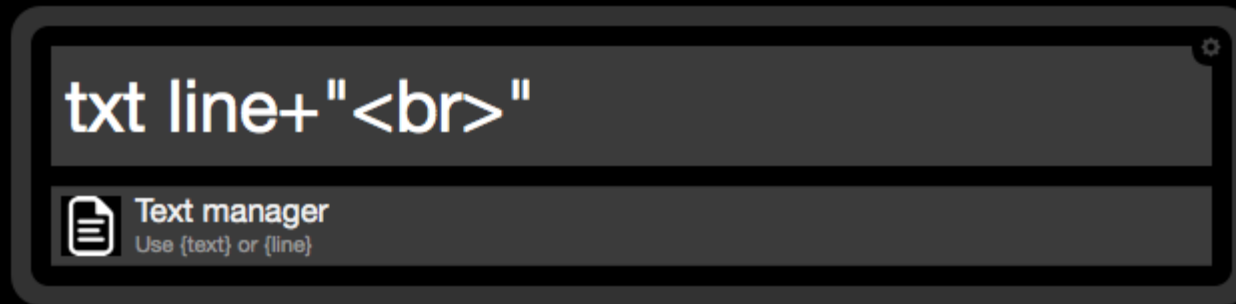
 1090.4 USD
1.0904

 697.5 GBP
0.6975

 135150.0 JPY
135.15



Text manager



Pretty print

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prettify

XML

XML

JSON

JSON

SQL

SQL

MIN

minify

Documenting

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docs 1234

? PID
Inserisci il tuo nome


docs 1234>gianluca

? AUTHOR
Inserisci il tuo nome

docs 1234>gianluca>be happy>life:

 **Generate FS**
Generate Functional Specifications

 **Generate TS**
Generate Technical Specifications

 **Generate TB**
Generate Test Book





 **Generate TR**
Generate Test Report





Image manipulation


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


 Email


 Copy Path to Clipboard


 Copy file names to clipboard with path


 Copy file names to clipboard without path


 Open in sublime


 Resize

 Rotate clockwise

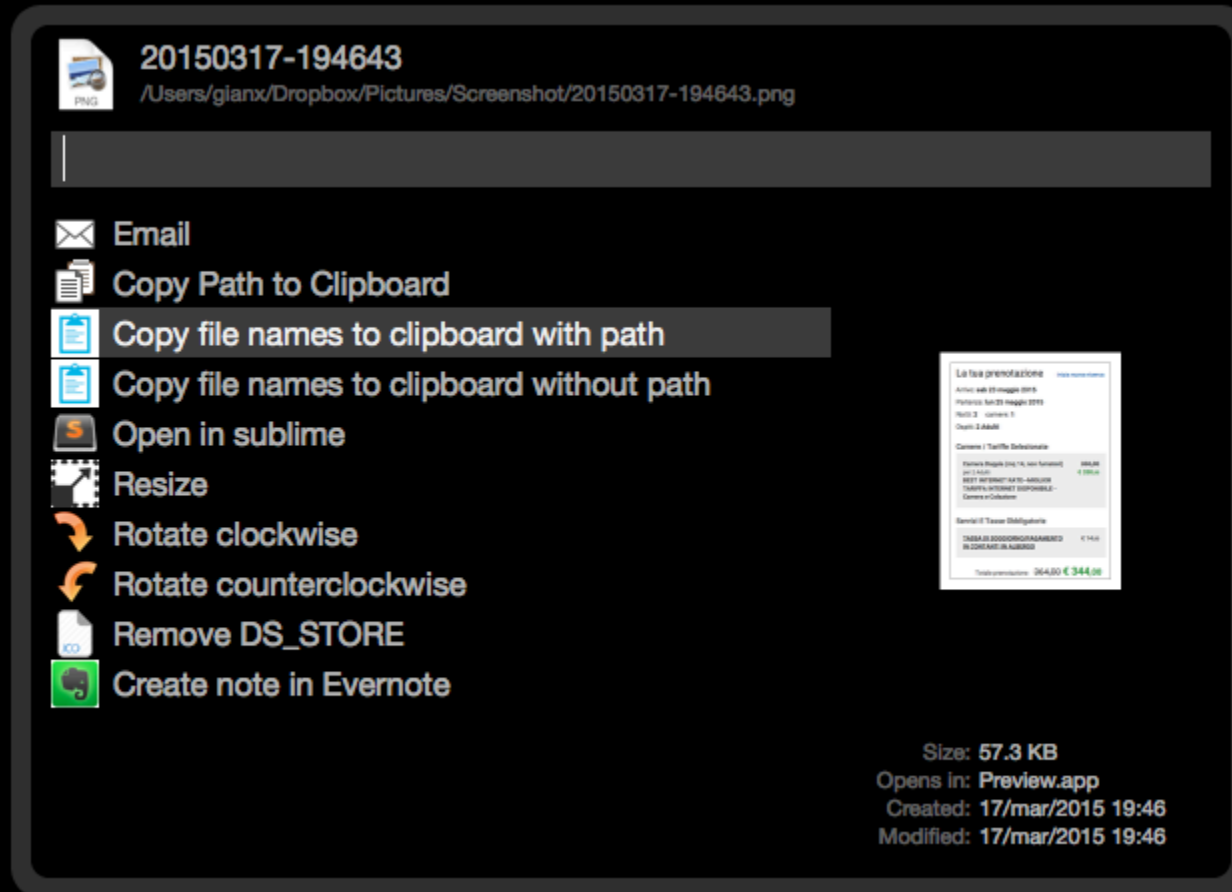
 Rotate counterclockwise

 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



Meteo

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The output of the text script is:

```
2015-07-16 Giovedi
12:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 32 gradi, 65% di umidita'
15:00:00 [Sereni] sky is clear, 0 mm di pioggia, 33 gradi, 54% di umidita'
18:00:00 [Sereni] sky is clear, 0 mm di pioggia, 31 gradi, 53% di umidita'
21:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 25 gradi, 71% di umidita'
2015-07-17 Venerdì
03:00:00 [Sereni] sky is clear, 0 mm di pioggia, 21 gradi, 84% di umidita'
06:00:00 [Sereni] sky is clear, 0 mm di pioggia, 25 gradi, 72% di umidita'
09:00:00 [Sereni] sky is clear, 0 mm di pioggia, 31 gradi, 61% di umidita'
12:00:00 [Sereni] sky is clear, 0 mm di pioggia, 33 gradi, 46% di umidita'
15:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 33 gradi, 40% di umidita'
18:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 30 gradi, 44% di umidita'
21:00:00 [Sereni] sky is clear, 0 mm di pioggia, 25 gradi, 64% di umidita'
2015-07-18 Sabato
03:00:00 [Sereni] sky is clear, 0 mm di pioggia, 20 gradi, 76% di umidita'
06:00:00 [Sereni] sky is clear, 0 mm di pioggia, 25 gradi, 65% di umidita'
09:00:00 [Sereni] sky is clear, 0 mm di pioggia, 30 gradi, 53% di umidita'
12:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 33 gradi, 46% di umidita'
15:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 34 gradi, 43% di umidita'
18:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 32 gradi, 45% di umidita'
21:00:00 [Nuvoloso] few clouds, 0 mm di pioggia, 25 gradi, 72% di umidita'
2015-07-19 Domenica
03:00:00 [Sereni] sky is clear, 0 mm di pioggia, 22 gradi, 72% di umidita'
06:00:00 [Sereni] sky is clear, 0 mm di pioggia, 26 gradi, 63% di umidita'
09:00:00 [Sereni] sky is clear, 0 mm di pioggia, 31 gradi, 49% di umidita'
12:00:00 [Pioggia] light rain, 0 mm di pioggia, 34 gradi, 45% di umidita'
15:00:00 [Pioggia] light rain, 0 mm di pioggia, 33 gradi, 41% di umidita'
18:00:00 [Sereni] sky is clear, 0 mm di pioggia, 32 gradi, 43% di umidita'
21:00:00 [Sereni] sky is clear, 0 mm di pioggia, 25 gradi, 67% di umidita'
```

OK



#6 - CSV Display

Keyboard Maestro - Shell Script Results

The output of the text script is:

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

OK



Links

```
.,curl  
.,ctitle  
.,clinkm  
.,clinkh
```


Url shortening

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„cshort

List to SQL

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„listsql











Encode/Decode text

,,urlencode
,,urldecode

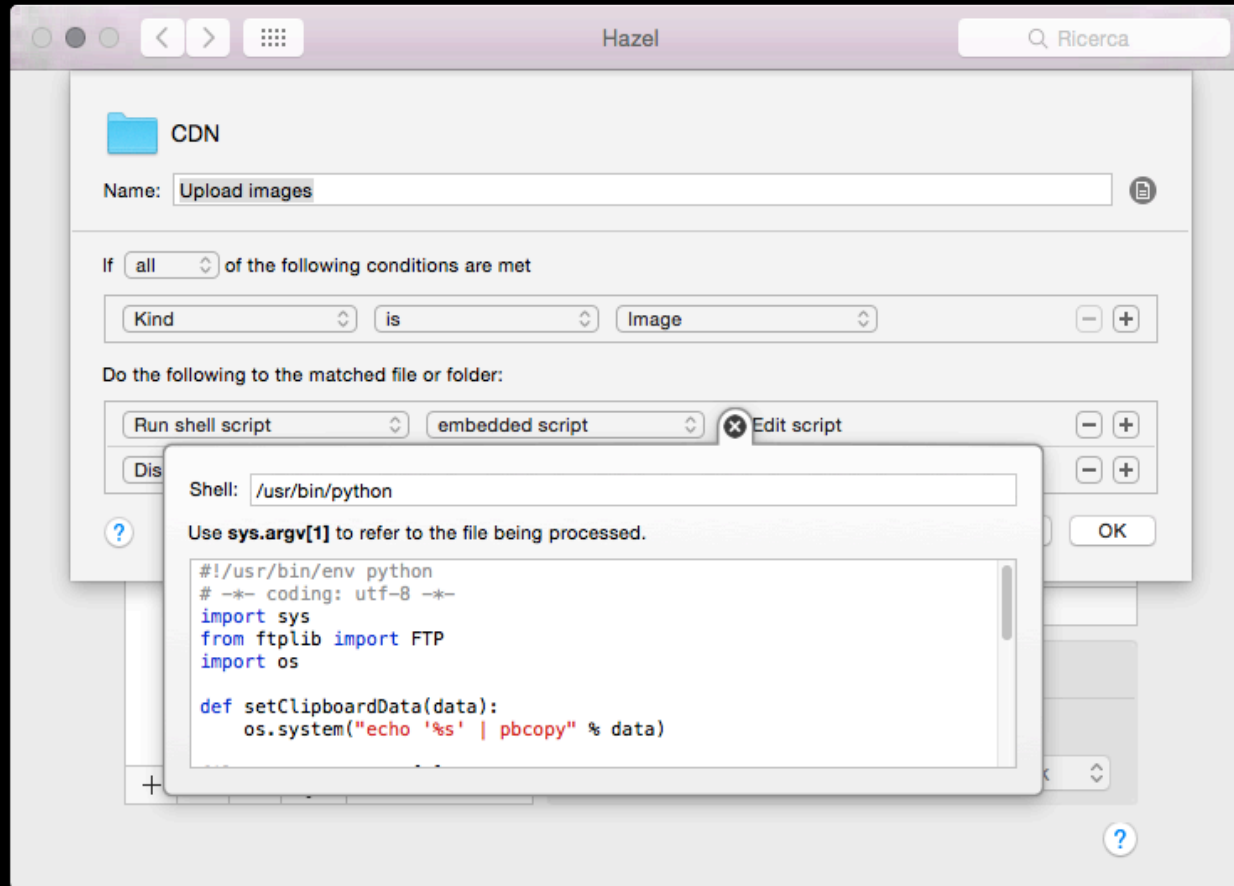


Batch image processing

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



Batch upload and share





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 literally have no limits;
- Learn about automation on mobile (Android: Tasker, iOS: Workflow, Pythonista, Drafts);



Conclusion

Thanks everybody!

You can find all the scripts here:

<http://www.gianlucanieri.com/ep2015/>

If you want you can contact me at:

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