







2nd 2018/19 GouTP @ SCEE



- *About:* Useful and various tools as a Christmas gift 🎄 ❄️ 🎁 🧑🏻‍🎅
- *Date:* 21th of December 2018 📅 21
- *Who:* Lilian Besson and Bastien Trotobas and Pierre Haessig 🙌

Open source content 📄 ?

Note: slides are online: `github.com/Naareen/slides/tree/master/2018_12__Four_useful_and_various_tools_as_a_Christmas_gift__GouTP_at_CentraleSupelec`

What's a "GouTP" ?

- Internal monthly technical training session 
- Usually: on *Thursday*, at 3pm  - 3:30pm 
- With  coffee,  tea and  sweets: we relax while training !

Initiative of Quentin and Vincent  in January 2017...
Continued by Rémi, Muhammad, Rami and Lilian  !

Not only @ SCEE ?

- Now open to all the teams of CentraleSupélec, campus of Rennes.

Agenda for today

1. Clipboard history manager
2. Offline documentation browser
3. Compressing PNG, JPEG and PDF
4. Tools to write easily in a foreign language

Please 

Ask questions and interrupt us if you want!

1st tool: Clipboard history manager

Simple and tiny tool to help you win some time!

🌟 Example of a problem?

- You're editing some files, browsing Internet
- You use `Ctrl+C` / `Ctrl+V` **a lot** (like everybody does)
- But you're tired of losing your copied text/macro/piece of code/URL when you copy something on it

How to solve it?

- 😞 Don't, just find again your text and copy it... 🌟 Slow!!
- 🔍 Use a software to keep track of your history of copy/paste!

On a GNU/Linux system

- My favorite
 - parcellite (parcellite.sourceforge.net)

```
$ sudo apt install parcellite
```

Or replace `apt` with `aur`, `yum`, `pacman` etc
(= your distribution's package manager)

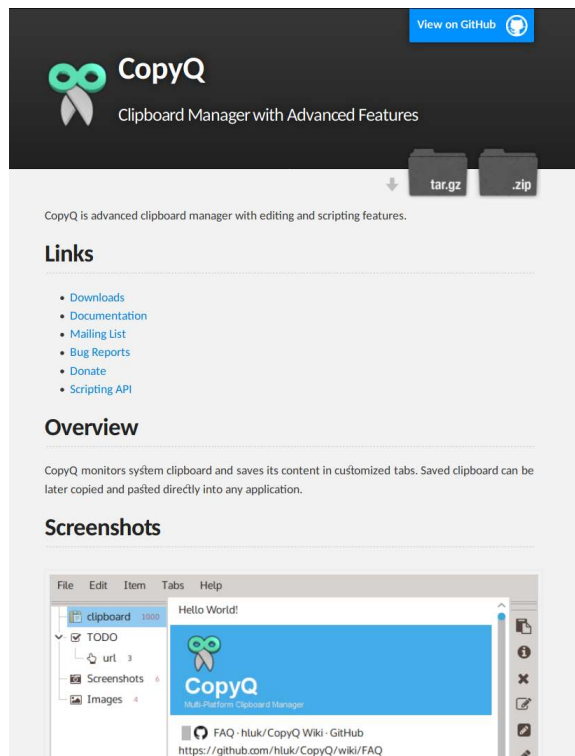
- Other good solutions
 - diodon (launchpad.net/diodon)
 - glipper (launchpad.net/glipper)

↪ superuser.com/questions/42991/clipboard-manager-for-ubuntu

All listed solutions I found are free, easy to install etc.

On a Windows or Mac OS X system

- CopyQ (hluk.github.io/CopyQ) seems to be very good 🙌 free, open source, easy to install, multi-platform!



- Other solutions? there is a lot!

Demo!

Me editing the source code of last slides, using `parcellite`

```
## On a GNU/Linux system
```

```
- My favorite
```

```
+ parcellite (parcellite.sourceforge.net)
```

```
  `` `bash
```

```
  $ sudo apt install parcellite
```

```
  ...
```

```
> Or replace `apt` with `aur`, `yum`, `pacman` etc
```

```
> (= your distribution's package manager)
```

I

```
- Other good solutions
```

```
+ diodon (launchpad.net/diodon)
```

```
+ glipper (launchpad.net/glipper)
```

```
> \hookrightarrow superuser.com/questions/42991/clipboard-manager-for-ubuntu
```

```
> All solutions I found are free, easy to install etc.
```

Good features for a *clipboard history manager*

- 📄 Keep a history of your copied/pasted texts
- 🐭 Accessible in the system menu (system tray) with your mouse
- ✨ *Bonus* if accessible from a keyboard shortcut as a floating menu
(`Ctrl+Alt+h` for `parcellite` on GNU/Linux, cf. demo)

Other features?

- 🖼️ Works with images & files
(😞 `parcellite` don't support this, 👉 `CopyQ` does)
- ♻️ Keep history after system reboot (they all do)
- 📝 Modify / clean your clipboard history
- 🙌 Work with multiple items (for multi-cursor editors)

2nd tool: Offline documentation browser

TL;DR: if you use open source languages and tools for your work, the website devdocs.io is very useful!

- Browse and search documentation of languages and libraries
- Examples: Python, tensorflow, matplotlib, C++, etc
- Work *offline* (nice in a ✈️ plane, 🚆 train etc)

Offline — DevDocs x +
 https://devdocs.io/offline

Search...

- CSS
- DOM
- DOM Events
- Git 2.19.1
- HTML
- HTTP
- JavaScript
- Matplotlib 3.0.0
- pandas 0.23.4
- Python 3.7.0
- scikit-learn 0.20.0
- TensorFlow Python 1.8
- TensorFlow Guide 1.8
- DISABLED (305)
- Angular
- Angular.js
- Ansible
- Apache HTTP Server 2.4.37

Offline Documentation

Install updates automatically Uninstall all

Documentation	Size	Status	Action
CSS	12.5 MB	Up-to-date	Uninstall
DOM	34 MB	Up-to-date	Uninstall
DOM Events	1.8 MB	Up-to-date	Uninstall
Git	3.3 MB	Up-to-date	Uninstall
HTML	4.2 MB	Up-to-date	Uninstall
HTTP	4.8 MB	Up-to-date	Uninstall
JavaScript	6.5 MB	Up-to-date	Uninstall
Matplotlib 3.0	40.7 MB	Up-to-date	Uninstall
pandas 0.23	5.6 MB	Up-to-date	Uninstall
Python 3.7	8.4 MB	Up-to-date	Uninstall
scikit-learn	50.1 MB	-	Installing...
TensorFlow Python	16.1 MB	Up-to-date	Uninstall
TensorFlow Guide	10.9 MB	Up-to-date	Uninstall

Matplotlib 3.0 boxplot

matplotlib.pyplot.boxplot

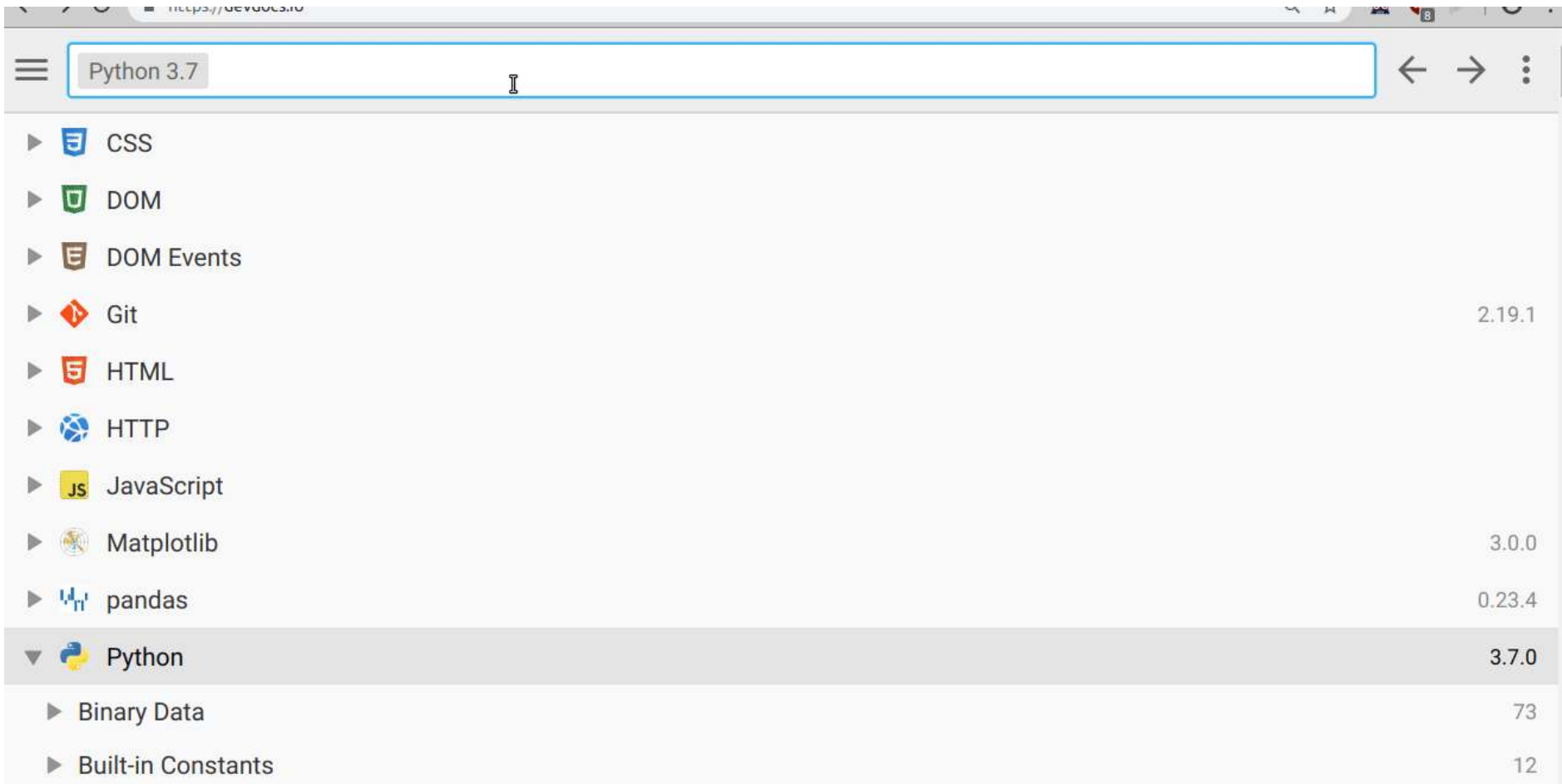
```
matplotlib.pyplot.boxplot(x, notch=None, sym=None, vert=None, whis=None, positions=None, widths=None, patch_artist=None, bootstrap=None, usermedians=None, conf_intervals=None, meanline=None, showmeans=None, showcaps=None, showbox=None, showfliers=None, boxprops=None, labels=None, flierprops=None, medianprops=None, meanprops=None, capprops=None, whiskerprops=None, manage_xticks=True, autorange=False, zorder=None, *, data=None)
```

[\[source\]](#)




Make a box and whisker plot.

Make a box and whisker plot for each column of `x` or each vector in sequence `x`. The box extends from the lower to upper quartile values of the data, with a line at the median. The whiskers extend from the box to show the range of the data. Flier points are those past the end of the whiskers.

Parameters:

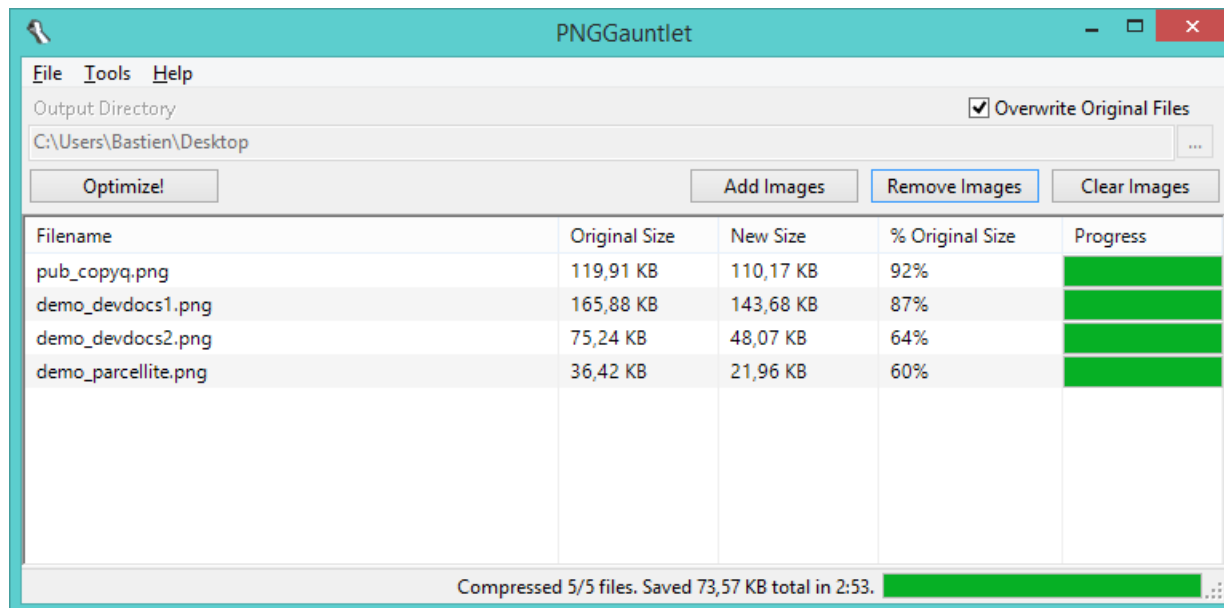


3rd tool: Compressing PNGs, JPEGs & PDFs

- *What?*
 - Reduce the size of figures with little or no quality loss.
- *Why?*
 -  Reduce the size of your research papers,
 -  Speed up your data transfers to your git, drive, etc,
 -  Reduce your environmental impact effortlessly.
- *How?*
 - i. (you can) remove EXIF data from figures
 - ii. **Compress** them.
 - iii. See next slides.

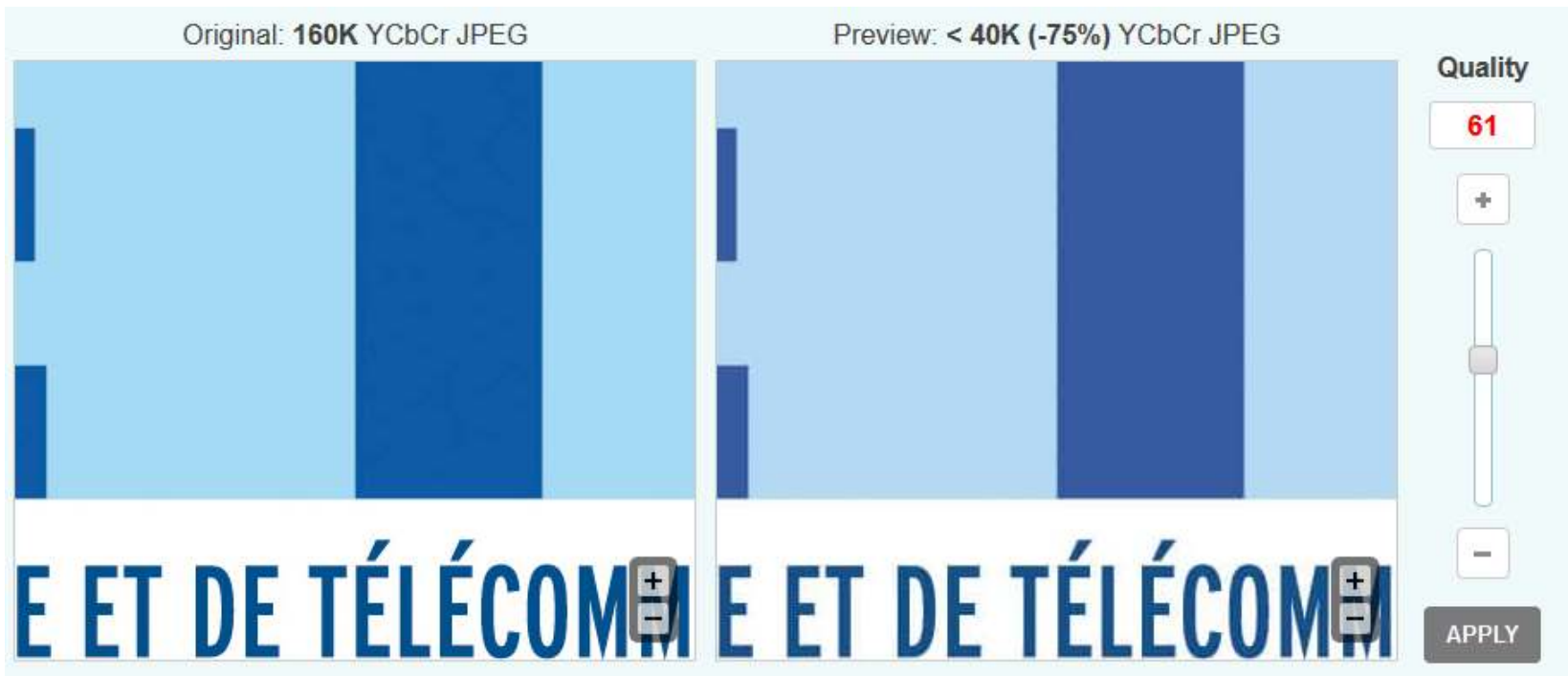
For PNGs ➡ Up to 60% compression rate!

```
$ advpng -z -2 *.png # on *Nix systems
112098      88316      78% Zotero_desktop_idle.png
120106      89860      74% Zotero_online.png
124577      93638      75% bibtex_style.png
 21961      16303      74% generate_IEEE.png
 73520      56477      76% setup_proxy.png
452262      344594     76% # quite good!
```



For JPEGs already compressed

- One can reduce the size with little loss.
- Lots of web tools. One among all [CompressJPEG.com](https://compressjpeg.com)



Example: two compression steps



- 159 ko ➡ 47 ko (30%) ➡ 21 ko (13%)
- It depends on your use case!

For PDFs Up to 100% compression rate!

On Unix systems

Lilian wrote [PDFCompress](#) for this (↔ bitbucket.org/lbesson/bin).

```
$ cp input.pdf output.pdf
$ PDFCompress output.pdf
# lot of verbose output ...

$ du input.pdf output.pdf
2,1M    input.pdf    |    1,1M    output.pdf

# it does this command with gs (ghostscript):
$ gs -dBATCH -dNOPAUSE -q -sDEVICE=pdfwrite \
    -sOutputFile=output.pdf input.pdf
```

On Windows systems

Use online tools such as [SmallPDF.com](#)

4th tools: Writing tools

Goal: increase quality and productivity when writing, e.g. in a non native language

Three propositions:

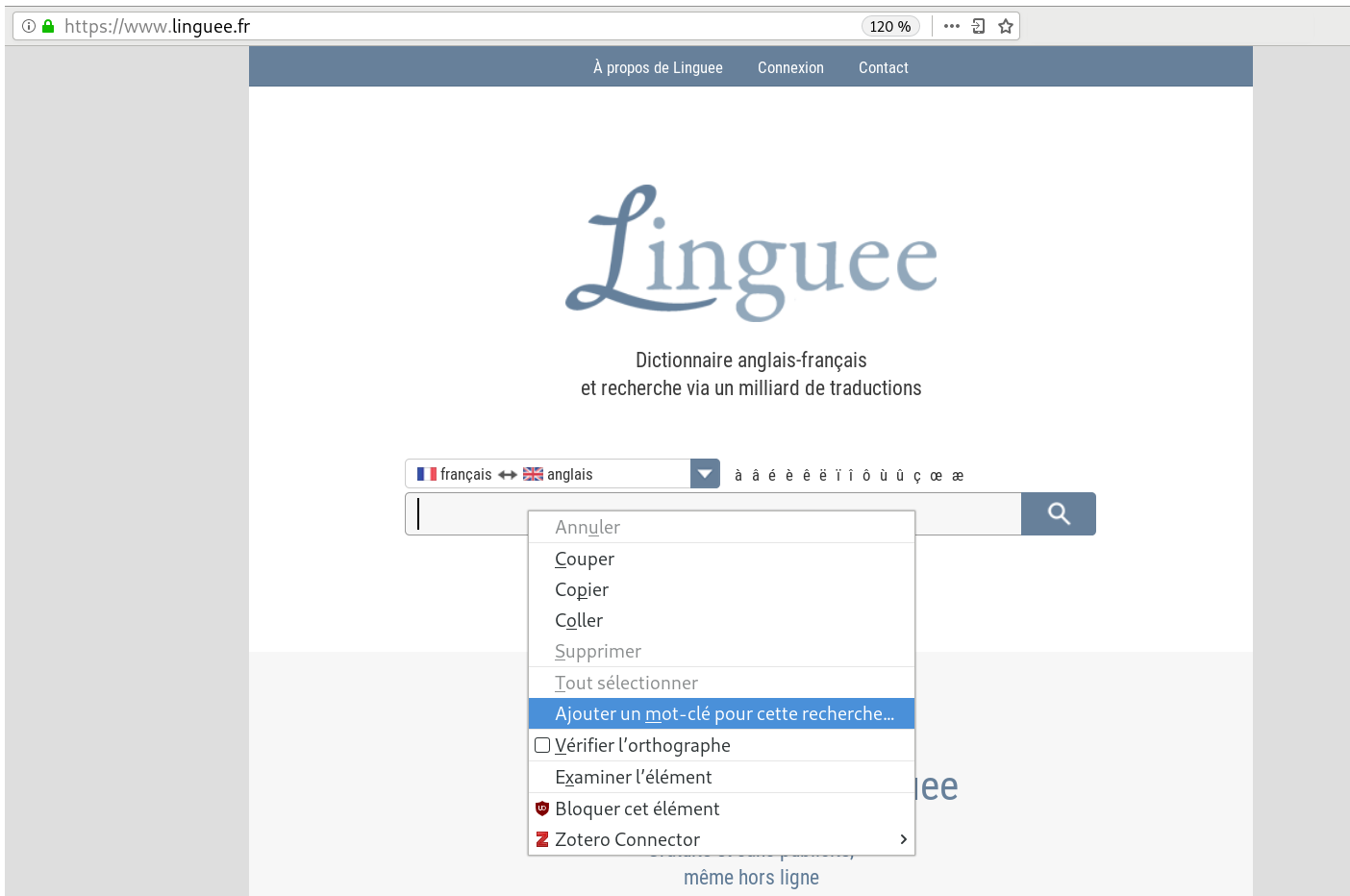
1. Dictionary power user: WordReference.com + Firefox [smart keywords](#)
2. Fast translation with DeepL.com
3. Grammar spellchecker with : Antidote.info
 - Fr + En = 120 + 60 €
 - LaTeX compatible
 - I used it for my PhD manuscript (in French), and all articles since then

4.1. Firefox keywords for dictionaries

- *Goal*: fast word translation with Wordreference or other dictionary.
cf. [support.mozilla.org/en-US/kb/Smart keywords](https://support.mozilla.org/en-US/kb/Smart-keywords).
- Access dictionaries *without leaving the keyboard* (no mouse click needed).

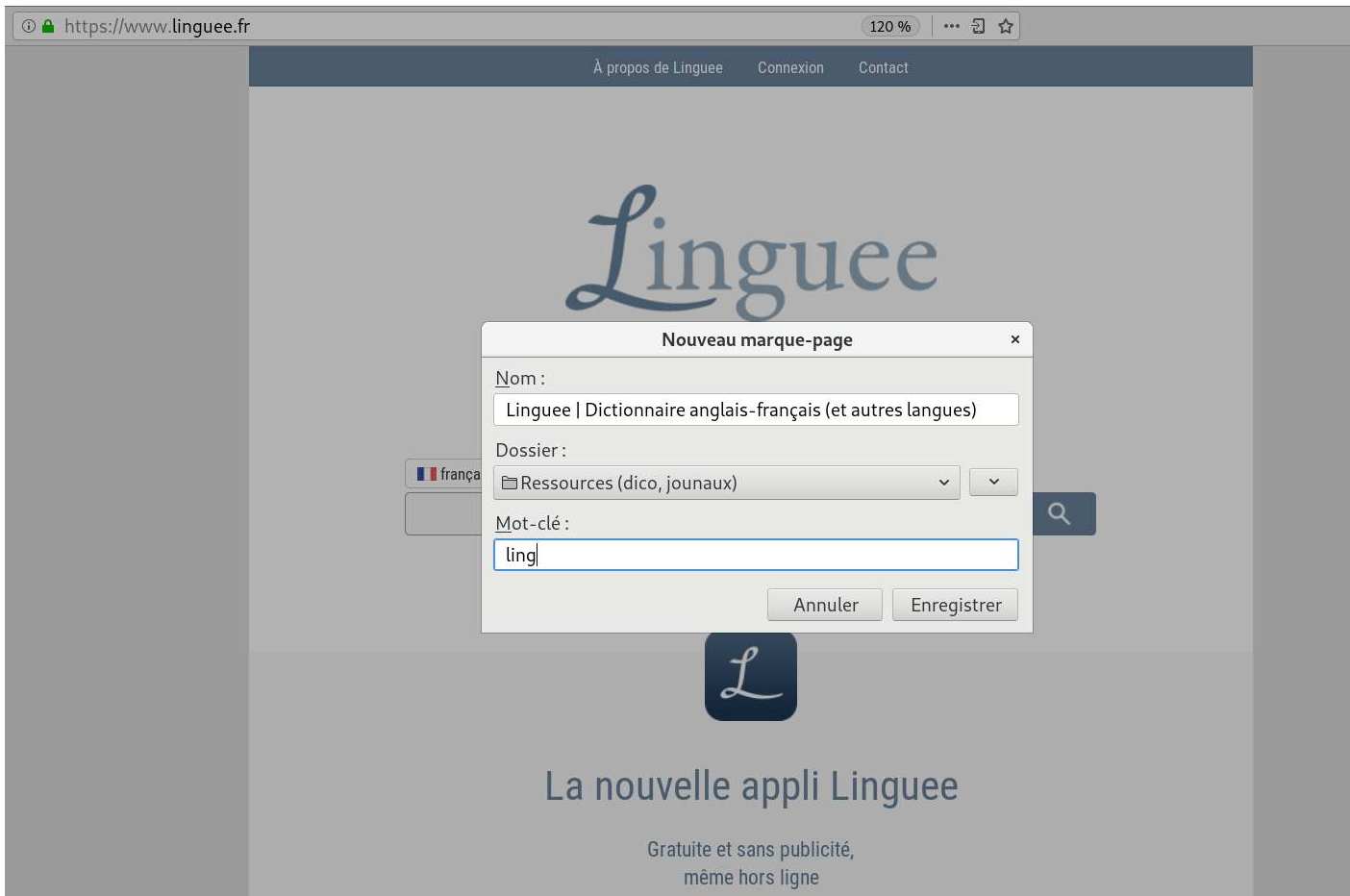
Firefox keywords: HOWTO 1/2

Step 1: right-click in search field: "Add a Keyword for this Search..."



Firefox keywords: HOWTO 2/2

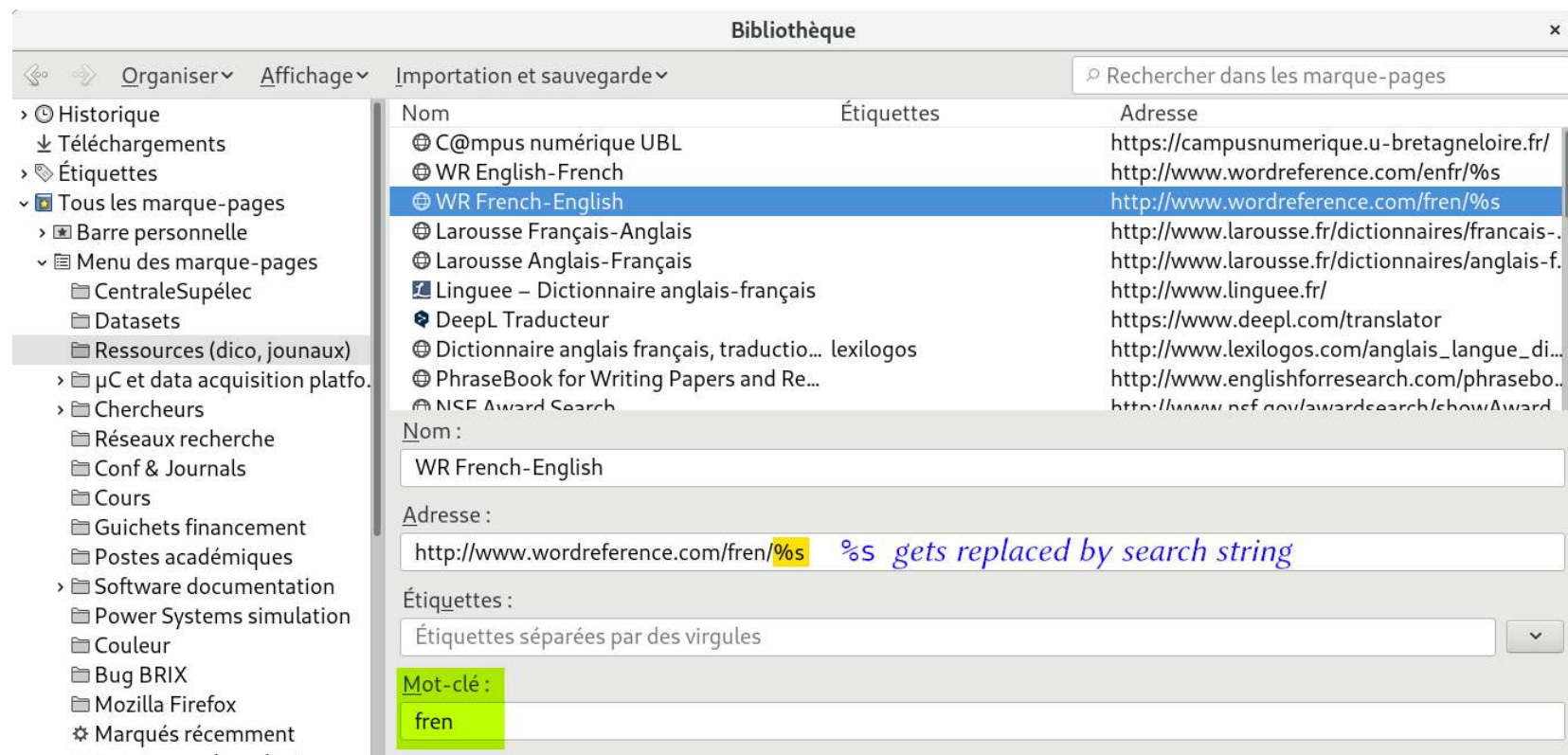
Step 2: choose the keyword: "ling", "fren", "enfr"...



Firefox keywords: check

NB: keywords are associated with *bookmarks*.

You can hack the bookmark record, playing with the `%s` placeholder:



The screenshot shows the Firefox 'Bibliothèque' (Library) window. The left sidebar shows a tree view of bookmarks, with 'Tous les marque-pages' expanded. The main area displays a table of bookmarks:

Nom	Étiquettes	Adresse
C@mpus numérique UBL		https://campusnumerique.u-bretagneoire.fr/
WR English-French		http://www.wordreference.com/enfr/%s
WR French-English		http://www.wordreference.com/fren/%s
Larousse Français-Anglais		http://www.larousse.fr/dictionnaires/francais-
Larousse Anglais-Français		http://www.larousse.fr/dictionnaires/anglais-f.
Linguee – Dictionnaire anglais-français		http://www.linguee.fr/
DeepL Traducteur		https://www.deepl.com/translator
Dictionnaire anglais français, traductio... lexilogos		http://www.lexilogos.com/anglais_langue_di...
PhraseBook for Writing Papers and Re...		http://www.englishforresearch.com/phrasebo...
NSE Award Search		http://www.nse.gov/awardsearch/showAward

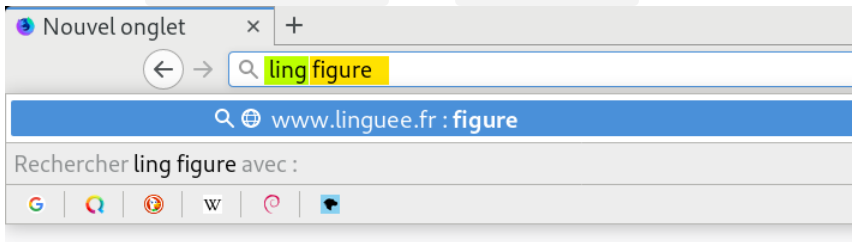
Below the table, the details for the selected bookmark 'WR French-English' are shown:

- Nom : WR French-English
- Adresse : http://www.wordreference.com/fren/%s *%s gets replaced by search string*
- Étiquettes : Étiquettes séparées par des virgules
- Mot-clé : fren

Firefox keywords: usage (without mouse!)

(`Ctrl+L` to focus the address bar)

Type keyword + space + search string:



Then hit `Enter` to query the search:



4.2. DeepL online translator

↪ [DeepL.com](https://www.DeepL.com) (by the makers of [Linguee.com](https://www.Linguee.com)).

Key interesting points:

- **word-by-word interactivity:** adjust the translation to your taste
- integrated dictionary



Don't use for private documents!

⚠ Important warning: in the free version, *everything gets recorded* (cf. [privacy policy](#)),

⚠ like Google Translate...

DeepL demo

My tip: make changes *forward*, or you shall loose previous changes 😞.

The screenshot shows the DeepL Translator interface. The source text in French is "le réseau n'est pas fiable". The target text in English is "the grid is not reliable". The English text has red wavy lines under "grid" and "not", indicating a correction. Below the translator is a promotional banner for DeepL Pro with three bullet points:

- ✓ Assurez la confidentialité de vos textes
En savoir plus
- ✓ Éditez les documents traduits
En savoir plus
- ✓ Utilisez nos plug-ins dans vos outils de TAO et accédez à notre API
En savoir plus

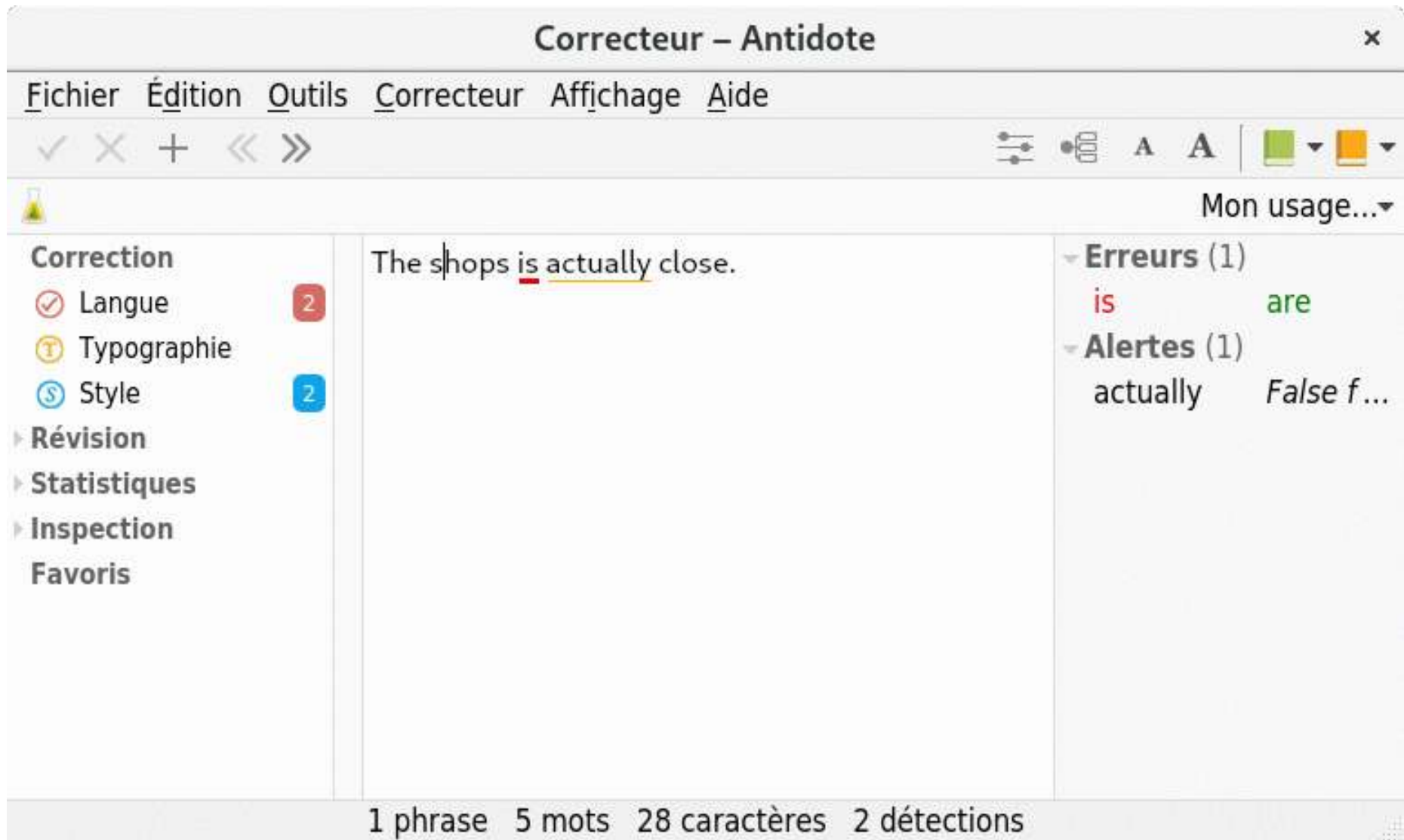
4.3. Antidote grammar spellchecker

⚠ NB: non free tool: 120 € + 60 € for French + English

Features

- detects advanced grammar errors
 - including *false friends* for French (e.g.: actuellement/actually)
- can spellcheck LaTeX
- includes dictionaries with synonyms, antonyms, citations...

Demo of Antidote



Conclusion (1/3)

Sum-up

1. *A clipboard history manager* is simple to use and can be useful!
2. *Offline documentation browser* is awesome!
3. *Compress your figures* before including them on your papers, sending them online, storing them on your git, etc!
4. *Advanced writing tools*

Pointers

- ↪ [Other JPEGs and PNGs compression tools](#) and [Other PDFs compression tools](#) online
- ↪ [DeepL.com](#) and other websites

Conclusion (2/3)

Next GouTP @ SCEE

- Any request or suggestion ?

We need participants!

👉 By *you*? Any idea is welcome! 😊

Contact us if you want to do a GouTP !

Note for PhD students

GouTP count as **PhD training hours**, come with a paper from Ecole Doctorale for us to sign!

Conclusion (3/3)

Happy holidays!

And merry Christmas 🎄 ❄️ 🎁 🎅 !

Your mission, if you accept it... ✨

1. *Padawan level* : **be smart and try new tools!**
2. *Jedi level* : **discuss** about your tools with your colleagues and friends!
3. *Master level* : **write your own** open source tools to solve problems nobody never had!

Thanks for joining 🙌 !