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# **papis Documentation**

*Release 0.9*

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# CONTENTS

<b>1</b>	<b>Quick start</b>	<b>3</b>
1.1	Creating a new library . . . . .	3
1.2	Adding the first document . . . . .	4
<b>2</b>	<b>Installation</b>	<b>5</b>
2.1	Using pip . . . . .	5
2.2	Archlinux . . . . .	5
2.3	NixOS . . . . .	5
2.4	From source . . . . .	6
2.5	Requirements . . . . .	7
<b>3</b>	<b>Configuration file</b>	<b>9</b>
3.1	Local configuration files . . . . .	11
3.2	General settings . . . . .	11
3.3	Tools options . . . . .	13
3.4	Bibtex options . . . . .	14
3.5	papis add options . . . . .	15
3.6	papis browse options . . . . .	16
3.7	papis edit options . . . . .	16
3.8	Marks . . . . .	16
3.9	Downloaders . . . . .	17
3.10	Databases . . . . .	17
3.11	Terminal user interface (picker) . . . . .	18
3.12	Other . . . . .	20
<b>4</b>	<b>The <code>info.yaml</code> file</b>	<b>23</b>
<b>5</b>	<b>The library structure</b>	<b>25</b>
<b>6</b>	<b>The database</b>	<b>27</b>
6.1	Papis database . . . . .	27
6.2	Whoosh database . . . . .	28
<b>7</b>	<b>Commands</b>	<b>31</b>
7.1	Add . . . . .	31
7.2	Addto . . . . .	33
7.3	Browse . . . . .	34
7.4	Bibtex . . . . .	35
7.5	Config . . . . .	37
7.6	Main . . . . .	38
7.7	Edit . . . . .	39

7.8	Explore . . . . .	40
7.9	Export . . . . .	48
7.10	Git . . . . .	49
7.11	List . . . . .	50
7.12	Mv . . . . .	51
7.13	Open . . . . .	52
7.14	Rename . . . . .	53
7.15	Rm . . . . .	54
7.16	Run . . . . .	55
7.17	Update . . . . .	56
<b>8</b>	<b>Gui</b>	<b>59</b>
<b>9</b>	<b>Custom scripts</b>	<b>61</b>
9.1	Example: Mail script . . . . .	61
9.2	Example: Accessing papis from within mutt . . . . .	62
9.3	Example: Define papis mode in i3wm . . . . .	62
<b>10</b>	<b>API</b>	<b>65</b>
<b>11</b>	<b>Plugin architecture</b>	<b>69</b>
<b>12</b>	<b>Git</b>	<b>71</b>
12.1	Interplay with other commands . . . . .	71
12.2	Updating the library . . . . .	72
12.3	Usual workflow . . . . .	72
<b>13</b>	<b>Scihub support</b>	<b>73</b>
<b>14</b>	<b>Importing from bibtex files</b>	<b>75</b>
<b>15</b>	<b>Importing from zotero sqlite file</b>	<b>77</b>
<b>16</b>	<b>Shell auto-completion</b>	<b>79</b>
16.1	Zsh . . . . .	79
<b>17</b>	<b>FAQ</b>	<b>81</b>
<b>18</b>	<b>Indices and tables</b>	<b>83</b>
	<b>Python Module Index</b>	<b>85</b>
	<b>Index</b>	<b>87</b>

Papis is a command-line based document and bibliography manager. Its command-line interface (*CLI*) is heavily tailored after [Git](#).



## QUICK START

This is a tutorial that should be enough to get you started using papis. Papis tries to be as simple and lightweight as possible, therefore its database structure is ridiculously simple.

But before taking a look at its database structure let us see how is the daily usage of papis for a regular user. This tutorial is command-line based, so you should be familiar with opening a terminal window on your system.

### 1.1 Creating a new library

We will illustrate the process by creating a first library with a couple of `pdf` documents in it. Papis can be highly configured using configuration files. Many programs use configuration files maybe without you being aware of it. Papis' configuration files are stored together inside the folder

```
~/ .config/papis
```

Bear in mind that ~ means “Home Directory”. Inside this directory a configuration file is found,

```
~/ .config/papis/config
```

Right now we will open this file for editing and we will create a library. In papis everything should be human-readable and human-editable. So adding a library is as easy as adding two lines to this configuration file.

Say that you want to create a “papers” library, where you can finally order all those pdf's hanging around on your computer. We create this library by putting these two lines inside the config file:

```
[papers]  
dir = ~/Documents/mypapers
```

In the above lines we have created a library with the name `papers` which is located in the directory `~/Documents/mypapers`. So all the documents that we will be adding to the library will be located inside `~/Documents/mypapers`, and nowhere else. Everything that papis needs to take care of your `papers` library is inside the `~/Documents/mypapers` directory, self-contained.

If you have not already, add the two lines to the `~/ .config/papis/config` file and save it, and we will proceed to add some documents.

## 1.2 Adding the first document

If you don't have any special pdf lying around let me choose one for you: [link](#). You can download this document and we are going to add it into the `papers` library.

Assuming that you have the document in the current directory and you have renamed the document to `document.pdf`, do the following to add the pdf into your library:

```
papis add document.pdf --set author "Newton" --set title "Principia Mathematica"
```

And it's done! We have added our first book to the library.

Let us see how this works exactly. Papis consists of many commands, and one of these commands is `add`. `add` itself has many flags, which are options for the given command. In the example above we have used the flags `author` and `title` to tell papis to use `Newton` as the author's name and `Principia Mathematica` as the document's title. You can see all the possible flags for the command `add` if you use the `help` flag, i.e., if you issue the following command

```
papis add --help
```

Now you are asking yourself, what happened to the pdf-file? Where is it stored? Is it stored in an obscure database somewhere in my computer? No, papis just copied the `document.pdf` file into a folder inside the library folder `~/Documents/papers/`. If you now go there, you will see that a folder with a weird name has been created. Inside of the folder there is the `document.pdf` file and another file, `info.yaml`.

If you open the `info.yaml` file you will see the following contents:

```
author: Newton
title: Principia Mathematica
files:
- document.pdf
```

This file is all that papis uses to store the information of your newly added document. It is stored in a nicely readable `yaml` format.

Now you already have your first document, and.. you can open it! Just do

```
papis open
```

and the document should open in your default pdf-viewer. You can change the default pdf-viewer in your configuration file (see section on *Configuration file*).

Now you can try to repeat the same process with another pdf-file lying around. When you hit `papis open` again, it will ask you which one you want. If you input parts of the title or the author's name it will try to match what you typed with the paper you are looking for, so that you can get the desired paper very easily.



## INSTALLATION

### 2.1 Using pip

The easiest way of installing `papis` is using the PyPi repositories and the package manager `pip3`, just open a terminal and type in

```
pip3 install papis
```

If you are on GNU/Linux like systems you might need to type `sudo`

```
sudo pip3 install papis
```

or if you prefer installing it locally then simply type

```
pip3 install --user papis
```

You can also **update** `papis` with `pip`

```
pip3 install --upgrade papis
```

### 2.2 Archlinux

The package `papis` is also found in the archlinux repositories [here](#).

### 2.3 NixOS

If you are running `NixOS` or you have the `nix` package manager installed, you can install `papis` by running:

```
nix-env -i papis
```

If you like `papis`, just clone the repository

```
git clone git@github.com:papis/papis.git  
cd papis
```

and start hacking it with:

```
nix-shell --expr 'with import <nixpkgs> {}; papis.overrideDerivation (drv: { src = ./.  
↵; })'
```

This command will provide you a shell with all the dependencies required.

## 2.4 From source

First of all you have to get the code, open a terminal and hit

```
git clone https://github.com/alejandrogallo/papis.git
```

or download the [zip file](#).

Go inside of the `papis` source folder and you can either use the `Makefile` or install it with `python3`.

### 2.4.1 Using the Makefile

Now you have to initialize the submodules, just type

```
make submodules
```

check the file `config.mk` for more information about the submodule initialization.

If you want to install it globally, just hit

```
sudo make install
```

If you want to install it locally:

```
make install-local
```

If you want to install it locally and have the development version:

```
make install-dev-local
```

And to see the available targets hit:

```
make help
```

### 2.4.2 Using python3

The general command that you have to hit is by using the `setup.py` script:

```
python3 setup.py install
```

Again, if you want to install it locally because you don't have administrative rights on your computer you simply type

```
python3 setup.py install --user
```

If you want to work on the code, you can alternatively hit

```
python3 setup.py develop --user
```

**Warning:** If you install the package locally, the program `papis` will be installed by default into your `~/local/bin` directory, so that you will have to set your `PATH` accordingly.

One way of doing this in `bash` shells (Linux and the like, also Ubuntu on Windows or `cygwin`) is by adding the following line to your `~/.bashrc` file

```
export PATH=$PATH:$HOME/.local/bin
```

## 2.5 Requirements

Papis needs the following packages that are sometimes not installed with the system `python3` distribution

```
python3-setuptools
```

However if you have a general enough python distribution they should be installed.



## CONFIGURATION FILE

Papis uses a configuration file in *INI* format. You can then have several libraries which work independently from each other.

For example, maybe you want to have one library for papers and the other for some miscellaneous documents. An example for that is given below

```
[papers]
dir = ~/Documents/papers

[settings]
editor = vim
default-library = papers

[books]
dir = ~/Documents/books
```

A more complete example of a configuration file is the following

```
#
# This is a general section, the settings set here will be set for
# all libraries
#
[settings]
#
# General file opener program, rifle is a nice python program
# If you're on macOS, you can write "open", if you're on linux
# you can also write "xdg-open", on windows-cygwin, you can set it to
# "cygstart"
#
opentool = rifle
# Use ranger as a file browser, a nice python program
file-browser = ranger
# Ask for confirmation when doing papis add
add-confirm = True
# Edit the info.yaml file before adding a doc into the library
# papis add --edit
add-edit = True
# Open the files before adding a document into the library
# papis add --open
add-open = True
#
# Define custom default match and header formats
#
match-format = {doc[tags]}{doc.subfolder}{doc[title]}{doc[author]}{doc[year]}
```

(continues on next page)

```
#
# Define header format with colors and multiline support
#
header-format = <red>{doc.html_escape[title]}</red>
               <span color='#ff00ff'> {doc.html_escape[author]}</span>
               <yellow> {{doc.html_escape[year]}}</yellow>

[tui]
editmode = vi
options_list.selected_margin_style = bg:ansigreen fg:ansired
options_list.unselected_margin_style =

# Define a lib
[papers]
dir = ~/Documents/papers

# override settings from the section tui only for the papers library
# you have to prepend "tui-" to the settings
tui-editmode = emacs
tui-options_list.unselected_margin_style = bg:blue
# use whoosh as a database for papers
database-backend = whoosh
# rename files added by author and title
add-file-name = {doc[author]}{doc[title]}

# Define a lib for books
[books]
dir = ~/Documents/books
database-backend = whoosh

# Define a lib for Videos
[videos]
dir = ~/Videos/courses

# Define a lib for contacts, why not?
# To make it work you just have to define some default settings
[contacts]
dir = ~/contacts/general
database-backend = papis
mode = contact
header-format = {doc[first_name]} {doc[last_name]}
match-format = {doc[org]} {doc[first_name]} {doc[last_name]}
browse-query-format = {doc[first_name]} {doc[last_name]}
add-open = False
```

## 3.1 Local configuration files

Papis also offers the possibility of creating local configuration files. The name of the local configuration file can be configured with the `local-config-file` setting.

The local configuration file can be found in the current directory of where you are issuing the `papis` command or in the directory of the library that you are considering in the `papis` command.

For instance let us suppose that you are in some project folder `~/Documents/myproject` and you have a local config file there with a definition of a new library. Then whenever you are in the `~/Documents/myproject` directory `papis` will also source the local configuration file found there.

On the other hand, also if you have a configuration file in the library folder for your papers, for instance in

```
~/Documents/papers/.papis.config
```

then every time that you use this library `papis` will also source this configuration file.

## 3.2 General settings

### `local-config-file` (*config-settings-local-config-file*)

- **Default:** `.papis.config`

Name AND relative path of the local configuration file that `papis` will additionally read if the file is present in the current directory or in the base directory of a given library.

This is useful, for instance, if you have a library somewhere for which you want special configuration settings but do not want these settings to cluster in your configuration file. It is also useful if you're sharing a library with someone else and you want them to have the same settings in that library as you. Imagine you're sharing a library of datasheets with your friend Fulano. You have your library at

```
~/Documents/lib-with-fulano
```

and you've set a local configuration file there

```
~/Documents/lib-with-fulano/.papis.config
```

then whenever Fulano uses that library and the file is also present, his `papis` program will also read the configuration settings at the path above.

### `dir-umask` (*config-settings-dir-umask*)

- **Default:** `493`

This is the default `umask` that will be used to create the new documents' directories.

### `use-git` (*config-settings-use-git*)

- **Default:** `False`

Some commands will issue `git` commands if this option is set to `True`. For example in `mv` or `rename`.

### `browse-query-format` (*config-settings-browse-query-format*)

- **Default:** `{doc[title]} {doc[author]}`

The query string that is to be searched for in the `browse` command whenever a search engine is used.

### `search-engine` (*config-settings-search-engine*)

- **Default:** `https://duckduckgo.com`

Search engine to be used by some commands like `browse`.

**user-agent** (*config-settings-user-agent*)

- **Default:** `Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_3)`

User agent used by papis whenever it obtains information from external servers.

**scripts-short-help-regex** (*config-settings-scripts-short-help-regex*)

- **Default:** `.*papis-short-help: *(.*)`

This is the format of the short help indicator in external papis commands.

**info-name** (*config-settings-info-name*)

- **Default:** `info.yaml`

The default name of the information files.

**doc-url-key-name** (*config-settings-doc-url-key-name*)

- **Default:** `doc_url`

Some documents might have, apart from an url, also a file url associated with them. The key name appearing in the information file is defined by this setting.

**default-library** (*config-settings-default-library*)

- **Default:** `papers`

The name of the library that is to be searched when papis is run without library arguments.

**format-doc-name** (*config-settings-format-doc-name*)

- **Default:** `doc`

This setting controls the name of the document in the papis format strings like in format strings such as `match-format` or `header-format`. For instance, if you are managing videos, you might want to set this option to `vid` in order to set the `header-format` to `{doc[title]} - {doc[director]} - {doc[duration]}`.

**match-format** (*config-settings-match-format*)

- **Default:** `{doc[tags]}{doc.subfolder}{doc[title]}{doc[author]}{doc[year]}`

Default format that is used to match a document against in order to select it. For example if the `match-format` is equal to `{doc[year]} {doc[author]}` then the title of a document will not work to match a document, only the year and author.

**header-format** (*config-settings-header-format*)

- **Default:**

```
<ansired>{doc.html_escape[title]}</ansired>
<ansigreen>{doc.html_escape[author]}</ansigreen>
<blue>({doc.html_escape[year]})</blue> [<ansiyellow>{doc.html_
↵escape[tags]}</ansiyellow>
```

Default format that is used to show a document in order to select it.

**header-format-file** (*config-settings-header-format-file*)

- **Default:** `None`



This option should have the path of a file with the `header-format` template. Sometimes templates can get big so this is a way of not cluttering the config file with text.

As an example you would set

```
[papers]
header-format-file = ~/.papis/config/styles/header.txt
```

#### **info-allow-unicode** (*config-settings-info-allow-unicode*)

- **Default:** `True`

This flag is to be set if you want to allow unicode characters in your info file or not. If it is set to `false` then a representation for the unicode characters will be written in its place. Since we should be living in an unicode world, it is set to `True` by default.

## 3.3 Tools options

#### **opentool** (*config-settings-opentool*)

- **Default:** `xdg-open`

This is the general program that will be used to open documents. As for now papis is not intended to detect the type of document to be opened and decide upon how to open the document. You should set this to the right program for the tool. If you are on linux you might want to take a look at [ranger](#) or let the default handle it in your system. For mac users you might set this to `open`.

#### **browser** (*config-settings-browser*)

- **Default:** `$BROWSER`

Program to be used for opening websites, the default is the environment variable `$BROWSER`.

#### **picktool** (*config-settings-picktool*)

- **Default:** `papis`

This is the program used whenever papis asks you to pick a document or options in general.

#### **Only option is:**

- `papis`

#### **editor** (*config-settings-editor*)

- **Default:** `$EDITOR`

Editor used to edit files in papis, e.g., for the `papis edit` command. It defaults to the `$EDITOR` environment variable, if this is not set then it will default to the `$VISUAL` environment variable. Otherwise the default editor in your system will be used.

#### **file-browser** (*config-settings-file-browser*)

- **Default:** `xdg-open`

File browser to be used when opening a directory. It defaults to the default file browser in your system, however, you can set it to different file browsers such as `dolphin`, `thunar` or `ranger` just to name a few.

## 3.4 Bibtex options

### **bibtex-journal-key** (*config-settings-bibtex-journal-key*)

- **Default:** journal

Journal publishers may request abbreviated journal titles. This option allows the user to set the key for the journal entry when using `papis export --bibtex`.

Set as `full_journal_title` or `abbrev_journal_title` for whichever style required. Default is `journal`.

### **extra-bibtex-keys** (*config-settings-extra-bibtex-keys*)

- **Default:** []

When exporting documents in bibtex format, you might want to add non-standard bibtex keys such as `doc_url` or `tags`. You can add these as a valid python list of strings, for instance:

```
[mylib]
extra-bibtex-keys = ["tags", "doc_url"]
```

### **extra-bibtex-types** (*config-settings-extra-bibtex-types*)

- **Default:** []

Allow non-standard bibtex types to be recognized, e.g,

```
[mylib]
extra-bibtex-types = ["wikipedia", "video", "song"]
```

See [bibtex reference](#).

### **multiple-authors-format** (*config-settings-multiple-authors-format*)

- **Default:** {au[family]}, {au[given]}

When retrieving automatic author information from services like `crossref.org`, `papis` usually builds the `author` field for the given document. The format how every single author name is built is given by this setting, for instance you could customize it by the following:

```
multiple-authors-format = {au[surname]} -- {au[given_name]}
```

which would given in the case of Albert Einstein the string `Einstein -- Albert`.

### **multiple-authors-separator** (*config-settings-multiple-authors-separator*)

- **Default:** `` and ``

Similarly to `multiple-authors-format`, this is the string that separates single authors in the `author` field. If it is set to ``` and ``` then you would have `<author 1> and <author 2> and ...` in the `author` field.

### **bibtex-unicode** (*config-settings-bibtex-unicode*)

- **Default:** False

Whether or not to allow direct unicode characters in the document fields to be exported into the bibtex text.

## 3.5 papis add options

### ref-format (*config-settings-ref-format*)

- **Default:** {doc[doi]}

This flag is set to change the ref flag in the info.yaml file when a document is imported. For example: I prefer the format FirstAuthorYear e.g. Plews2019. This would be achieved by the following:

```
ref-format = {doc[author_list][0][surname]}{doc[year]}
```

The default behavior is to set the doi as the ref.

### add-confirm (*config-settings-add-confirm*)

- **Default:** False

If set to True, every time you run `papis add` the flag `--confirm` will be added automatically. If is set to True and you add it, i.e., you run `papis add --confirm`, then it will have the contrary effect, i.e., it will not ask for confirmation.

### add-folder-name (*config-settings-add-folder-name*)

- **Default:** empty string

Default name for the folder of newly added documents. For example, if you want the folder of your documents to be named after the format `author-title` then you should set it to the papis format: `{doc[author]}-{doc[title]}`. Per default a hash followed by the author name is created.

### add-file-name (*config-settings-add-file-name*)

- **Default:** None

Same as `add-folder-name`, but for files, not folders. If it is not set, the names of the files will be cleaned and taken *as-is*.

### add-interactive (*config-settings-add-interactive*)

- **Default:** False

If set to True, every time you run `papis add` the flag `--interactive` will be added automatically. If is set to True and you add it, i.e., you run `papis add --interactive`, then it will have the contrary effect, i.e., it will not run in interactive mode.

### add-edit (*config-settings-add-edit*)

- **Default:** False

If set to True, every time you run `papis add` the flag `--edit` will be added automatically. If it is set to True and you add something, i.e., you run `papis add --edit`, then it will have the contrary effect, i.e., it will not prompt to edit the info file.

### add-open (*config-settings-add-open*)

- **Default:** False

If set to True, every time you run `papis add` the flag `--open` will be added automatically. If it is set to True and you add something, i.e., you run `papis add --open`, then it will have the contrary effect, i.e., it will not open the attached files before adding the document to the library.

## 3.6 papis browse options

### browse-key (*config-settings-browse-key*)

- **Default:** url

This command provides the key that is used to generate the url. For users that run `papis add --from-doi`, setting `browse-key` to `doi` constructs the url from `dx.doi.org/DOI`, providing a much more accurate url.

Default value is set to `url`. If you need functionality with the `search-engine` option, set the option to an empty string e.g.

```
browse-key = ''
```

## 3.7 papis edit options

### notes-name (*config-settings-notes-name*)

- **Default:** notes.tex

In `papis edit` you can edit notes about the document. `notes-name` is the default name of the notes file, which by default is supposed to be a TeX file.

## 3.8 Marks

### open-mark (*config-settings-open-mark*)

- **Default:** False

If this option is set to `True`, every time `papis` opens a document it will ask to open a mark first. If it is set to `False`, then doing

```
papis open --mark
```

will avoid opening a mark.

### mark-key-name (*config-settings-mark-key-name*)

- **Default:** marks

This is the default key name for the marks in the info file. For example, if you set `mark-key-name = bookmarks` then you would have in your `info.yaml` file

```
author: J. Krishnamurti
bookmarks:
- name: Chapter 1
  value: 120
```

### mark-format-name (*config-settings-mark-format-name*)

- **Default:** mark

This is the name of the mark to be passed to the options `mark-header-format` etc... E.g. if you set `mark-format-name = m` then you could set `mark-header-format = {m[value]} - {m[name]}`.

### mark-header-format (*config-settings-mark-header-format*)

- **Default:** {mark[name]} - {mark[value]}

This is the format in which the mark will appear whenever the user has to pick one. You can change this in order to make marks work in the way you like. Per default it is assumed that every mark has a `name` and a `value` key.

**mark-match-format** (*config-settings-mark-match-format*)

- **Default:** `{mark[name]} - {mark[value]}`

Format in which the mark name has to match the user input.

**mark-opener-format** (*config-settings-mark-opener-format*)

- **Default:** `xdg-open`

Due to the difficulty to generalize opening a general document at a given bookmark, the user should set this in whichever way it suits their needs. For example

- If you are using the pdf viewer `evince` and you want to open a mark, you would use

```
mark-opener-format = evince -p {mark[value]}
```

- If you are using `okular` you would use

```
mark-opener-format = okular -p {mark[value]}
```

- If you are using `zathura`, do

```
mark-opener-format = zathura -P {mark[value]}
```

## 3.9 Downloaders

**downloader-proxy** (*config-settings-downloader-proxy*)

- **Default:** `None`

There is the possibility of download papers using a proxy. To know more you can checkout this [link](#).

## 3.10 Databases

**default-query-string** (*config-settings-default-query-string*)

- **Default:** `.`

This is the default query that a command will take if no query string is typed in the command line. For example this is the query that is passed to the command `open` whenever no search string is typed:

```
papis open
```

Imagine you want to open all papers authored by `John Smith` whenever you do not specify an input query string, i.e., `papis open`. Then setting

```
default-query-string = author:"John Smith"
```

would do the trick. Notice that the current example has been done assuming the `database-backend = papis`.

**database-backend** (*config-settings-database-backend*)

- **Default:** `papis`

The backend to use in the database. As for now papis supports the own database system `papis` and `whoosh`.

**use-cache** (*config-settings-use-cache*)

- **Default:** `True`

Set to `False` if you do not want to use the `cache` for the given library. This is only effective if you're using the `papis` database-backend.

**cache-dir** (*config-settings-cache-dir*)

- **Default:** `$XDG_CACHE_HOME`

**whoosh-schema-fields** (*config-settings-whoosh-schema-fields*)

- **Default:** `['doi']`

Python list with the `TEXT` fields that should be included in the `whoosh` database schema. For instance, say that you want to be able to search for the `doi` and `ref` of the documents, then you could include

```
whoosh-schema-fields = ['doi', 'ref']
```

**whoosh-schema-prototype** (*config-settings-whoosh-schema-prototype*)

- **Default:**

```
{
  "author": TEXT(stored=True),
  "title": TEXT(stored=True),
  "year": TEXT(stored=True),
  "tags": TEXT(stored=True),
}
```

This is the model for the `whoosh` schema, check [the documentation](#) for more information.

## 3.11 Terminal user interface (picker)

These options are for the terminal user interface (`tui`). They are defined in the section `tui` which means that you can set them in your configuration file globally like

```
[tui]
status_line_format = "F1: Help"
...
```

or inside the library sections prepending a `tui-`,

```
[papers]
tui-status_line_format = "Library papers**"
...
```

**status\_line\_format** (*config-tui-status\_line\_format*)

- **Default:** ```{selected_index}/{number_of_documents} F1:help c-l:redraw ```

This is the format of the string that appears at the bottom in the status line. Right now there are only two variables defined:

- `selected_index`
- `number_of_documents`

Which are self-explanatory.

**status\_line\_style** (*config-tui-status\_line\_style*)

- **Default:** `bg:ansiwhite fg:ansiblack`

The style the status line should have. Examples are `fg:#ff00aa bg:black` etc... More information can be found [here](#).

**message\_toolbar\_style** (*config-tui-message\_toolbar\_style*)

- **Default:** `bg:ansiyellow fg:ansiblack`

The style of the message toolbar, this toolbar is the one where messages of the `echo` command are rendered for instance.

**options\_list.selected\_margin\_style** (*config-tui-options\_list.selected\_margin\_style*)

- **Default:** `bg:ansiblack fg:ansigreen`

Style of the margin of the selected document in the picker.

**options\_list.unselected\_margin\_style** (*config-tui-options\_list.unselected\_margin\_style*)

- **Default:** `bg:ansiwhite`

Style of the margin of the unselected documents in the picker. If you don't want any coloring for them you can just set this setting to the empty string as such

```
tui-options_list.unselected_margin_style =
```

**error\_toolbar\_style** (*config-tui-error\_toolbar\_style*)

- **Default:** `bg:ansired fg:ansiblack`

The style for the error messages.

**editmode** (*config-tui-editmode*)

- **Default:** `emacs`

Whenever the user is typing text, one can use either `emacs` like keybindings or `vi`. If this does not tell you anything, you can just leave it as is.

**move\_down\_key** (*config-tui-move\_down\_key*)

- **Default:** `down`

**move\_up\_key** (*config-tui-move\_up\_key*)

- **Default:** `up`

**move\_down\_while\_info\_window\_active\_key** (*config-tui-move\_down\_while\_info\_window\_active\_key*)

- **Default:** `c-n`

**move\_up\_while\_info\_window\_active\_key** (*config-tui-move\_up\_while\_info\_window\_active\_key*)

- **Default:** `c-p`

**focus\_command\_line\_key** (*config-tui-focus\_command\_line\_key*)

- **Default:** `tab`

**edit\_document\_key** (*config-tui-edit\_document\_key*)

- **Default:** `c-e`

**open\_document\_key** (*config-tui-open\_document\_key*)

- **Default:** c-o

**show\_help\_key** (*config-tui-show\_help\_key*)

- **Default:** f1

**show\_info\_key** (*config-tui-show\_info\_key*)

- **Default:** s-tab

**go\_top\_key** (*config-tui-go\_top\_key*)

- **Default:** home

**go\_bottom\_key** (*config-tui-go\_bottom\_key*)

- **Default:** end

## 3.12 Other

**unique-document-keys** (*config-settings-unique-document-keys*)

- **Default:** ['doi', 'ref', 'isbn', 'isbn10', 'url', 'doc\_url']

Whenever you add a new document, papis tries to figure out if you have already added this document before. This is partially done checking for some special keys, and checking if they match. Which keys are checked against is decided by this option, which should be formatted as a python list, just as in the default value.

For instance, if you add a paper with a given doi, and then you add another document with the same doi, then papis will notify you that there is already another document with this doi because the doi key is part of the unique-document-keys option.

**document-description-format** (*config-settings-document-description-format*)

- **Default:** {doc[title]} - {doc[author]}

papis sometimes will have to tell you which document it is processing through text, for instance, imagine you are updating a document

```
author: Albert Einstein
title: General Relativity
```

and papis is doing something with it. Then if your document-description-format is set to {doc[title]} - {doc[author]}, you will see that papis tells you

```
.....
Updating 'General Relativity - Albert Einstein'
...
```

so you will know exactly what is going on.

**sort-field** (*config-settings-sort-field*)

- **Default:** None

As of version 0.10, some command line commands have the --sort option to sort the documents according to a given field. If you set sort-field in your configuration file, this will sort by default the documents according to this sort field. For instance, if you want your documents by default to be sorted by year, you would set sort-field = year.

**time-stamp** (*config-settings-time-stamp*)

- **Default:** True



Whether or not to add a timestamp to a document when it is being added to papis. If documents have a timestamp, then they will be sortable using `-sort time-added` option.



## THE INFO.YAML FILE

At the heart of papis there is the information file. The info file contains all information about the documents.

It uses the `yaml` syntax to store information, which is a very human-readable language. It is quite format-free: *papis* does not assume that any special information should be there.

If you are storing papers with papis, then you most probably would like to store author and title in there like this:

```
author: Isaac Newton
title: Opticks, or a treatise of the reflections refractions, inflections and
      colours of light
files:
  - document.pdf
```



## THE LIBRARY STRUCTURE

One of the things that makes papis interesting is the fact that its library structure is nearly nonexistent.

A papis library is linked to a directory, where all the documents are (and possibly sublibraries). What papis does is simply to go to the library folder and look for all subfolders that contain a information file, which by default is a `info.yaml` file.

Every subfolder that has an `info.yaml` file in it is a valid papis document. As an example let us consider the following library

```
/home/fulano/Documents/papers/
├── folder1
│   └── paper.pdf
├── folder2
│   ├── folder3
│   │   ├── info.yaml
│   │   └── blahblahblah.pdf
│   └── folder4
│       ├── info.yaml
│       └── output.pdf
├── classics
│   └── folder5
│       ├── info.yaml
│       └── output.pdf
├── physics
│   └── newton
│       └── principia
│           ├── document.pdf
│           ├── supplements.pdf
│           └── info.yaml
└── rpa
    └── bohms
        ├── info.yaml
        ├── notes.tex
        └── output.pdf
```

The first thing that you might notice is that there are many folders. Just to check that you understand exactly what is a document, please think about which of these pdfs is not a valid papis document... That's right!, `folder1/paper.pdf` is not a valid document since the `folder1` does not contain any `info.yaml` file. You see also that it does not matter how deep the folder structure is in your library: you can have a `physics` folder in which you have a `newton` folder in which you have a folder containing the actual book `document.pdf` plus some supplementary information `supplements.pdf`. In this case, inside the `info.yaml` you would have the following file section

```
files:  
- document.pdf  
- supplements.pdf
```

which tells papis that this folder contains two relevant files.

## THE DATABASE

One of the things that makes papis interesting is the fact that there can be many backends for the database system, including no database.

Right now there are three types of databases that the user can use:

- **No database**

```
database-backend = papis
use-cache = False
```

- Simple cache based database - Configuration option

```
database-backend = papis
```

- **Whoosh based database.**

```
database-backend = whoosh
```

If you just plan to have up to 3000 documents in your library, you will have ample performance with the two first options. However if you're reaching higher numbers, you'll probably want to use the `Whoosh` backend for very good performance.

You can select a database by using the flag `database-backend`.

### 6.1 Papis database

The fact that there is no database means that papis should crawl through the library folder and see which folders have an `info.yaml` file, which is for slow computers (and harddrives) quite bad.

Papis implements a very rudimentary caching system. A cache is created for every library. Inside the cache the whole information already converted into python is stored.

These cache files are stored per default in

```
~/ .cache/papis/
```

Notice that most papis commands will update the cache if it has to be the case. For instance the `edit` command will let you edit your document's information and after you are done editing it will update the information for the given document in the cache. If you go directly to the document and edit the `info` file without passing through the papis `edit` command, the cache will not be updated and therefore papis will not know of these changes, although they will be there. In such cases you will have to *clear the cache*.

### 6.1.1 Clearing the cache

To clear the cache for a given library you can use the flag `--clear-cache`, e.g.

```
papis --clear-cache
```

### 6.1.2 Query language

Since version *0.3* there is a query language in place for the searching of documents. The queries can contain any field of the info file, e.g., `author:einstein publisher : review` will match documents that have a matching author with `einstein` AND have a publisher matching `review`. The AND part here is important, since only the AND filter is implemented in this simple query language. At the moment it is not possible to do an OR. If you need this, you should consider using the *Whoosh database*.

For illustration, here are some examples:

- Open documents where the author key matches ‘albert’ (ignoring case) and year matches ‘19’ (i.e., 1990, 2019, 1920):

```
papis open 'author : albert year : 05'
```

- Add the restriction to the previous search that the usual matching matches the substring ‘licht’ in addition to the previously selected

```
papis open 'author : albert year : 05 licht'
```

This is not to be mixed with the restriction that the key `year` matches ‘*05 licht*’, which will not match any year, i.e.

```
papis open 'author : albert year : "05 licht"'
```

### 6.1.3 Disabling the cache

You can disable the cache using the configuration setting `use-cache` and set it to `False`, e.g.

```
[settings]
use-cache = False

[books]
# Use cache for books but don't use for the rest of libraries
use-cache = True
```

## 6.2 Whoosh database

Papis has also the possibility to use the blazing fast and pure python *Whoosh library*. Its performance is orders of magnitude better than the crude cache based database.

Of course, the performance comes at a cost. To achieve more performance a database backend should create an index with information about the documents. Parsing a user query means going to the index and matching the query to what is found in the index. This means that the index can not in general have all the information that the info file of the documents includes.



In other words, the whoosh index will store only certain fields from the document's info files. The good news is that we can tell papis exactly which fields we want to index. These flags are

- whoosh-schema-fields
- whoosh-schema-prototype

The prototype is for advanced users. If you just want to, say, include the publisher to the fields that you can search in, then you can put

```
whoosh-schema-fields = ['publisher']
```

and you will be able to find documents by their publisher. For example, without this line set for publisher, the query

```
papis open publisher:*
```

will not return anything, since the publisher field is not being stored.

### 6.2.1 Query language

The whoosh database uses the whoosh query language which is much more advanced than the query language in the *Papis database*.

The whoosh query language supports both AND and OR, for instance

```
papis open '(author:einstein AND year:1905) OR title:einstein'
```

will give papers of einstein in the year 1905 together with all papers where einstein appears in the title.

You can read more about the whoosh query language [here](#).



## COMMANDS

### 7.1 Add

The add command is one of the central commands of the papis command line interface. It is a very versatile command with a fair amount of options.

There are also customization settings available for this command, check out the configuration page for add.

#### 7.1.1 Examples

- Add a document located in `~/Documents/interesting.pdf` and name the folder where it will be stored in the database `interesting-paper-2021`

```
papis add ~/Documents/interesting.pdf \  
  --folder-name interesting-paper-2021
```

if you want to add directly some key values, like author, title and tags, you can also run the following:

```
papis add ~/Documents/interesting.pdf \  
  --folder-name interesting-paper-2021 \  
  --set author 'John Smith' \  
  --set title 'The interesting life of bees' \  
  --set year 1985 \  
  --set tags 'biology interesting bees'
```

- Add a paper that you have locally in a file and get the paper information through its doi identifier (in this case `10.10763/1.3237134` as an example):

```
papis add ~/Documents/interesting.pdf --from doi 10.10763/1.3237134
```

- Add paper to a library named `machine-learning` from `arxiv.org`

```
papis -l machine-learning add \  
  --from url https://arxiv.org/abs/1712.03134
```

- If you do not want copy the original pdfs into the library, you can also tell papis to just create a link to them, for example

```
papis add --link ~/Documents/interesting.pdf \  
  --from doi 10.10763/1.3237134
```

will add an entry into the papis library, but the pdf document will remain at `~/Documents/interesting.pdf`, and in the document's folder there will be a link to `~/Documents/interesting.pdf` instead of the

file itself. Of course you always have to be sure that the document at `~/Documents/interesting.pdf` does not disappear, otherwise you will end up without a document to open.

- Papis also tries to make sense of the inputs that you have passed to the command, for instance you could provide only a doi and papis will try to know if this is indeed a doi

```
papis add 10.1103/PhysRevLett.123.156401
```

or from a url

```
papis add journals.aps.org/prl/abstract/10.1103/PhysRevLett.123.156401
```

## 7.1.2 Examples in python

There is a python function in the add module that can be used to interact in a more effective way in python scripts,

```
papis.commands.add.run(paths: List[str], data: Dict[str, Any] = {}, folder_name: Optional[str] = None, file_name: Optional[str] = None, subfolder: Optional[str] = None, confirm: bool = False, open_file: bool = False, edit: bool = False, git: bool = False, link: bool = False) → None
```

### Parameters

- **paths** (*list*) – Paths to the documents to be added
- **data** (*dict*) – Data for the document to be added. If more data is to be retrieved from other sources, the data dictionary will be updated from these sources.
- **folder\_name** (*str*) – Name of the folder where the document will be stored
- **file\_name** (*str*) – File name of the document's files to be stored.
- **subfolder** (*str*) – Folder within the library where the document's folder should be stored.
- **confirm** (*bool*) – Wether or not to ask user for confirmation before adding.
- **open\_file** (*bool*) – Wether or not to ask user for opening file before adding.
- **edit** (*bool*) – Wether or not to ask user for editing the infor file before adding.
- **git** (*bool*) – Wether or not to ask user for committing before adding, in the case of course that the library is a git repository.

## 7.1.3 Cli

### papis add

Add a document into a given library

```
papis add [OPTIONS] [FILES]...
```

## Options

- h, --help**  
Show this message and exit.
- s, --set** <set\_list>  
Set some information before
- d, --subfolder** <subfolder>  
Subfolder in the library
- folder-name** <folder\_name>  
Name for the document's folder (papis format)
- file-name** <file\_name>  
File name for the document (papis format)
- from** <from\_importer>  
Add document from a specific importer (crossref, doi, arxiv, bibtex, yaml, pdf2arxiv, pmid, pdf2doi, lib, folder)
- b, --batch**  
Batch mode, do not prompt or otherwise
- confirm, --no-confirm**  
Ask to confirm before adding to the collection
- open, --no-open**  
Open file before adding document
- edit, --no-edit**  
Edit info file before adding document
- link, --no-link**  
Instead of copying the file to the library, create a link to its original location
- git, --no-git**  
Git add and commit the new document
- list-importers, --li**  
List all available papis importers

## Arguments

### FILES

Optional argument(s)

## 7.2 Addto

This command adds files to existing papis documents in some library.

For instance imagine you have two pdf files, a.pdf and b.pdf that you want to add to a document that matches with the query string `einstein photon definition`, then you would use

```
papis addto 'einstein photon definition' -f a.pdf -f b.pdf
```

notice that we repeat two times the flag `-f`, this is important.

## 7.2.1 Cli

### papis addto

Add files to an existing document

```
papis addto [OPTIONS] [QUERY]
```

#### Options

- h, --help**  
Show this message and exit.
- git, --no-git**  
Add and commit files
- sort <sort\_field>**  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order
- f, --files <files>**  
File fullpaths to documents
- file-name <file\_name>**  
File name for the document (papis format)

#### Arguments

- QUERY**  
Optional argument

## 7.3 Browse

This command will try its best to find a source in the internet for the document at hand.

Of course if the document has an url key in its info file, it will use this url to open it in a browser. Also if it has a doc\_url key, or a doi, it will try to compose urls out of these to open it.

If none of the above work, then it will try to use a search engine with the document's information (using the browse-query-format). You can select wich search engine you want to use using the search-engine setting.

### 7.3.1 Cli

#### papis browse

Open document's url in a browser

```
papis browse [OPTIONS] [QUERY]
```

## Options

- h, --help**  
Show this message and exit.
- sort** <sort\_field>  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order
- k, --key** <key>  
Use the value of the document's key to open in the browser, e.g.doi, url, doc\_url ...
- a, --all**  
Apply action to all matching documents

## Arguments

- QUERY**  
Optional argument

## 7.4 Bibtex

This command helps to interact with *bib* files in your LaTeX projects.

### 7.4.1 Examples

```
papis bibtex \
  read new_papers.bib \ # Read bib file
  cmd 'papis add --from-doi {doc[doi]}' # For every entry run the command
```

I use it for opening some papers for instance

```
papis bibtex read new_papers.bib open
```

or to add papers to the bib

```
papis bibtex \
  read new_papers.bib \ # Read bib file
  add einstein \ # Pick a doc with query 'einstein' from library
  add heisenberg \ # Pick a doc with query 'heisenberg' from library
  save new_papers.bib # Save in new_papers.bib
```

or if I update some information in my papis yaml files then I can do

```
papis bibtex \
  read new_papers.bib \ # Read bib file
  update -f \ # Update what has been read from papis library
  save new_papers.bib # save everything to new_papers.bib, overwriting
```

Maybe this is also interesting for you guys!

## 7.4.2 Vim integration

Right now, you can easily use it from vim with these simple lines

```
function! PapisBibtexRef()
  let l:temp = tempname()
  echom l:temp
  silent exec "!papis bibtex ref -o ".l:temp
  let l:olda = @a
  let @a = join(readfile(l:temp), ',')
  normal! "ap
  redraw!
  let @a = l:olda
endfunction

command! -nargs=0 BibRef call PapisBibtexRef()
command! -nargs=0 BibOpen exec "!papis bibtex open"
```

And use like such:

## 7.4.3 Cli

### papis add

Add a document into a given library

```
papis add [OPTIONS] [FILES]...
```

### Options

- h, --help**  
Show this message and exit.
- s, --set <set\_list>**  
Set some information before
- d, --subfolder <subfolder>**  
Subfolder in the library
- folder-name <folder\_name>**  
Name for the document's folder (papis format)
- file-name <file\_name>**  
File name for the document (papis format)
- from <from\_importer>**  
Add document from a specific importer (crossref, doi, arxiv, bibtex, yaml, pdf2arxiv, pmid, pdf2doi, lib, folder)
- b, --batch**  
Batch mode, do not prompt or otherwise
- confirm, --no-confirm**  
Ask to confirm before adding to the collection
- open, --no-open**  
Open file before adding document



- edit, --no-edit**  
Edit info file before adding document
- link, --no-link**  
Instead of copying the file to the library, create a link to its original location
- git, --no-git**  
Git add and commit the new document
- list-importers, --li**  
List all available papis importers

## Arguments

### FILES

Optional argument(s)

## 7.5 Config

The command `config` is a useful command because it allows you to check the configuration settings' values that your current *papis* session is using.

For example let's say that you want to see which `dir` setting your current library is using (i.e., the directory or the `dir` that appears in the definition of the library in the configuration file), then you would simply do:

```
papis config dir
```

If you wanted to see which `dir` the library `books` has, for example then you would do

```
papis -l books config dir
```

This works as well for default settings, i.e., settings that you have not customized, for example the setting `match-format`, you would check it with

```
papis config match-format
> {doc[tags]}{doc.subfolder}{doc[title]}{doc[author]}{doc[year]}
```

You can find a list of all available settings in the configuration section.

### 7.5.1 Cli

#### **papis config**

Print configuration values

```
papis config [OPTIONS] OPTION
```

## Options

**-h, --help**  
Show this message and exit.

## Arguments

**OPTION**  
Required argument

## 7.6 Main

### 7.6.1 Examples

- To override some configuration options, you can use the flag `--set`, for instance, if you want to override the editor used and the opentool to open documents, you can just type

```
papis --set editor gedit --set opentool firefox edit
papis --set editor gedit --set opentool firefox open
```

- If you want to list the libraries and pick one before sending a database query to papis, use `--pick-lib` as such

```
papis --pick-lib open 'einstein relativity'
```

### 7.6.2 Cli

#### papis

```
papis [OPTIONS] COMMAND [ARGS]...
```

#### Options

**-h, --help**  
Show this message and exit.

**--version**  
Show the version and exit.

**-v, --verbose**  
Make the output verbose (equivalent to `-log DEBUG`)

**--profile <profile>**  
Print profiling information into file

**-l, --lib <lib>**  
Choose a library name or library path (unnamed library)

**-c, --config <config>**  
Configuration file to use

**--pick-lib**  
Pick library to use

**--cc, --clear-cache**  
Clear cache of the library used

**-s, --set** <set\_list>  
Set key value, e.g., `--set info-name information.yaml --set opentool evince`

**--color** <color>  
Prevent the output from having color

**Options** `alwayslautolno`

**--log** <log>  
Logging level

**Options** `INFO|DEBUG|WARNING|ERROR|CRITICAL`

**--logfile** <logfile>  
File to dump the log

## 7.7 Edit

This command edits the information of the documents. The editor used is defined by the `editor` configuration setting.

### 7.7.1 Cli

#### papis edit

Edit document information from a given library

```
papis edit [OPTIONS] [QUERY]
```

#### Options

**-h, --help**  
Show this message and exit.

**--doc-folder** <doc\_folder>  
Apply action to a document path

**--git, --no-git**  
Add changes made to the info file

**--sort** <sort\_field>  
Sort documents with respect to FIELD

**--reverse**  
Reverse sort order

**-n, --notes**  
Edit notes associated to the document

**-a, --all**  
Apply action to all matching documents

**-e, --editor** <editor>  
Editor to be used

## Arguments

**QUERY**  
Optional argument

## 7.8 Explore

This command is in an experimental stage but it might be useful for many people.

Imagine you want to search for some papers online, but you don't want to go into a browser and look for it. Explore gives you way to do this, using several services available online, more should be coming on the way.

An excellent such resource is [crossref](#), which you can use by using the subcommand `crossref`:

```
papis explore crossref --author 'Freeman Dyson'
```

If you issue this command, you will see some text but basically nothing will happen. This is because `explore` is conceived in such a way as to concatenate commands, doing a simple

```
papis explore crossref -h
```

will tell you which commands are available. Let us suppose that you want to look for some documents on `crossref`, say some papers of Schrodinger, and you want to store them into a bibtex file called `lib.bib`, then you could concatenate the commands `crossref` and `export --format bibtex` as such

```
papis explore crossref -a 'Schrodinger' export --format bibtex lib.bib
```

This will store everything that you got from `crossref` in the file `lib.bib` and store in bibtex format. `explore` is much more flexible than that, you can also pick just one document to store, for instance let's assume that you don't want to store all retrieved documents but only one that you pick, the `pick` command will take care of it

```
papis explore crossref -a 'Schrodinger' pick export --format bibtex lib.bib
```

notice how the `pick` command is situated before the `export`. More generally you could write something like

```
papis explore \  
  crossref -a Schrodinger \  
  crossref -a Einstein \  
  arxiv -a 'Felix Hummel' \  
  export --format yaml docs.yaml \  
  pick \  
  export --format bibtex specially-picked-document.bib
```

The upper command will look in `crossref` for documents authored by Schrodinger, then also by Einstein, and will look on the `arxiv` for papers authored by Felix Hummel. At the end, all these documents will be stored in the `docs.yaml`. After that we pick one document from them and store the information in the file `specially-picked-document.bib`, and we could go on and on.

If you want to follow-up on these documents and get them again to pick one, you could use the `yaml` command to read in document information from a `yaml` file, i.e., the previously created `docs.yaml`

```
papis explore \
  yaml docs.yaml \
  pick \
  cmd 'papis scihub {doc[doi]}' \
  cmd 'firefox {doc[url}]'
```

In this last example, we read the documents' information from `docs.yaml` and pick a document, which then feed into the `explore` cmd command, that accepts a papis formatting string to issue a general shell command. In this case, the picked document gets fed into the `papis scihub` command which tries to download the document using `scihub`, and also this very document is tried to be opened by `firefox` (in case the document does have a `url`).

## 7.8.1 Cli

### papis explore

Explore new documents using a variety of resources

```
papis explore [OPTIONS] COMMAND1 [ARGS]... [COMMAND2 [ARGS]...]...
```

#### Options

**-h, --help**  
Show this message and exit.

#### arxiv

Look for documents on ArXiv.org.

Examples of its usage are

```
papis explore arxiv -a 'Hummel' -m 100 arxiv -a 'Garnet Chan' pick
```

If you want to search for the exact author name 'John Smith', you should enclose it in extra quotes, as in the example below

```
papis explore arxiv -a "John Smith" pick
```

```
papis explore arxiv [OPTIONS]
```

#### Options

**-h, --help**  
Show this message and exit.

**-q, --query** <query>

**-a, --author** <author>

**-t, --title** <title>

**--abstract** <abstract>

**--comment** <comment>

**--journal** <journal>

```
--report-number <report_number>
--category <category>
--id-list <id_list>
--page <page>
-m, --max <max>
```

## base

Look for documents on the BielefeldAcademicSearchEngine

Examples of its usage are

```
papis explore base -q 'Albert einstein' pick cmd 'firefox {doc[url}]'
```

```
papis explore base [OPTIONS]
```

## Options

```
-h, --help
    Show this message and exit.
-q, --query <query>
```

## bibtex

Import documents from a bibtex file

Examples of its usage are

```
papis explore bibtex lib.bib pick
```

```
papis explore bibtex [OPTIONS] BIBFILE
```

## Options

```
-h, --help
    Show this message and exit.
```

## Arguments

```
BIBFILE
    Required argument
```

## citations

Query the citations of a paper

Example:

Go through the citations of a paper and export it in a yaml file

```
papis explore citations 'einstein' export --format yaml einstein.yaml
```

```
papis explore citations [OPTIONS] [QUERY]
```

## Options

**--doc-folder** <doc\_folder>  
Apply action to a document path

**-h, --help**  
Show this message and exit.

**-s, --save**  
Store the citations in the document's folder for later use

**--rmfile**  
Remove the stored citations file

**-m, --max-citations** <max\_citations>  
Number of citations to be retrieved

## Arguments

**QUERY**  
Optional argument

## cmd

Run a general command on the document list

Examples of its usage are:

Look for 200 Schroedinger papers, pick one, and add it via papis-scihub

```
papis explore crossref -m 200 -a 'Schrodinger' pick cmd 'papis scihub {doc[doi]}'
```

```
papis explore cmd [OPTIONS] COMMAND
```

## Options

**-h, --help**  
Show this message and exit.

## Arguments

**COMMAND**  
Required argument

## crossref

Look for documents on crossref.org.

Examples of its usage are

papis explore crossref -a 'Albert einstein' pick export -bibtex lib.bib

```
papis explore crossref [OPTIONS]
```

## Options

**-h, --help**  
Show this message and exit.

**-q, --query** <query>  
General query

**-a, --author** <author>  
Author of the query

**-t, --title** <title>  
Title of the query

**-m, --max** <\_ma>  
Maximum number of results

**-f, --filter** <\_filters>  
Filters to apply

**-o, --order** <order>  
Order of appearance according to sorting [default: desc]

**Options** ascldesc

**-s, --sort** <sort>  
Sorting parameter [default: score]

**Options** relevancescore|updated|deposited|indexed|published|published-print|published-online|issued|is-referenced-by-count|references-count



## dissemin

Look for documents on dissemin.in

Examples of its usage are

```
papis explore dissemin -q 'Albert einstein' pick cmd 'firefox {doc[url}]'
```

```
papis explore dissemin [OPTIONS]
```

### Options

**-h, --help**  
Show this message and exit.

**-q, --query** <query>

## export

Export retrieved documents into various formats for later use

Examples of its usage are

```
papis explore crossref -m 200 -a 'Schrodinger' export -yaml lib.yaml
```

```
papis explore export [OPTIONS]
```

### Options

**-h, --help**  
Show this message and exit.

**-f, --format** <fmt>  
Format for the document

**Options** yamllibtextljson

**-o, --out** <out>  
Outfile to write information to

## isbn

Look for documents using isbnlib

Examples of its usage are

```
papis explore isbn -q 'Albert einstein' pick cmd 'firefox {doc[url}]'
```

```
papis explore isbn [OPTIONS]
```

## Options

- h, --help**  
Show this message and exit.
- q, --query** <query>
- s, --service** <service>  
**Options** wcat|gooblopen|

## isbnplus

Look for documents on isbnplus.com

Examples of its usage are

```
papis explore isbnplus -q 'Albert einstein' pick cmd 'firefox {doc[url}]'
```

```
papis explore isbnplus [OPTIONS]
```

## Options

- h, --help**  
Show this message and exit.
- q, --query** <query>
- a, --author** <author>
- t, --title** <title>

## json

Import documents from a json file

Examples of its usage are

```
papis explore json lib.json pick
```

```
papis explore json [OPTIONS] JSONFILE
```

## Options

- h, --help**  
Show this message and exit.

## Arguments

### JSONFILE

Required argument

### lib

Query for documents in your library

Examples of its usage are

```
papis lib -l books einstein pick
```

```
papis explore lib [OPTIONS] [QUERY]
```

## Options

### -h, --help

Show this message and exit.

### --doc-folder <doc\_folder>

Apply action to a document path

### -l, --library <library>

Papis library to look

## Arguments

### QUERY

Optional argument

### pick

Pick a document from the retrieved documents

Examples of its usage are

```
papis explore bibtex lib.bib pick
```

```
papis explore pick [OPTIONS]
```

## Options

### -h, --help

Show this message and exit.

### -n, --number <number>

Pick automatically the n-th document

## yaml

Import documents from a yaml file

Examples of its usage are

```
papis explore yaml lib.yaml pick
```

```
papis explore yaml [OPTIONS] YAMLFILE
```

## Options

**-h, --help**

Show this message and exit.

## Arguments

**YAMLFILE**

Required argument

## 7.9 Export

The export command is useful to work with other programs such as bibtex.

Some examples of its usage are:

- Export one of the documents matching the author with einstein to bibtex:

```
papis export --format bibtex 'author : einstein'
```

or export all of them

```
papis export --format bibtex --all 'author : einstein'
```

- Export all documents to bibtex and save them into a lib.bib file

```
papis export --all --format bibtex --out lib.bib
```

- Export a folder of one of the documents matching the word krebs into a folder named, interesting-document

```
papis export --folder --out interesting-document krebs
```

this will create the folder ``interesting-document`` containing the ``info.yaml`` file, the linked documents and a ``bibtex`` file for sharing with other people.

## 7.9.1 Cli

### papis export

Export a document from a given library

```
papis export [OPTIONS] [QUERY]
```

#### Options

- h, --help**  
Show this message and exit.
- doc-folder** <doc\_folder>  
Apply action to a document path
- sort** <sort\_field>  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order
- a, --all**  
Apply action to all matching documents
- folder**  
Export document folder to share
- o, --out** <out>  
Outfile or outdir
- f, --format** <fmt>  
Format for the document

**Options** yamllbibtextjson

#### Arguments

- QUERY**  
Optional argument

## 7.10 Git

This command is useful if your library is itself a git repository. You can use this command to issue git commands in your library repository without having to change your current directory.

## 7.10.1 CLI Examples

- Check the status of the library repository:

```
papis git status
```

- Commit all changes:

```
papis git commit -a
```

## 7.11 List

This command is to list contents of a library.

### 7.11.1 CLI Examples

- List all document files associated with all entries:

```
papis list --all --file
```

- List all document year and title with custom formatting:

```
papis list --all --format '{doc[year]} {doc[title]}'
```

- List all documents according to the bibitem formatting (stored in a template file `bibitem.template`):

```
papis list --all --template bibitem.template
```

### 7.11.2 Cli

#### papis list

List documents' properties

```
papis list [OPTIONS] [QUERY]
```

#### Options

**-h, --help**

Show this message and exit.

**--sort** <sort\_field>

Sort documents with respect to FIELD

**--reverse**

Reverse sort order

**-i, --info**

Show the info file name associated with the document

**-f, --file**

Show the file name associated with the document

- d, --dir**  
Show the folder name associated with the document
- n, --notes**  
List notes files, if any
- format** <\_format>  
List entries using a custom papis format, e.g. '{doc[year] {doc[title]}'
- template** <template>  
Template file containing a papis format to list entries
- downloaders**  
List available downloaders
- libraries**  
List defined libraries
- a, --all**  
Apply action to all matching documents

## Arguments

- QUERY**  
Optional argument

## 7.12 Mv

### 7.12.1 Cli

#### papis mv

Move a document into some other path

```
papis mv [OPTIONS] [QUERY]
```

## Options

- h, --help**  
Show this message and exit.
- git, --no-git**  
Add git interoperability
- sort** <sort\_field>  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order

## Arguments

### QUERY

Optional argument

## 7.13 Open

The open command is a very important command in the papis workflow. With it you can open documents, folders or marks.

### 7.13.1 Marks

One of special things about this command is the possibility of creating marks for documents. As you would imagine, it is in general difficult to create marks for any kind of data. For instance, if our library consists of pdf files and epub files for instance, we would like to define bookmarks in order to go back to them at some later point.

How you define marks can be customized through the marks configuration settings here. The default way of doing it is just by defining a marks list in a document. Let us look at a concrete example:

```
author: Isaiah Shavitt, Rodney J. Bartlett
edition: '1'
files: [book.pdf]
isbn: 052181832X,9780521818322

marks:
- {name: Intermediates definition, value: 344}
- {name: EOM equations, value: 455}

publisher: Cambridge University Press
ref: book:293288
series: Cambridge Molecular Science
title: 'Many-Body Methods in Chemistry and Physics'
type: book
year: '2009'
```

This book has defined two marks. Each mark has a name and a value. If you tell the open command to open marks, then it will look for the marks and open the value (page number). This is the default behaviour, however if you go to the configuration you'll see that you can change the convention to what it suits you.

### 7.13.2 Examples

- Open a pdf file linked to a document matching the string bohm

```
papis open bohm
```

- Open the folder where this last document is stored

```
papis open -d bohm
```

Please notice that the file browser used will be also related to the file-browser setting.

- Open a mark defined in the info file



```
papis open --mark bohm
```

### 7.13.3 Cli

#### papis open

Open document from a given library

```
papis open [OPTIONS] [QUERY]
```

#### Options

- h, --help**  
Show this message and exit.
- sort** <sort\_field>  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order
- doc-folder** <doc\_folder>  
Apply action to a document path
- a, --all**  
Apply action to all matching documents
- tool** <tool>  
Tool for opening the file (opentool)
- d, --dir**  
Open directory
- m, --mark, --no-mark**  
Open mark

#### Arguments

- QUERY**  
Optional argument

## 7.14 Rename

### 7.14.1 Cli

#### papis rename

Rename entry

```
papis rename [OPTIONS] [QUERY]
```

## Options

- h, --help**  
Show this message and exit.
- git, --no-git**  
Add git interoperability
- sort <sort\_field>**  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order

## Arguments

- QUERY**  
Optional argument

## 7.15 Rm

### 7.15.1 Cli

#### papis rm

Delete a document or a file

```
papis rm [OPTIONS] [QUERY]
```

## Options

- h, --help**  
Show this message and exit.
- git, --no-git**  
Remove in git
- sort <sort\_field>**  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order
- file**  
Remove files from a document instead of the whole folder
- f, --force**  
Do not confirm removal
- a, --all**  
Apply action to all matching documents

## Arguments

### QUERY

Optional argument

## 7.16 Run

This command is useful to issue commands in the directory of your library.

### 7.16.1 CLI Examples

- List files in your directory

```
papis run ls
```

- Find a file in your directory using the find command

```
papis run find -name 'document.pdf'
```

- Find all pdfs in the document folders matching einstein

```
papis run -p einstein --all -- find . -name '*.pdf'
```

notice that in general, the symbol ``--`` is advisable so that the arguments after it are considered as positional arguments for the shell commands.

In this example you could also use pipes, for instance to print the absolute path to the files, in linux you can use the command ``readlink -f`` and a pipe ``|`` to do this, i.e.:

```
papis run -p einstein \
  --all -- "find . -name '*.pdf' | xargs readlink -f"
```

### 7.16.2 Cli

#### papis run

Run an arbitrary shell command in the library or command folder

```
papis run [OPTIONS] <COMMANDS>
```

## Options

- h, --help**  
Show this message and exit.
- p, --pick** <pick>  
Give a query to pick a document to run the command in its folder
- sort** <sort\_field>  
Sort documents with respect to FIELD
- reverse**  
Reverse sort order
- doc-folder** <doc\_folder>  
Apply action to a document path
- a, --all**  
Apply action to all matching documents
- prefix** <prefix>  
Prefix shell commands by a prefix command

## Arguments

- <COMMANDS>**  
Optional argument(s)

## 7.17 Update

This command is to update the information of the documents. Some examples of the usage are given below

### 7.17.1 Examples

- Update a document automatically and interactively (searching by doi number in *crossref*, or in other sources...)

```
papis update --auto -i "author : dyson"
```

- Update your library from a bib(la)tex file where many entries are listed. papis will try to look for documents in your library that match these entries and will ask you entry per entry to update it (of course this is done if you use the `-i` flag for interactively doing it). In the example `libraryfile.bib` is a file containing many entries.

```
papis update --from bibtex libraryfile.bib -i
```

- Tag all einstein papers with the tag classics

```
papis update --all --set tags classics einstein
```

and add the tag of physics to all papers tagged as classics

```
papis update --all --set tags '{doc[tags]} physics' einstein
```

## 7.17.2 Cli

### papis update

Update a document from a given library

```
papis update [OPTIONS] [QUERY]
```

#### Options

**-h, --help**

Show this message and exit.

**--git, --no-git**

Add git interoperability

**--doc-folder** <doc\_folder>

Apply action to a document path

**-a, --all**

Apply action to all matching documents

**--sort** <sort\_field>

Sort documents with respect to FIELD

**--reverse**

Reverse sort order

**--auto**

Try to parse information from different sources

**--from** <from\_importer>

Add document from a specific importer (crossref, doi, arxiv, bibtex, yaml, pdf2arxiv, pmid, pdf2doi, lib, folder)

**-s, --set** <set\_tuples>

Update document's information with key value. The value can be a papis format.

#### Arguments

**QUERY**

Optional argument



## GUI

Papis is a program mainly intended for the command line, however, some experimental frontends have been conceived for it and are already downloadable from pip.

See for instance

- [papis-rofi](#)
- [papis-dmenu](#)

And more to come!





## CUSTOM SCRIPTS

As in `git`, you can write custom scripts to include them in the command spectrum of `papis`.

### 9.1 Example: Mail script

Imagine you want to write a script to send papers to someone via the email client `mutt` (you can try to do it with another mail client), you could write the following script called `papis-mail`:

```
#!/usr/bin/env bash
# papis-short-help: Email a paper to my friend

folder_name=$1
zip_name="${folder_name}.zip"

papis -l ${PAPIS_LIB} export --folder --out ${folder_name}
zip -r ${zip_name} ${folder_name}

mutt -a ${zip_name}
```

`Papis` defines environment variables such as `PAPIS_LIB` so that external scripts can make use of the user input.

To use the script you can put it somewhere in your `PATH` or alternatively inside the `~/ .papis/scripts` folder. If this is the case then you can run

```
papis -h
```

and you will see that there is another command besides the default called `mail`. In fact, you will see

```
positional arguments:
  command                For further information for every command, type in 'papis
↪<command> -h'
  add                    Add a document into a given library
  .....
  mail                  Email a paper to my friend

optional arguments:
  -h, --help            show this help message and exit
  ... ..
```

where the description `Email a paper to my friend` is there because we have defined the comment `# papis-short-help: Email a paper to my friend` in the header of the script.

Then, if you type

```
papis -l mylib mail this_paper
```

this will create a folder called `this_paper` with a selection of a document, zip it and send it to whoever you choose to.

## 9.2 Example: Accessing papis from within mutt

You may want to pick documents to attach to your email in `mutt` from the `papis` interface.

Add this code to your `muttrc`

```
# # macro to attach paper from papis
macro attach,compose \cp \
"\
<enter-command>unset wait_key<enter>\          # Don't require 'press_
↳any key'
<shell-escape>rm -f /tmp/paper.pdf<enter>\       # remove the file /tmp/
↳paper.pdf if it already exists
<shell-escape>papis export --file -o /tmp/paper.pdf<enter>\ # start papis with the --
↳file flag
<attach-file>/tmp/paper.pdf<enter>\           # attach the new file_
↳created by papis
"
```

Try it out with `Ctrl-p` on your Compose screen. This makes use of the `papis export --file` flag that moves the paper you choose to a temporary location (`/tmp/paper.pdf`). `Mutt` will then attach the paper to the email, which you can rename to be more descriptive with `R`.

## 9.3 Example: Define papis mode in i3wm

This is an example of using `papis` with the window manager `i3`.

```
# Enter papis mode
bindsym $mod+Ctrl+p mode "papis"

# Define papis mode
mode "papis" {

    # open documents
    bindsym $mod+o exec python3 -m papis.main \
        --pick-lib --set picktool dmenu open

    # edit documents
    bindsym $mod+e exec python3 -m papis.main \
        --pick-lib --set picktool dmenu --set editor gvim edit

    # open document's url
    bindsym $mod+b exec python3 -m papis.main \
        --pick-lib --set picktool dmenu browse

    # return to default mode
    bindsym Ctrl+c mode "default"
    bindsym Return mode "default"
```

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```
bindsym Escape mode "default"  
}
```



This module describes which functions are intended to be used by users to create papis scripts.

`papis.api.clear_lib_cache` (*lib*: *Optional[str]* = *None*) → *None*

Clear cache associated with a library. If no library is given then the current library is used.

**Parameters** `lib` (*str*) – Library name.

```
>>> clear_lib_cache()
```

`papis.api.doi_to_data` (*doi*: *str*) → *Dict[str, Any]*

Try to get from a DOI expression a dictionary with the document's data using the crossref module.

**Parameters** `doi` (*str*) – DOI expression.

**Returns** Document's data

**Return type** *dict*

`papis.api.edit_file` (*file\_path*: *str*, *wait*: *bool* = *True*) → *None*

Edit file using the `editor` key value as a program to handle `file_path`.

**Parameters**

- `file_path` (*str*) – File path to be handled.
- `wait` (*bool*) – Wait for the completion of the opener program to continue

`papis.api.get_all_documents_in_lib` (*library*: *Optional[str]* = *None*) → *List[papis.document.Document]*

Get ALL documents contained in the given library with possibly.

**Parameters** `library` (*str*) – Library name.

**Returns** List of all documents.

**Return type** *list*

```
>>> import tempfile
>>> folder = tempfile.mkdtemp()
>>> set_lib_from_name(folder)
>>> docs = get_all_documents_in_lib(folder)
>>> len(docs)
0
```

`papis.api.get_documents_in_dir` (*directory*: *str*, *search*: *str* = *''*) → *List[papis.document.Document]*

Get documents contained in the given folder with possibly a search string.

**Parameters**

- **directory** (*str*) – Folder path.
- **search** (*str*) – Search string

**Returns** List of filtered documents.

**Return type** list

```
>>> import tempfile
>>> docs = get_documents_in_dir(tempfile.mkdtemp())
>>> len(docs)
0
```

`papis.api.get_documents_in_lib` (*library*: *Optional[str] = None*, *search*: *str = ""*) → *List[papis.document.Document]*

Get documents contained in the given library with possibly a search string.

**Parameters**

- **library** (*str*) – Library name.
- **search** (*str*) – Search string

**Returns** List of filtered documents.

**Return type** list

`papis.api.get_lib_name` () → *str*

Get current library, it either retrieves the library from the environment PAPIS\_LIB variable or from the command line args passed by the user.

**Returns** Library name

**Return type** *str*

```
>>> get_lib_name() is not None
True
```

`papis.api.get_libraries` () → *List[str]*

Get all libraries declared in the configuration. A library is discovered if the `dir` or `dirs` key defined in the library section.

**Returns** List of library names

**Return type** list

```
>>> len(get_libraries()) >= 1
True
```

`papis.api.open_dir` (*dir\_path*: *str*, *wait*: *bool = True*) → *None*

Open dir using the `file-browser` key value as a program to open `dir_path`.

**Parameters**

- **dir\_path** (*str*) – Folder path to be handled.
- **wait** (*bool*) – Wait for the completion of the opener program to continue

`papis.api.open_file` (*file\_path*: *str*, *wait*: *bool = True*) → *None*

Open file using the `opentool` key value as a program to handle `file_path`.

**Parameters**

- **file\_path** (*str*) – File path to be handled.

- **wait** (*bool*) – Wait for the completion of the opener program to continue

`papis.api.set_lib_from_name` (*library: str*) → None

Set current library, it either sets the library in the environment PAPIS\_LIB variable or in the command line args passed by the user.

**Parameters** `library` (*str*) – Name of library or path to a given library





**PLUGIN ARCHITECTURE**

---

**Note:** TODO

---



## GIT

Papis is conceived to work well with the tool *git*, this would also work with [mercurial](#) or [subversion](#).

Here you will find a description of a possible workflow using *git* with *papis*. This is not the only workflow, but it is the most obvious.

Let's say you have a library named `books` in the directory `~/Documents/MyNiceBooks`. You could turn the `books` library into a *git* repository, just doing for example

```
papis -l books run git init
```

or just going to the library directory and running the command there:

```
cd ~/Documents/MyNiceBooks
git init
```

Now you can add everything you have in the library with `git add .` if you are in the library's directory or

```
papis -l books git add .
```

if you want to do it using the *papis*' `git` command.

### 12.1 Interplay with other commands

Some *papis* commands give you the opportunity of using *git* to manage changes. For instance, if you are adding a new document, you could use the `--commit` flag to also add a commit into your library, so if you do

```
papis add --set author "Pedrito" --set title "Super book" book.pdf --commit
```

then also *papis* will do an automatic commit for the book, so that you can push your library afterwards to a remote repository.

You can imagine that *papis* commands like `rename` and `mv` should also offer such functionality, and they indeed do through the `--git` flag. Go to their documentation for more information.

## 12.2 Updating the library

You can use papis' simple `git` wrapper,

```
papis git pull
```

## 12.3 Usual workflow

Usually the workflow is like this:

When adding a document that you know for sure you want in your library:

- Add the document and commit it, either by `git add --commit` or committing the document after adding it to the library.
- Pull changes from the remote library, maybe you pushed something at work (reference changes etc..) and you do not have it yet there, you would do something like

```
papis git pull
```

- Push what you just added

```
papis git push
```

- Review the status of the library

```
papis git status
```

When editing a document's info file:

- Edit the file and then take a look at the `diff`

```
papis git diff
```

- Add the changes

```
papis git add --all
```

- Commit

```
papis git commit
```

- Pull/push:

```
papis git pull  
papis git push
```

Of course these workflows are just very basic examples. Your optimal workflow could look completely different.

## SCIHUB SUPPORT

Papis has a script that uses the scihub platform to download scientific papers. Due to legal caution the script is not included directly as a papis command, and it has its own PyPi repository.

To install it, just type

```
pip3 install papis-scihub
```

Now you can type

```
papis scihub -h
```

and see the help message of the script.

Some usage examples are:

- Download via the doi number:

```
papis scihub 10.1002/andp.19053220607 \\  
  add -d einstein_papers --folder-name photon_definition
```

- Download via a url that contains the doi number in the format `*/doi/<doinumber>`

```
papis scihub http://physicstoday.scitation.org/doi/10.1063/1.881498 \\  
  add --folder-name important_paper
```

- Download via the doi.org url:

```
papis scihub https://doi.org/10.1016/j.physrep.2016.12.002 add
```



## IMPORTING FROM BIBTEX FILES

Many users will want to import a library from a bibtex file that another program such as `zotero`, `mendeley` or `jabref` will have exported. These programs usually have a field called `FILE` or `file` that points to a path where the document file can be found.

To import such a library you can use a provided script originally intended for `zotero` which is, however, general enough to work for other programs too.

To install this script you can copy the file `papis-zotero` in the repository's example directory to your `papis config/scripts` directory.

You can do this automatically issuing the following commands

```
wget -O ~/.config/papis/scripts/papis-zotero https://raw.githubusercontent.com/
↪alejandrogallo/papis/master/examples/scripts/papis-zotero
chmod +x ~/.config/papis/scripts/papis-zotero
```

Now the `zotero` script is accessible from `papis`:

```
papis zotero -h
```

If you have a bibtex somewhere in your computer, you can use the script:

```
papis zotero library.bib
```

**Warning:** Note that if your bibtex file has some pdf entries, i.e., it looks like:

```
@article{Einstein1905Photon,
  author = { A. Einstein },
  doi = { 10.1002/andp.19053220607 },
  journal = { Ann. Phys. },
  pages = { 132--148 },
  title = { Über einen die Erzeugung und Verwandlung des Lichtes betreffenden_
↪heuristischen Gesichtspunkt },
  FILE = { path/to/some/relative/file.pdf },
  volume = { 322 },
  year = { 1905 },
}
```

then `papis-zotero` will interpret the path of the `FILE` entry as a relative path, so you should run the command from where this relative path makes sense.





## IMPORTING FROM ZOTERO SQLITE FILE

There is also a script that decodes the `zotero.sqlite` sqlite file that `zotero` uses to manage documents and creates `papis Documents` out of it.

This script will retrieve the documents from `zotero` (be it `pdf` documents or something else) and important information like tags.

```
wget -O ~/.config/papis/scripts/papis-zotero-sql https://raw.githubusercontent.com/
↪alejandrogallo/papis/master/examples/scripts/papis-zotero-sql
chmod +x ~/.config/papis/scripts/papis-zotero-sql
```

Now you have to go to the directory where `zotero` saves all the information, it would look something like this on linux systems:

```
cd ~/.mozilla/firefox/zqb7julq.default/zotero
```

Maybe the path is slightly different. It may vary from version to version from `zotero`. In the `zotero` data directory there should be a file called `zotero.sqlite` and there might be a `storage` directory with document data inside. These will be used by `zotero-sql` to retrieve information and files from.

Now you can use the script through

```
papis zotero-sql
```

This script by default will create a directory named `Documents` (in your current directory) where `papis` documents are stored. You can add these document by simply moving them to your library folder

```
mv Documents/* /path/to/your/papis/library
```

or also by adding them through `papis` using the folder flag

```
papis add --from-folder Documents/ZOTERO_ID
```

or write a `bash` for-loop to do it with all the converted documents

```
for folder in Documents/* ; do papis add --from-folder $folder ; done
```

**Warning:** Please be aware that the database structure of `zotero` is version dependent and this script **might** not work fully with your version. You can check [issue #18](#) for more information.



## SHELL AUTO-COMPLETION

Papis has a bash auto-completion script that comes installed when you install papis with pip3.

It should be installed in a relative path

```
PREFIX/etc/bash_completion.d/papis
```

normally the PREFIX part is /usr/local/, so you can add the following line to your ~/.bashrc file

```
source /usr/local/etc/bash_completion.d/papis
```

or get the bash script from [here](#).

### 16.1 Zsh

There is also a way for zsh users to auto-complete. Either downloading the script [here](#). or adding the following line into the .zshrc configuration file

```
eval "$(_PAPIS_COMPLETE=source_zsh papis)"
```



## FAQ

Here are some problems that users have come across often:

- When I remove a folder manually in a library or I synchronize the library manually, I do not see the new papers in the library. **Answer:** You probably need to update the cache because papis did not know anything about your changes in the library since you did it by yourself.

```
papis --clear-cache
```

will do.

For more information you can also check the [github faq](#) link.



## INDICES AND TABLES

- `genindex`
- `modindex`
- `search`





## PYTHON MODULE INDEX

p

`papis.api`, 65



## Symbols

`--abstract <abstract>`  
    `papis-explore-arxiv` command line option, 41  
`--all`  
    `papis-browse` command line option, 35  
    `papis-edit` command line option, 39  
    `papis-export` command line option, 49  
    `papis-list` command line option, 51  
    `papis-open` command line option, 53  
    `papis-rm` command line option, 54  
    `papis-run` command line option, 56  
    `papis-update` command line option, 57  
`--author <author>`  
    `papis-explore-arxiv` command line option, 41  
    `papis-explore-crossref` command line option, 44  
    `papis-explore-isbnplus` command line option, 46  
`--auto`  
    `papis-update` command line option, 57  
`--batch`  
    `papis-add` command line option, 33, 36  
`--category <category>`  
    `papis-explore-arxiv` command line option, 42  
`--cc`  
    `papis` command line option, 39  
`--clear-cache`  
    `papis` command line option, 39  
`--color <color>`  
    `papis` command line option, 39  
`--comment <comment>`  
    `papis-explore-arxiv` command line option, 41  
`--config <config>`  
    `papis` command line option, 38  
`--confirm`  
    `papis-add` command line option, 33, 36  
`--dir`  
    `papis-list` command line option, 50  
    `papis-open` command line option, 53  
`--doc-folder <doc_folder>`  
    `papis-edit` command line option, 39  
    `papis-explore-citations` command line option, 43  
    `papis-explore-lib` command line option, 47  
    `papis-export` command line option, 49  
    `papis-open` command line option, 53  
    `papis-run` command line option, 56  
    `papis-update` command line option, 57  
`--downloaders`  
    `papis-list` command line option, 51  
`--edit`  
    `papis-add` command line option, 33, 36  
`--editor <editor>`  
    `papis-edit` command line option, 39  
`--file`  
    `papis-list` command line option, 50  
    `papis-rm` command line option, 54  
`--file-name <file_name>`  
    `papis-add` command line option, 33, 36  
    `papis-addto` command line option, 34  
`--files <files>`  
    `papis-addto` command line option, 34  
`--filter <_filters>`  
    `papis-explore-crossref` command line option, 44  
`--folder`  
    `papis-export` command line option, 49  
`--folder-name <folder_name>`  
    `papis-add` command line option, 33, 36  
`--force`  
    `papis-rm` command line option, 54  
`--format <_format>`  
    `papis-list` command line option, 51  
`--format <fmt>`  
    `papis-explore-export` command line option, 45  
    `papis-export` command line option, 49  
`--from <from_importer>`  
    `papis-add` command line option, 33, 36

```

    papis-update command line option,57
--git
    papis-add command line option,33,37
    papis-addto command line option,34
    papis-edit command line option,39
    papis-mv command line option,51
    papis-rename command line option,54
    papis-rm command line option,54
    papis-update command line option,57
--help
    papis command line option,38
    papis-add command line option,33,36
    papis-addto command line option,34
    papis-browse command line option,35
    papis-config command line option,38
    papis-edit command line option,39
    papis-explore command line option,
        41
    papis-explore-arxiv command line
        option,41
    papis-explore-base command line
        option,42
    papis-explore-bibtex command line
        option,42
    papis-explore-citations command
        line option,43
    papis-explore-cmd command line
        option,44
    papis-explore-crossref command
        line option,44
    papis-explore-dissemin command
        line option,45
    papis-explore-export command line
        option,45
    papis-explore-isbn command line
        option,46
    papis-explore-isbnplus command
        line option,46
    papis-explore-json command line
        option,46
    papis-explore-lib command line
        option,47
    papis-explore-pick command line
        option,47
    papis-explore-yaml command line
        option,48
    papis-export command line option,49
    papis-list command line option,50
    papis-mv command line option,51
    papis-open command line option,53
    papis-rename command line option,54
    papis-rm command line option,54
    papis-run command line option,56
    papis-update command line option,57
    --id-list <id_list>
        papis-explore-arxiv command line
            option,42
    --info
        papis-list command line option,50
    --journal <journal>
        papis-explore-arxiv command line
            option,41
    --key <key>
        papis-browse command line option,35
    --li
        papis-add command line option,33,37
    --lib <lib>
        papis command line option,38
    --libraries
        papis-list command line option,51
    --library <library>
        papis-explore-lib command line
            option,47
    --link
        papis-add command line option,33,37
    --list-importers
        papis-add command line option,33,37
    --log <log>
        papis command line option,39
    --logfile <logfile>
        papis command line option,39
    --mark
        papis-open command line option,53
    --max <_ma>
        papis-explore-crossref command
            line option,44
    --max <max>
        papis-explore-arxiv command line
            option,42
    --max-citations <max_citations>
        papis-explore-citations command
            line option,43
    --no-confirm
        papis-add command line option,33,36
    --no-edit
        papis-add command line option,33,36
    --no-git
        papis-add command line option,33,37
        papis-addto command line option,34
        papis-edit command line option,39
        papis-mv command line option,51
        papis-rename command line option,54
        papis-rm command line option,54
        papis-update command line option,57
    --no-link
        papis-add command line option,33,37
    --no-mark
        papis-open command line option,53

```

---

```

--no-open
  papis-add command line option, 33, 36
--notes
  papis-edit command line option, 39
  papis-list command line option, 51
--number <number>
  papis-explore-pick command line
    option, 47
--open
  papis-add command line option, 33, 36
--order <order>
  papis-explore-crossref command
    line option, 44
--out <out>
  papis-explore-export command line
    option, 45
  papis-export command line option, 49
--page <page>
  papis-explore-arxiv command line
    option, 42
--pick <pick>
  papis-run command line option, 56
--pick-lib
  papis command line option, 38
--prefix <prefix>
  papis-run command line option, 56
--profile <profile>
  papis command line option, 38
--query <query>
  papis-explore-arxiv command line
    option, 41
  papis-explore-base command line
    option, 42
  papis-explore-crossref command
    line option, 44
  papis-explore-dissemin command
    line option, 45
  papis-explore-isbn command line
    option, 46
  papis-explore-isbnplus command
    line option, 46
--report-number <report_number>
  papis-explore-arxiv command line
    option, 41
--reverse
  papis-addto command line option, 34
  papis-browse command line option, 35
  papis-edit command line option, 39
  papis-export command line option, 49
  papis-list command line option, 50
  papis-mv command line option, 51
  papis-open command line option, 53
  papis-rename command line option, 54
  papis-rm command line option, 54
  papis-run command line option, 56
  papis-update command line option, 57
--rmfile
  papis-explore-citations command
    line option, 43
--save
  papis-explore-citations command
    line option, 43
--service <service>
  papis-explore-isbn command line
    option, 46
--set <set_list>
  papis command line option, 39
  papis-add command line option, 33, 36
--set <set_tuples>
  papis-update command line option, 57
--sort <sort_field>
  papis-addto command line option, 34
  papis-browse command line option, 35
  papis-edit command line option, 39
  papis-export command line option, 49
  papis-list command line option, 50
  papis-mv command line option, 51
  papis-open command line option, 53
  papis-rename command line option, 54
  papis-rm command line option, 54
  papis-run command line option, 56
  papis-update command line option, 57
--sort <sort>
  papis-explore-crossref command
    line option, 44
--subfolder <subfolder>
  papis-add command line option, 33, 36
--template <template>
  papis-list command line option, 51
--title <title>
  papis-explore-arxiv command line
    option, 41
  papis-explore-crossref command
    line option, 44
  papis-explore-isbnplus command
    line option, 46
--tool <tool>
  papis-open command line option, 53
--verbose
  papis command line option, 38
--version
  papis command line option, 38
-a
  papis-browse command line option, 35
  papis-edit command line option, 39
  papis-explore-arxiv command line
    option, 41

```

papis-explore-crossref command line option, 44  
 papis-explore-isbnplus command line option, 46  
 papis-export command line option, 49  
 papis-list command line option, 51  
 papis-open command line option, 53  
 papis-rm command line option, 54  
 papis-run command line option, 56  
 papis-update command line option, 57  
 -b papis-add command line option, 33, 36  
 -c papis command line option, 38  
 -d papis-add command line option, 33, 36  
 papis-list command line option, 50  
 papis-open command line option, 53  
 -e papis-edit command line option, 39  
 -f papis-addto command line option, 34  
 papis-explore-crossref command line option, 44  
 papis-explore-export command line option, 45  
 papis-export command line option, 49  
 papis-list command line option, 50  
 papis-rm command line option, 54  
 -h papis command line option, 38  
 papis-add command line option, 33, 36  
 papis-addto command line option, 34  
 papis-browse command line option, 35  
 papis-config command line option, 38  
 papis-edit command line option, 39  
 papis-explore command line option, 41  
 papis-explore-arxiv command line option, 41  
 papis-explore-base command line option, 42  
 papis-explore-bibtex command line option, 42  
 papis-explore-citations command line option, 43  
 papis-explore-cmd command line option, 44  
 papis-explore-crossref command line option, 44  
 papis-explore-dissemin command line option, 45  
 papis-explore-export command line option, 45  
 papis-explore-isbn command line option, 46  
 papis-explore-isbnplus command line option, 46  
 papis-explore-json command line option, 46  
 papis-explore-lib command line option, 47  
 papis-explore-pick command line option, 47  
 papis-explore-yaml command line option, 48  
 papis-export command line option, 49  
 papis-list command line option, 50  
 papis-mv command line option, 51  
 papis-open command line option, 53  
 papis-rename command line option, 54  
 papis-rm command line option, 54  
 papis-run command line option, 56  
 papis-update command line option, 57  
 -i papis-list command line option, 50  
 -k papis-browse command line option, 35  
 -l papis command line option, 38  
 papis-explore-lib command line option, 47  
 -m papis-explore-arxiv command line option, 42  
 papis-explore-citations command line option, 43  
 papis-explore-crossref command line option, 44  
 papis-open command line option, 53  
 -n papis-edit command line option, 39  
 papis-explore-pick command line option, 47  
 papis-list command line option, 51  
 -o papis-explore-crossref command line option, 44  
 papis-explore-export command line option, 45  
 papis-export command line option, 49  
 -p papis-run command line option, 56  
 -q papis-explore-arxiv command line option, 41  
 papis-explore-base command line option, 42

papis-explore-crossref command line option, 44

papis-explore-dissemin command line option, 45

papis-explore-isbn command line option, 46

papis-explore-isbnplus command line option, 46

-s

papis command line option, 39

papis-add command line option, 33, 36

papis-explore-citations command line option, 43

papis-explore-crossref command line option, 44

papis-explore-isbn command line option, 46

papis-update command line option, 57

-t

papis-explore-arxiv command line option, 41

papis-explore-crossref command line option, 44

papis-explore-isbnplus command line option, 46

-v

papis command line option, 38

<COMMANDS>

papis-run command line option, 56

## B

### BIBFILE

papis-explore-bibtex command line option, 42

## C

clear\_lib\_cache() (*in module papis.api*), 65

### COMMAND

papis-explore-cmd command line option, 44

## D

doi\_to\_data() (*in module papis.api*), 65

## E

edit\_file() (*in module papis.api*), 65

## F

### FILES

papis-add command line option, 33, 37

## G

get\_all\_documents\_in\_lib() (*in module papis.api*), 65

get\_documents\_in\_dir() (*in module papis.api*), 65

get\_documents\_in\_lib() (*in module papis.api*), 66

get\_lib\_name() (*in module papis.api*), 66

get\_libraries() (*in module papis.api*), 66

## J

### JSONFILE

papis-explore-json command line option, 47

## O

open\_dir() (*in module papis.api*), 66

open\_file() (*in module papis.api*), 66

### OPTION

papis-config command line option, 38

## P

papis command line option

--cc, 39

--clear-cache, 39

--color <color>, 39

--config <config>, 38

--help, 38

--lib <lib>, 38

--log <log>, 39

--logfile <logfile>, 39

--pick-lib, 38

--profile <profile>, 38

--set <set\_list>, 39

--verbose, 38

--version, 38

-c, 38

-h, 38

-l, 38

-s, 39

-v, 38

papis.api (*module*), 65

papis.commands.add (*module*), 31

papis.commands.addto (*module*), 33

papis.commands.bibtex (*module*), 35

papis.commands.browse (*module*), 34

papis.commands.config (*module*), 37

papis.commands.default (*module*), 38

papis.commands.edit (*module*), 39

papis.commands.explore (*module*), 40

papis.commands.export (*module*), 48

papis.commands.git (*module*), 49

papis.commands.list (*module*), 50

papis.commands.mv (*module*), 51

papis.commands.open (*module*), 52

papis.commands.rename (*module*), 53

papis.commands.rm (*module*), 54

papis.commands.run (*module*), 55  
papis.commands.update (*module*), 56  
papis-add command line option  
    --batch, 33, 36  
    --confirm, 33, 36  
    --edit, 33, 36  
    --file-name <file\_name>, 33, 36  
    --folder-name <folder\_name>, 33, 36  
    --from <from\_importer>, 33, 36  
    --git, 33, 37  
    --help, 33, 36  
    --li, 33, 37  
    --link, 33, 37  
    --list-importers, 33, 37  
    --no-confirm, 33, 36  
    --no-edit, 33, 36  
    --no-git, 33, 37  
    --no-link, 33, 37  
    --no-open, 33, 36  
    --open, 33, 36  
    --set <set\_list>, 33, 36  
    --subfolder <subfolder>, 33, 36  
    -b, 33, 36  
    -d, 33, 36  
    -h, 33, 36  
    -s, 33, 36  
    FILES, 33, 37  
papis-addto command line option  
    --file-name <file\_name>, 34  
    --files <files>, 34  
    --git, 34  
    --help, 34  
    --no-git, 34  
    --reverse, 34  
    --sort <sort\_field>, 34  
    -f, 34  
    -h, 34  
    QUERY, 34  
papis-browse command line option  
    --all, 35  
    --help, 35  
    --key <key>, 35  
    --reverse, 35  
    --sort <sort\_field>, 35  
    -a, 35  
    -h, 35  
    -k, 35  
    QUERY, 35  
papis-config command line option  
    --help, 38  
    -h, 38  
    OPTION, 38  
papis-edit command line option  
    --all, 39  
    --doc-folder <doc\_folder>, 39  
    --editor <editor>, 39  
    --git, 39  
    --help, 39  
    --no-git, 39  
    --notes, 39  
    --reverse, 39  
    --sort <sort\_field>, 39  
    -a, 39  
    -e, 39  
    -h, 39  
    -n, 39  
    QUERY, 40  
papis-explore command line option  
    --help, 41  
    -h, 41  
papis-explore-arxiv command line option  
    --abstract <abstract>, 41  
    --author <author>, 41  
    --category <category>, 42  
    --comment <comment>, 41  
    --help, 41  
    --id-list <id\_list>, 42  
    --journal <journal>, 41  
    --max <max>, 42  
    --page <page>, 42  
    --query <query>, 41  
    --report-number <report\_number>, 41  
    --title <title>, 41  
    -a, 41  
    -h, 41  
    -m, 42  
    -q, 41  
    -t, 41  
papis-explore-base command line option  
    --help, 42  
    --query <query>, 42  
    -h, 42  
    -q, 42  
papis-explore-bibtex command line option  
    --help, 42  
    -h, 42  
    BIBFILE, 42  
papis-explore-citations command line option  
    --doc-folder <doc\_folder>, 43  
    --help, 43  
    --max-citations <max\_citations>, 43  
    --rmfile, 43  
    --save, 43  
    -h, 43  
    -m, 43



-s, 43  
 QUERY, 43  
 papis-explore-cmd command line option  
   --help, 44  
   -h, 44  
   COMMAND, 44  
 papis-explore-crossref command line option  
   --author <author>, 44  
   --filter <\_filters>, 44  
   --help, 44  
   --max <\_ma>, 44  
   --order <order>, 44  
   --query <query>, 44  
   --sort <sort>, 44  
   --title <title>, 44  
   -a, 44  
   -f, 44  
   -h, 44  
   -m, 44  
   -o, 44  
   -q, 44  
   -s, 44  
   -t, 44  
 papis-explore-dissemin command line option  
   --help, 45  
   --query <query>, 45  
   -h, 45  
   -q, 45  
 papis-explore-export command line option  
   --format <fmt>, 45  
   --help, 45  
   --out <out>, 45  
   -f, 45  
   -h, 45  
   -o, 45  
 papis-explore-isbn command line option  
   --help, 46  
   --query <query>, 46  
   --service <service>, 46  
   -h, 46  
   -q, 46  
   -s, 46  
 papis-explore-isbnplus command line option  
   --author <author>, 46  
   --help, 46  
   --query <query>, 46  
   --title <title>, 46  
   -a, 46  
   -h, 46  
   -q, 46  
   -t, 46  
 papis-explore-json command line option  
   --help, 46  
   -h, 46  
   JSONFILE, 47  
 papis-explore-lib command line option  
   --doc-folder <doc\_folder>, 47  
   --help, 47  
   --library <library>, 47  
   -h, 47  
   -l, 47  
   QUERY, 47  
 papis-explore-pick command line option  
   --help, 47  
   --number <number>, 47  
   -h, 47  
   -n, 47  
 papis-explore-yaml command line option  
   --help, 48  
   -h, 48  
   YAMLFILE, 48  
 papis-export command line option  
   --all, 49  
   --doc-folder <doc\_folder>, 49  
   --folder, 49  
   --format <fmt>, 49  
   --help, 49  
   --out <out>, 49  
   --reverse, 49  
   --sort <sort\_field>, 49  
   -a, 49  
   -f, 49  
   -h, 49  
   -o, 49  
   QUERY, 49  
 papis-list command line option  
   --all, 51  
   --dir, 50  
   --downloaders, 51  
   --file, 50  
   --format <\_format>, 51  
   --help, 50  
   --info, 50  
   --libraries, 51  
   --notes, 51  
   --reverse, 50  
   --sort <sort\_field>, 50  
   --template <template>, 51  
   -a, 51  
   -d, 50  
   -f, 50  
   -h, 50  
   -i, 50  
   -n, 51

QUERY, 51  
papis-mv command line option  
--git, 51  
--help, 51  
--no-git, 51  
--reverse, 51  
--sort <sort\_field>, 51  
-h, 51  
QUERY, 52  
papis-open command line option  
--all, 53  
--dir, 53  
--doc-folder <doc\_folder>, 53  
--help, 53  
--mark, 53  
--no-mark, 53  
--reverse, 53  
--sort <sort\_field>, 53  
--tool <tool>, 53  
-a, 53  
-d, 53  
-h, 53  
-m, 53  
QUERY, 53  
papis-rename command line option  
--git, 54  
--help, 54  
--no-git, 54  
--reverse, 54  
--sort <sort\_field>, 54  
-h, 54  
QUERY, 54  
papis-rm command line option  
--all, 54  
--file, 54  
--force, 54  
--git, 54  
--help, 54  
--no-git, 54  
--reverse, 54  
--sort <sort\_field>, 54  
-a, 54  
-f, 54  
-h, 54  
QUERY, 55  
papis-run command line option  
--all, 56  
--doc-folder <doc\_folder>, 56  
--help, 56  
--pick <pick>, 56  
--prefix <prefix>, 56  
--reverse, 56  
--sort <sort\_field>, 56  
-a, 56

-h, 56  
-p, 56  
<COMMANDS>, 56  
papis-update command line option  
--all, 57  
--auto, 57  
--doc-folder <doc\_folder>, 57  
--from <from\_importer>, 57  
--git, 57  
--help, 57  
--no-git, 57  
--reverse, 57  
--set <set\_tuples>, 57  
--sort <sort\_field>, 57  
-a, 57  
-h, 57  
-s, 57  
QUERY, 57

## Q

### QUERY

papis-addto command line option, 34  
papis-browse command line option, 35  
papis-edit command line option, 40  
papis-explore-citations command  
line option, 43  
papis-explore-lib command line  
option, 47  
papis-export command line option, 49  
papis-list command line option, 51  
papis-mv command line option, 52  
papis-open command line option, 53  
papis-rename command line option, 54  
papis-rm command line option, 55  
papis-update command line option, 57

## R

run() (in module *papis.commands.add*), 32

## S

set\_lib\_from\_name() (in module *papis.api*), 67

## Y

### YAMLFIELD

papis-explore-yaml command line  
option, 48