
Set of python scripts to work with GnuCash books Documentation

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Project page <https://github.com/sdementen/gnucash-utilities>

1.1 In development

- system to add python report to gnucash

Contents:

This project aims to provide a suite of scripts to work on GnuCash files stored in SQL (sqlite3 and Postgres, not tested in MySQL). It depends on [piecash](#) to read/write gnuCash books.

2.1 Report creation (Linux and Windows, python >=3.5)

2.1.1 Installation & use

You first need to install the gnuCash-utilities with:

```
$ pip install gnuCash-utilities
```

Once installed, you can add python reports to gnuCash by adding python files of the form 'report_name-of-report.py' to your \$HOME/.gnuCash folder.

Everytime a python report is added or the signature of the report function is modified (change of report metadata, addition/change/removal of an option), you should run the gc_report script:

```
For windows
$ gc_report

For linux
$ gc_report.py
```

This script generates the scheme wrapper around the python report (it has the same name as the python report file but with a .scm extension) and register the report in the \$HOME/.gnuCash/config.user file.

2.1.2 A simple report

The simplest report has the form of

```

import sys

from piecash_utilities.report import report, execute_report

@report (
    title="My simplest report",
    name="piecash-simple-report",
    menu_tip="This simple report ever",
    options_default_section="general",
)
def generate_report (
    book_url,
):
    return "<html><body>Hello world from python !</body></html>"

if __name__ == '__main__':
    execute_report(generate_report, book_url=sys.argv[1])

```

The core reporting logic is defined in the function ‘generate_report’ that:

1. **is** decorated **with** the ‘report’ decorator
2. takes one argument ‘book_url’ which **is** the book URL
3. takes optional arguments representing the report options
4. returns a string **with** html. This html **is** what gnuCash will display **as** the result_ of the report execution.

Warning: The report system provided by the gnuCash-utilities has currently no way to identify the book that is running in gnuCash (this can be fixed if a guile function is able to return the gnuCash URI of the currently opened book). Hence, it uses a hack. It will look in the registry (for windows) or dconf (for linux) to find the last opened file and uses this as the “active gnuCash book” (ie the ‘book_url’ argument of the ‘generate_report’ function).

This hack will fail a.o. if you work with multiple gnuCash book at the same time.

2.1.3 A report with options

If you want to define options for your report, you can do it with type annotations as in

```

import sys

from piecash_utilities.report import report, RangeOption, DateOption, StringOption,
execute_report

@report (
    title="My simplest report with parameters",
    name="piecash-simple-report-parameters",
    menu_tip="A simple report with parameters",
    options_default_section="general",
)
def generate_report (
    book_url,
    a_number: RangeOption(
        section="main",

```

```

        sort_tag="a",
        documentation_string="This is a number",
        default_value=3),
    a_str: StringOption(
        section="main",
        sort_tag="c",
        documentation_string="This is a string",
        default_value="with a default value"),
    a_date: DateOption(
        section="main",
        sort_tag="d",
        documentation_string="This is a date",
        default_value="(lambda () (cons 'absolute (cons (current-time) 0)))"),
    another_number: RangeOption(
        section="main",
        sort_tag="b",
        documentation_string="This is a number",
        default_value=3)
):
    return """<html>
<body>
  Hello world from python !<br>
  Parameters received:<br>
  <ul>
<li>a_number = {a_number}</li>
<li>a_str = {a_str}</li>
<li>a_date = {a_date}</li>
<li>another_number = {another_number}</li>
  </ul>
</body>
</html>""".format(
    a_str=a_str,
    another_number=another_number,
    a_date=a_date,
    a_number=a_number,
    )

if __name__ == '__main__':
    execute_report(generate_report, book_url=sys.argv[1])

```

Each option is an additional argument to the 'generate_report' function with its type defined through python type annotations.

Options currently supported are:

- date with DateOption
- float with RangeOption
- str with StringOption

2.1.4 A report that access the book

Most of the report will want to access the gnuCash book. You can use piecash to open the book thanks to the 'book_url' argument that the 'generate_report' function gets automatically as illustrated in the following example

```
import piecash
import sys

from piecash_utilities.report import report, execute_report

@report (
    title="My simplest report with a book",
    name="piecash-simple-report-book",
    menu_tip="A simple report that opens a book",
    options_default_section="general",
)
def generate_report(
    book_url,
):
    with piecash.open_book(book_url, readonly=True, open_if_lock=True) as book:
        return """<html>
<body>
    Hello world from python !<br>
    Book : {book_url}<br>
    List of accounts : {accounts}
</body>
</html>""".format(
        book_url=book_url,
        accounts=[acc.fullname for acc in book.accounts],
    )

if __name__ == '__main__':
    execute_report(generate_report, book_url=sys.argv[1])
```

2.1.5 A full fledged example with jinja2 to generate the html

You can use the command ‘gc_create_report name-of-report’ (under windows) or ‘gc_create_report.py name-of-report’ (under linux) to create a set of files ‘report_name-of-report.py’ and ‘report_name-of-report.html’ that use the jinja2 templating logic to generate the report. For any moderately complex report, this is the suggested approach.

You can also generate a sample file automatically by executing:

```
For windows
$ gc_report_create name-of-report

For linux
$ gc_report_create.py name-of-report
```

2.1.6 Testing your report from the command line

You can test a report by just running the ‘report_name-of-report.py’ python file and piping the options to it as:

```
$ cat inputs | python report_name-of-report.py
```

with inputs being a file like

```
a_number|3
a_str|with a default value
```

```
a_date|1479026587
another_number|3
```

The inputs should be in line with the options required by the report.

2.1.7 How does it work ?

The python report mechanism works as following:

- At report creation:
 1. user creates a report by writing a python script as `$HOME/.gnucash/report_name.py`
 2. users launches the `gc_report` command that:
 - (a) generates a scheme wrapper as `$HOME/.gnucash/report_name.scm`
 - (b) adds the report to the file `$HOME/.gnucash/config.user` to have it loaded at each start of `gnucash`
- At runtime:
 1. `gnucash` starts, loads `$HOME/.gnucash/config.user` and registers the report declared in the `.scm` files
 2. user launches a python report
 3. the scheme wrapper is called and:
 - (a) it starts a python subprocess “`python report_name.py`”
 - (b) it retrieves and serialises each report option in the format “`option_nameoption_value`” and pipes it to the standard input of the python subprocess
 - (c) the python subprocesses:
 - i. deserialises the options => option arguments
 - ii. retrieves the “last open `gnucash` book” => `book_url` argument
 - iii. calls the `generate_report` function with the arguments which returns an HTML string
 - iv. prints the HTML string to the standard output
 - (d) it retrieves the standard output of the python subprocess as the HTML output of the report

The complete api documentation (apidoc) :

3.1 piecash_utilities package

3.1.1 Subpackages

piecash_utilities.report package

Submodules

piecash_utilities.report.options module

class piecash_utilities.report.options.**Option**(*type, section, sort_tag, documentation_string, default_value, name=None*)

Bases: `object`

An option to be used in a report

type

str – the type of the option of the form ‘gnc:make-number-range-option’

section

str – the section/tab where the option should appear in the option dialog

sort_tag

str – a string defining the sort order in the tab

documentation_string

str – the doc string of the option

default_value

str – the default value of the option

name

str – the name of the variable

```
render_scheme ()
render_serialise ()
parse (value)
class piecash_utilities.report.options.DateOption (is_datetime=False, **kwargs)
    Bases: piecash_utilities.report.options.Option
    render_serialise ()
    parse (value)
    render_scheme ()
class piecash_utilities.report.options.RangeOption (lower=0, upper=10000, decimals=2, step_size=0.01, **kwargs)
    Bases: piecash_utilities.report.options.Option
    render_scheme ()
class piecash_utilities.report.options.StringOption (**kwargs)
    Bases: piecash_utilities.report.options.Option
    render_scheme ()
    parse (value)
```

piecash_utilities.report.report module

```
class piecash_utilities.report.report.Report (name, title, menu_tip, options, options_default_section, function=None, python_script=None)
    Bases: object
    name = ''
    title = ''
    menu_tip = ''
    options = None
    function = None
    python_script = None
    guid
    generate_scm ()
piecash_utilities.report.report.retrieve_template_scm ()
piecash_utilities.report.report.generate_sample_report_python ()
piecash_utilities.report.report.generate_sample_report_html ()
piecash_utilities.report.report.report (options_default_section, title, name, menu_tip)
piecash_utilities.report.report.output_trace_html (exc_info)
piecash_utilities.report.report.execute_report (generate_report, book_url)
```


Module contents

`piecash_utilities.report_example` package

Submodules

`piecash_utilities.report_example.report_simplest` module

`piecash_utilities.report_example.report_simplest_book` module

`piecash_utilities.report_example.report_simplest_parameters` module

Module contents

3.1.2 Submodules

3.1.3 `piecash_utilities.config` module

`piecash_utilities.config.get_user_config_path()`

`piecash_utilities.config.update_config_user` (*lines, separator=';; lines automatically added\n;; everything below this line will be scraped'*)

3.1.4 `piecash_utilities.metadata` module

Project metadata

Information describing the project.

3.1.5 Module contents

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