

# xl2roefact python library API Reference

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# app\_cli

app\_cli: the command line application for all xl2roefact functionalities.

Identification:

- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

## about

```
@app_cli.command()  
def about()
```

provide a short application description.

## settings

```
@app_cli.command()  
def settings(rules: Annotated[  
    bool,  
    typer.  
    Option("--rules", "-r", help="show settings recommended update rules"),  
] = False)
```

display application configuration parameters and settings that are subject to be changed by user.

## Arguments:

- `rules` - show recommended rules to follow when change application configurable settings (available in both RO & EN languages). Defaults to `False`.

## xl2json

```

@app_cli.command()
def xl2json(
    file_name: Annotated[
        str, typer.Argument(
            help="files to process (wildcards allowed)"] = "*.xlsx",
    files_directory: Annotated[
        Path,
        typer.Option(
            "--files-directory",
            "-d",
            exists=False,
            file_okay=False,
            dir_okay=True,
            writable=True,
            readable=True,
            resolve_path=True,
            help=
                "directory to be used to look for Excel files (if default directory does not exists
will consider current directory instead).",
        ),
        ] = "invoice_files/",
    verbose: Annotated[
        bool,
        typer.
            Option("--verbose", "-v", help="show detailed processing messages"),
        ] = False)

```

extract data from an Excel file (save data to JSON format file with the same name as original file but `.json` extension).

### Arguments:

- `file_name` - files to process (wildcards allowed).
- `files_directory` - directory to be used to look for Excel files. Defaults to `invoice_files/`. NOTE: if default directory does not exists will consider current directory instead
- `verbose` - show detailed processing messages". Defaults to `False`.

### called\_when\_no\_command

```

@app_cli.callback(invoked_without_command=True)
def called_when_no_command(
    ctx: typer.Context,
    version: Annotated[
        bool,
        typer.Option("--version", help="show application version"),
    ] = False)

```

function called when no command is invoked and to provide only application version (for external users to test it!).

## run

NOTE: for `run` "reason to be" as copy of `app_cli` see iss `0.1.22b 240216piu_a`

## chkisld

chkisld: modul de verificare a starii de incarcare a unei facturi emise

### Identification:

- code-name: `chkisld`
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

### Specifications:

- document cerinte initiale: `110-SRE-api_to_roefact_requirements.md` section Componenta `x12roefact`
- INTRARI: fisier `f-XLSX` sau numarul / cheia / codul facturii
- IESIRI: valoarea echivalent `TRUE` daca factura a fost deja incarcata sau valoare echivalent `FALSE` daca factura nu a fost incarcata

## chkxml

chkxml: modul de validare a facturii in sistemul ANAF E-Factura

### Identification:

- code-name: `chkxml`
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

### Specifications:

- document cerinte initiale: `110-SRE-api_to_roefact_requirements.md` section Componenta `x12roefact`
- INTRARI: fisier `f-XML`
- IESIRI: raport cu eventualele erori de validare

## config\_settings

Configuration and setting parameters.

(en-us) README before making changes:

- each parameter has a short help (lines starting with # character) - read it before changing that parameter
- do not change parameters name as specified before equal (=) sign
- lists are enclosed in squared brackets ([...]) and items are separated by comma character (,)
- strings are enclosed in " characters
- if you want to clear a list (for example you do not want any options inside) just let it as <PARAMETR NAME> = []  
- do not drop that parameter
- do not add supplementary parameters, they will not be used without software changes (also risk to induce potential errors)
- for calendaristic dates Excel cells use date format and change it as display option to show wanted format

(ro) README înainte de a face modificari:

- fiecare parametru are un help scurt (liniile ce incep cu caracterul #) - citi-l inainte de a modifica un parametru
- nu schimbati numele parametrilor asa cum este el specificat inainte de semnul egal (=)
- listele sunt incluse intre paranteze drepte ([...]) si elementele lor sunt separate prin caracterul virgula (,)
- sirurile de caractere sunt incluse intre ghilimele (caracterul ")
- daca doriti stergerea unei liste (de ex daca nu doriti nici o optiune pentru acea lista) doar lasati acel parametru cu valoarea [] - nu stergeti in nici un caz acel parametru
- nu adaugati parametrii suplimentari (altii decat cei specificati aici), acestia nu vor fi utilizati fara a modifica aplicatia (de asemenea riscati sa induceti erori in cod)
- pentru datele calendaristice in celulul Excel a se utiliza formatul standard de data (date) si modificati formatul de afisare in formatul dorit pe factura tiparibila

## DEFAULT\_SUPPLIER\_COUNTRY

**NOTE: "pattern-uri" (sabloane) de identificare si regasire a datelor folositi de**

\_\_ comanda x12json reprezentind functionalitatea de extragere a datelor din Excel si exportul lor in formatul JSON (modulul `rdinv`\_\_

## ldxml

ldxml: modul de incarcare a facturii in sistemul ANAF E-Factura

Identification:

- code-name: ldxml

- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

#### Specifications:

- document cerinte initiale: 110-SRE-api\_to\_roefact\_requirements.md section Componenta xl2roefact
- INTRARI: fisier f-XML
- IESIRI: raport cu validarea si identificatorul incarcarii

## libutils

general utilities library for all xl2roefact components and modules.

#### Identification:

- code-name: libutils
- copyright: (c) 2023, 2024 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

#### Components:

- complete\_sexe\_file() -> bool : Rename and move resulted exe file (called from build\_sexe script)
- dict\_sum\_by\_key(dict, str) -> float : Sum a dictionary for a given key at all depth levels
- find\_str\_in\_list(list, list) -> int : Search more strings (ie, a list) in list of strings
- invoice\_taxes\_summary(list[dict]) -> dict : Calculates invoice taxes summary as required by ROefact requirements
- isnumber(str) -> bool : Test a string if it could be used as number (int or float)

#### complete\_sexe\_file

```
def complete_sexe_file(drop_source: bool = True) -> bool
```

Rename and move resulted exe file. This function is dedicated only to development phase, so various objects are hard coded.

- Specs: file to process ../dist\_sexe/xl2roefact\_to\_update\_name.exe -> ../dist/xl2roefact-version-win64.exe
- NOTE: all function code suppose that current directory is root of xl2roefact , ie where is located pyproject.toml of package

#### Arguments:

- drop\_source - indicate to delete source file after copying, ie make a "move" operation, otherwise make a copy keeping the source file. Default behaviour is to delete source.

**Returns:**

- `bool` - True if file was found, renamed and moved with no error

**invoice\_taxes\_summary**

```
def invoice_taxes_summary(invoice_lines: list[dict]) -> list
```

Calculates invoice taxes summary as required by ROefact requirements.

**Arguments:**

- `invoice_lines` - section with item lines from 'big' invoice dictionary

**Returns:**

- `list` - usable for "cac\_TaxSubtotal" key

**dict\_sum\_by\_key**

```
def dict_sum_by_key(search_dict: dict | list[dict], sum_key: str) -> float
```

Sum all dictionary (or list of dictionaries) items, at all levels, for a given key.

**Arguments:**

- `search_dict` - dictionary to be searched for
- `sum_key` - key to be searched

**Returns:**

- `float` - with required sum

**isnumber**

```
def isnumber(a_string: str) -> bool
```

test if a string is valid as any kind of number.

**Arguments:**

- `a_string` - input string.

**Returns:**

- `True` - if input string is valid as any kind of number, otherwise `False`.

**find\_str\_in\_list**

```
def find_str_in_list(list_of_str_to_find: list, list_to_search: list) -> int
```

find a substring from `list_of_str_to_find` in elements of `list_to_search`.

**Arguments:**

- `list_of_str_to_find` - list of strings to search for.
- `list_to_search` - liste where to search for substrings.

**Returns:**

- `index` - the index of list item which contains `str_to_find` (first found) or `None` if not found.

## rdinv

rdinv: modul de procesare a fisierului Excel ce contine factura si colectare a datelor aferente.

Formatul acceptat fisier Excel este `XLSX`.

**Identification:**

- code-name: `rdinv`
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

**Specifications:**

- document cerinte initiale: `110-SRE-api_to_roefact_requirements.md` section Componenta `x12roefact`
- INTRARI: fisier format `XLSX` ce contine factura emisa (cod: `f-XLSX`)
- IESIRI: fisier format `JSON` imagine a datelor facturii (cod: `f-JSON`)

**rdinv**

```
def rdinv(file_to_process: str,
          invoice_worksheet_name: str = None,
          *,
          debug_info: bool = False) -> dict
```

read Excel file for invoice data.

Produce a dictionary structure + JSON file with all data regarding read invoice: canonical KV data, meta data, map to convert to XML and original Excel data.

**Arguments:**

- `file_to_process` - the invoice file (exact file with path).
- `invoice_worksheet_name` - the worksheet containing invoice, optional, defaults to first found worksheet.
- `debug_info` - key only, show debugging information, default `False`.



**Returns:**

- `dict` - the invoice extracted information from Excel file as `dict(Invoice: dict, meta_info: dict, excel_original_data: dict)` TODO subject of documentation update.

NOTE ref important variables: \* `db: pylightxl object`: EXCEL object with invoice (as a whole) \* `ws: pylightxl object`: WORKSHEET object with invoice

**get\_excel\_data\_at\_label**

```
def get_excel_data_at_label(pattern_to_search_for: list[str],
                           worksheet: xl.Database.ws,
                           area_to_scan: list[list[int]] = None,
                           targeted_type: Callable = str,
                           down_search_try: bool = True) -> dict
```

get "one key Excel values", like invoice number or invoice issue date.

**Arguments:**

- `pattern_to_search_for` - for example for inv number, will pass the `PATTERN_FOR_INVOICE_NUMBER_LABEL`.
- `worksheet` - the worksheet containing invoice (as object of `pyxl` library).
- `area_to_scan` - area of cells to be searched, default whole worksheet.
- `targeted_type` - what type expect (will try to convert to, if cannot will return `str`), default `str`.
- `down_search_try` - establish if DOWN search method is tried, default `True`.

**Returns:**

`None` if not found OR `dictionary` containing: \* `"value": int | float | str` - the value found converted to requested `targeted_type` if possible or `str` otherwise; if "out of space" then returns `None` \* `"location": (row, col)` - adrees of cell where found value

**Notes:**

- normal scan order is 1.RIGHT, 2.DOWN (if allowed), 3.IN-LABEL only in given area and pattern.

**mk\_kv\_invoice\_items\_area**

```
def mk_kv_invoice_items_area(invoice_items_area_xl_format) -> dict
```

transform `invoice_items_area` in "canonical JSON format" (as kv pairs).

**Arguments:**

- `invoice_items_area_xl_format` - invoice items area in Excel format (ie, `DataFrame` with row, col, data).

**Returns:**

- `invoice_items_area_xl_format` - dictionary with invoice items in Excel format (ie, rows, columns).

**Notes:**

- for ROefact XML model (& plan) see `invoice_files/__model_test_factura_generat_anaf.xml`.

**get\_invoice\_items\_area**

```
def get_invoice_items_area(worksheet, invoice_items_area_marker,
                           wks_name) -> dict
```

get invoice for `invoice_items_area`, process it and return its Excel format.

Process steps & notes: \* find invoice items subtable. \* clean invoice items subtable. \* extract relevant data. \* NOTE: all Excel cell addresses are in `(row, col)` format (ie, Not Excel format like "A:26, C:42, ...")

**Arguments:**

- `worksheet` - the worksheet containing invoice (as object of `pyxllight` library).
- `invoice_items_area_marker` - string with exact marker of invoice items table.
- `NOTE` - this is the UPPER-LEFT corner and is determined before calling this procedure.
- `wks_name` - the worksheet name (string) of the `worksheet` object.

**Returns:**

- `invoice_items_area` - dictionary with invoice items in Excel format (ie, rows, columns).

# wrxml

wrxml: modul de generare a fisierului format XML

**Identification:**

- code-name: `wrxml`
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

**Specifications:**

- document cerinte initiale: `110-SRE-api_to_roefact_requirements.md` section Componenta x12roefact
- INTRARI: fisier `f-JSON`
- IESIRI: fisier format XML conform cerintelor si sistemului ANAF E-Factura (cod: `f-XML`)

# \_\_init\_\_

\_\_main\_\_

**xl2roefact.main:** Python package standard file to assure run as `python -m xl2roefact`.

Identification:

- code-name: `__main__`
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

Deployments:

- Windows: MSI installer with EXE application.
- Linux: `xl2roefact` executable shell as wrapper for `xl2roefact.py`.

Specifications:

- command general format: `python -m xl2roefact [OPTIONS] COMMAND [ARGS]...`
- help: `python -m xl2roefact --help`.

\_\_version\_\_

xl2roefact version info.

```
#####  #####
#  #  #  #  #
##    ##  #  #
  ##  ##  #  #
##    ##  #  #
#  ##  #  #  #####
#  ##  #  #    #
#####  #####

#####  #####  #####  #####  #####
#    #  #    #  ##    ##  ##    ##  #    #
#    ##  #  #####  #  #####  #  ##  #  ##  #  ##  #####
#  ##  #  #  ##  #  #    #  #  #  #####  #  #
#  #####  #  ##  #  #####  #  ##  #  ##  #  ##
#  #  #  #  ##  #    #  #####  #  #
#  #  #  ##  ##    #  #  #  #  ##    ##  #  #
####  #  #####  #####  #####  #####
```

normalized\_version

```
def normalized_version(raw_version: str = __version__) -> str
```

transform version string in canonical form.

Usage: - `import xl2roefact` - `xl2roefact.__version__.normalized_version()`

**Arguments:**

`raw_version (str)` : a raw version string. Defaults to package current version string.

**Returns:**

`str`: canonical version string

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Last update: March 6, 2024