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# **extras-require**

*Release 0.5.0*

**Display a warning at the top of module documentation  
that it has additional requirements.**

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## Overview

This extension assumes you have a repository laid out like this:

```
.
├── chemistry_tools
│   ├── __init__.py
│   └── formulae
│       ├── __init__.py
│       ├── compound.py
│       ├── formula.py
│       ├── parser.py
│       └── requirements.txt
│   ├── constants.py
│   └── utils.py
├── doc-source
│   ├── api
│   │   ├── chemistry_tools.rst
│   │   ├── elements.rst
│   │   ├── formulae.rst
│   │   └── pubchem.rst
│   ├── conf.py
│   ├── index.rst
│   └── requirements.txt
├── LICENSE
├── README.rst
├── requirements.txt
├── setup.py
└── tox.ini
```

The file `./chemistry_tools/formulae/requirements.txt` contains the additional requirements to run the `formulae` subpackage. These would be defined in `setup.py` like this:

```
setup(
    extras_require={
        "formulae": [
            "mathematical>=0.1.7",
            "pandas>=1.0.1",
            "pyparsing>=2.2.0",
            "tabulate>=0.8.3",
            "cawdrey>=0.1.2",
            "quantities>=0.12.4",
        ],
    },
)
```

A message can be displayed in the documentation to indicate that the subpackage has these additional requirements that must be installed.

For instance, this:

```
.. extras-require:: formulae
   :file: formulae/requirements.txt
```

will produce this:

**Attention:** This module has the following additional requirements:

```
cawdrey>=0.1.2
mathematical>=0.1.7
pandas>=1.0.1
pyparsing>=2.2.0
quantities>=0.12.4
tabulate>=0.8.3
```

These can be installed as follows:

```
$ python -m pip install chemistry_tools[formulae]
```

The path given in `:file:` is relative to the `package_root` variable given in `conf.py`, which in turn is relative to the parent directory of the sphinx documentation. For example, this line:

```
package_root = "chemistry_tools"
```

points to `./chemistry_tools`, and therefore `:file: formulae/requirements.txt` points to `./chemistry_tools/formulae/requirements.txt`.

Requirements can also be specified in `pyproject.toml` (using the option `:pyproject:`), `setup.cfg` (using the option `:setup.cfg:`), or by typing in the requirements manually, one per line.

The `:scope:` option can be used to specify a different scope for additional requirements, such as `package`, `module`, `class` or `function`. Any string value can be supplied here.

# **Part I**

## **Usage**





## Installation

### 2.1 from PyPI

```
$ python3 -m pip install extras_require --user
```

### 2.2 from Anaconda

First add the required channels

```
$ conda config --add channels https://conda.anaconda.org/domdfcoding
$ conda config --add channels https://conda.anaconda.org/conda-forge
```

Then install

```
$ conda install extras_require
```

### 2.3 from GitHub

```
$ python3 -m pip install git+https://github.com/sphinx-toolbox/extras_require@master --user
```

---

Enable `extras_require` by adding the following to the `extensions` variable in your `conf.py`:

```
extensions = [
    ...
    'sphinx-prompt',
    'sphinxcontrib.extras_require',
]
```

For more information see

<https://www.sphinx-doc.org/en/master/usage/extensions#third-party-extensions>.



## Configuration

### **package\_root**

**Type:** `str`

**Required:** `True`

Location of package source directory relative to documentation source directory.

For example,

```
package_root = "chemistry_tools"
```

points to `./chemistry_tools`.

### **pypi\_name**

**Type:** `str`

**Required:** `False`

The name of the package on PyPI.

This is the name provided to `pip install`. Defaults to the name of the project in the [Sphinx configuration](#).

New in version 0.4.0.



## Directive

**.. extras-require::**

The requirements can be specified in several ways:

**:file: requirements\_file (string)**

Shows the requirements from the given file. The file must contain a list of [PEP 508](#) requirements, one per line.

The path is relative to the `package_root` variable given in `conf.py`, which in turn is relative to the parent directory of the sphinx documentation.

**:\_\_pkginfo\_\_: (flag)**

Flag to indicate the requirements should be obtained from `__pkginfo__.py`.

This looks in the parent directory of the sphinx documentation for a file named `__pkginfo__.py`. The requirements are imported as the variable `extras_require`, which must be a dictionary mapping extras to a list of requirements.

**Example:**

```
extras_require = {
    "extra_b": [
        "flask>=1.1.2",
        "click<7.1.2",
        "sphinx==3.0.3",
    ],
}
```

The requirements can be generated programmatically in the `__pkginfo__.py` file during the import process.

**:setup.cfg: (flag)**

Flag to indicate the requirements should be obtained from `setup.cfg`.

This looks in the parent directory of the sphinx documentation for a file named `setup.cfg`. This file must be readable by Python's `configparser` module, and contain the section `[options.extras_require]`.

**Example:**

```
[options.extras_require]
extra_c = faker; pytest; tox
```

See the [setuptools documentation](#) for more information on `setup.cfg`.

**:flit: (flag)**

Flag to indicate the requirements should be obtained from the `[tool.flit.metadata.requires-extra]` section of `pyproject.toml`.

**Example:**

```
[tool.flit.metadata.requires-extra]
test = [
    "pytest>=2.7.3",
    "pytest-cov",
]
doc = ["sphinx"]
```

See the [flit documentation](#) for more details.

**:pyproject: (flag)**

Flag to indicate the requirements should be obtained from the `[project.optional-dependencies]` section of `pyproject.toml`.

**Example:**

```
[project.optional-dependencies]
test = [
    "pytest<5.0.0",
    "pytest-cov[all]"
]
```

See the [PEP 621](#) section on [dependencies/optional-dependencies](#) for more details.

Only one of the above options can be used in each directive.

**Manual requirements:**

If none of the above options are provided the [PEP 508](#) requirements can instead be provided as the content of the directive. Each requirement must be on its own line, and there must be a blank line between the directive and the list of requirements. e.g.

```
.. extras-require:: dates

    pytz >=2019.1
```

**Attention:** This module has the following additional requirement:

```
pytz>=2019.1
```

This can be installed as follows:

```
$ python -m pip install chemistry_tools[dates]
```

**Other options:**

**:scope:** (string)

Specifies a different scope for additional requirements, such as package, module, class or function.

Any string value can be supplied here.

### Example

```
.. extras-require:: foo
   :scope: class

   bar
   baz
```

**Attention:** This class has the following additional requirements:

```
bar
baz
```

These can be installed as follows:

```
$ python -m pip install chemistry_tools[foo]
```





## **Part II**

# **API Reference**



## **sphinxcontrib.extras\_require**

A Sphinx directive to specify that a module has extra requirements, and show how to install them.

### **Functions:**

---

<code>setup(app)</code>	Setup <code>sphinxcontrib.extras_require</code> .
-------------------------	---

---

#### **setup** (*app*)

Setup `sphinxcontrib.extras_require`.

**Parameters** `app` (`Sphinx`) – The Sphinx app.

**Return type** `Dict[str, Any]`



## `sphinxcontrib.extras_require.directive`

The *extras-require* directive.

### Classes:

<code>ExtrasRequireDirective</code> (name, arguments, ...)	Directive to show a notice to users that a module, class or function has additional requirements.
--	---

### Functions:

<code>get_requirements</code> (env, extra, options, content)	Get the requirements for the extras_require node.
<code>make_node_content</code> (requirements, ...[, scope])	Create the content of an extras_require node.
<code>validate_requirements</code> (requirements_list)	Validate a list of <b>PEP 508</b> requirements and format them consistently.

**class** `ExtrasRequireDirective` (*name, arguments, options, content, lineno, content\_offset, block\_text, state, state\_machine*)

Bases: `SphinxDirective`

Directive to show a notice to users that a module, class or function has additional requirements.

### Attributes:

<code>required_arguments</code>	One argument is required, the name of the extra (e.g.
---------------------------------	---

### Methods:

<code>run()</code>	Create the extras_require node.
--------------------	---------------------------------

`required_arguments = 1`

Type: `int`

One argument is required, the name of the extra (e.g. “testing”, “docs”)

`run()`

Create the extras\_require node.

Return type `List[Node]`

`get_requirements` (*env, extra, options, content*)

Get the requirements for the extras\_require node.

### Parameters

- `env` (`BuildEnvironment`)

- **extra** (`str`)
- **options** (`Dict[str, Any]`)
- **content** (`Union[Iterable, ViewList]`)

**Return type** `List[str]`

**make\_node\_content** (*requirements, package\_name, extra, scope='module'*)

Create the content of an extras\_require node.

**Parameters**

- **requirements** (`List[str]`) – List of additional **PEP 508** requirements.
- **package\_name** (`str`) – The name of the module/package on PyPI.
- **extra** (`str`) – The name of the “extra”.
- **scope** (`str`) – The scope of the additional requirements, e.g. "module", "package". Default 'module'.

**Return type** `str`

**Returns** The content of an extras\_require node.

**validate\_requirements** (*requirements\_list*)

Validate a list of **PEP 508** requirements and format them consistently.

**Parameters** **requirements\_list** (`List[str]`) – List of **PEP 508** requirements.

**Return type** `List[str]`

**Returns** List of **PEP 508** requirements with consistent formatting.

## **sphinxcontrib.extras\_require.sources**

Supported sources for the requirements are implemented here.

### **Data:**

<code>sources</code>	Instance of <code>Sources</code> .
----------------------	------------------------------------

### **Classes:**

<code>Sources([iterable])</code>	Class to store functions that provide requirements sources.
----------------------------------	---

### **Functions:**

<code>requirements_from_file(package_root, ...)</code>	Load requirements from the specified file.
<code>requirements_from_flit(package_root, ...)</code>	Load requirements from the [tool.flit.metadata.requires-extra] section of a <code>pyproject.toml</code> file in the root of the repository.
<code>requirements_from_pkginfo(package_root, ...)</code>	Load requirements from a <code>__pkginfo__.py</code> file in the root of the repository.
<code>requirements_from_pyproject(package_root, ...)</code>	Load requirements from the [project.optional-dependencies] section of a <code>pyproject.toml</code> file in the root of the repository.
<code>requirements_from_setup_cfg(package_root, ...)</code>	Load requirements from a <code>setup.cfg</code> file in the root of the repository.

**class Sources** (*iterable=()*, /)

Bases: `List[Tuple[str, Callable, Callable]]`

Class to store functions that provide requirements sources.

The syntax of each entry is:

`(option_name, getter_function, validator_function)`

- a string to use in the directive to specify the source to use,
- the function that returns the list of additional requirements,
- a function to validate the option value provided by the user.

## Methods:

<code>register(option_name[, validator])</code>	Decorator to register a function.
---	-----------------------------------

**register** (*option\_name*, *validator*=<function 'unchanged'>)

Decorator to register a function.

The function must have the following signature:

```
def function(
    package_root: pathlib.Path,
    options: Dict,
    env: sphinx.environment.BuildEnvironment,
    extra: str,
) -> List[str]: ...
```

## Parameters

- **option\_name** (*str*) – A string to use in the directive to specify the source to use.
- **validator** (*Callable*) – A function to validate the option value provided by the user.  
Default `docutils.parsers.rst.directives.unchanged()`.

**Return type** *Callable*

**Returns** The registered function.

**Raises** *SyntaxError* if the decorated function does not take the correct arguments.

**requirements\_from\_file** (*package\_root*, *options*, *env*, *extra*)

Load requirements from the specified file.

## Parameters

- **package\_root** (*Path*) – The path to the package root
- **options** (*Dict*)
- **env** (*BuildEnvironment*)
- **extra** (*str*) – The name of the “extra” that the requirements are for

**Return type** *List[str]*

**Returns** List of requirements

**requirements\_from\_flit** (*package\_root*, *options*, *env*, *extra*)

Load requirements from the `[tool.flit.metadata.requires-extra]` section of a `pyproject.toml` file in the root of the repository.

## Parameters

- **package\_root** (*Path*) – The path to the package root.
- **options** (*Dict*)
- **env** (*BuildEnvironment*)
- **extra** (*str*) – The name of the “extra” that the requirements are for.

**Return type** *List[str]*



**Returns** List of requirements.

**requirements\_from\_pkginfo** (*package\_root, options, env, extra*)

Load requirements from a `__pkginfo__.py` file in the root of the repository.

**Parameters**

- **package\_root** (`Path`) – The path to the package root
- **options** (`Dict`)
- **env** (`BuildEnvironment`)
- **extra** (`str`) – The name of the “extra” that the requirements are for

**Return type** `List[str]`

**Returns** List of requirements

**requirements\_from\_pyproject** (*package\_root, options, env, extra*)

Load requirements from the `[project.optional-dependencies]` section of a `pyproject.toml` file in the root of the repository.

**See also:** [PEP 621](#) – Storing project metadata in `pyproject.toml`

New in version 0.3.0.

**Parameters**

- **package\_root** (`Path`) – The path to the package root.
- **options** (`Dict`)
- **env** (`BuildEnvironment`)
- **extra** (`str`) – The name of the “extra” that the requirements are for.

**Return type** `List[str]`

**Returns** List of requirements.

**requirements\_from\_setup\_cfg** (*package\_root, options, env, extra*)

Load requirements from a `setup.cfg` file in the root of the repository.

**Parameters**

- **package\_root** (`Path`) – The path to the package root.
- **options** (`Dict`)
- **env** (`BuildEnvironment`)
- **extra** (`str`) – The name of the “extra” that the requirements are for.

**Return type** `List[str]`

**Returns** List of requirements.

**sources**

Instance of `Sources`.



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