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# **astatine**

***Release 0.3.3***

**Some handy helper functions for Python's AST module.**

**Dominic Davis-Foster**

**Aug 15, 2023**



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## Installation

### 1.1 from PyPI

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

### 1.2 from Anaconda

First add the required channels

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

Then install

```
$ conda install astatine
```

### 1.3 from GitHub

```
$ python3 -m pip install git+https://github.com/python-formate/astatine@master --user
```



## astatine

Some handy helper functions for Python's AST module.

### Functions:

<code>get_attribute_name(node)</code>	Returns the elements of the dotted attribute name for the given AST node.
<code>get_constants(module)</code>	Returns a <code>name: value</code> mapping of constants in the given module.
<code>get_contextmanagers(with_node)</code>	For the given <code>with</code> block, returns a mapping of the contextmanager names to the individual nodes.
<code>get_docstring_lineno(node)</code>	Returns the line number of the start of the docstring for <code>node</code> .
<code>get_toplevel_comments(source)</code>	Returns a list of comment lines from <code>source</code> which occur before the first line of source code (including before module-level docstrings).
<code>is_type_checking(node)</code>	Returns whether the given <code>if</code> block is <code>if typing.TYPE_CHECKING</code> or equivalent.
<code>kwargs_from_node(node, posarg_names)</code>	Returns a mapping of argument names to the AST nodes representing their values, for the given function call.
<code>mark_text_ranges(node, source)</code>	Recursively add the <code>end_lineno</code> and <code>end_col_offset</code> attributes to each child of <code>node</code> which already has the attributes <code>lineno</code> and <code>col_offset</code> .

#### `get_attribute_name (node)`

Returns the elements of the dotted attribute name for the given AST node.

New in version 0.3.1.

**Parameters** `node` (AST)

**Raises** `NotImplementedError` – if the name contains an unknown node (i.e. not `ast.Name`, `ast.Attribute`, or `ast.Call`)

**Return type** `Iterable[str]`

#### `get_constants (module)`

Returns a `name: value` mapping of constants in the given module.

New in version 0.3.1.

**Parameters** `module` (`Module`)

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

**get\_contextmanagers** (*with\_node*)

For the given `with` block, returns a mapping of the contextmanager names to the individual nodes.

New in version 0.3.1.

**Parameters** `with_node` (`With`)

**Return type** `Dict[Tuple[str, ...], withitem]`

**get\_docstring\_lineno** (*node*)

Returns the line number of the start of the docstring for `node`.

**Parameters** `node` (`Union[FunctionDef, ClassDef, Module]`)

**Warning:** On CPython 3.6 and 3.7 the line number may not be correct, due to <https://bugs.python.org/issue16806>.

CPython 3.8 and above are unaffected, as are PyPy 3.6 and 3.7

Accurate line numbers on CPython 3.6 and 3.7 may be obtained by using [https://github.com/domdfcoding/typed\\_ast](https://github.com/domdfcoding/typed_ast), which contains the backported fix from Python 3.8.

**Return type** `Optional[int]`

**get\_toplevel\_comments** (*source*)

Returns a list of comment lines from `source` which occur before the first line of source code (including before module-level docstrings).

**Parameters** `source` (`str`)

**Return type** `StringList`

**is\_type\_checking** (*node*)

Returns whether the given `if` block is `if typing.TYPE_CHECKING` or equivalent.

**Parameters** `node` (`AST`)

**Return type** `bool`

**kwargs\_from\_node** (*node*, *posarg\_names*)

Returns a mapping of argument names to the AST nodes representing their values, for the given function call.

New in version 0.3.1.

**Parameters**

- **node** (`Call`)
- **posarg\_names** (`Union[Iterable[str], Callable]`) – Either a list of positional argument names for the function, or the function object.

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



**mark\_text\_ranges** (*node*, *source*)

Recursively add the `end_lineno` and `end_col_offset` attributes to each child of `node` which already has the attributes `lineno` and `col_offset`.

**Parameters**

- **node** (`AST`) – An AST node created with `ast.parse()`.
- **source** (`str`) – The corresponding source code for the node.



## Downloading source code

The `astatine` source code is available on GitHub, and can be accessed from the following URL: <https://github.com/python-formate/astatine>

If you have `git` installed, you can clone the repository with the following command:

```
$ git clone https://github.com/python-formate/astatine
```

```
Cloning into 'astatine'...
remote: Enumerating objects: 47, done.
remote: Counting objects: 100% (47/47), done.
remote: Compressing objects: 100% (41/41), done.
remote: Total 173 (delta 16), reused 17 (delta 6), pack-reused 126
Receiving objects: 100% (173/173), 126.56 KiB | 678.00 KiB/s, done.
Resolving deltas: 100% (66/66), done.
```

Alternatively, the code can be downloaded in a ‘zip’ file by clicking:

*Clone or download → Download Zip*

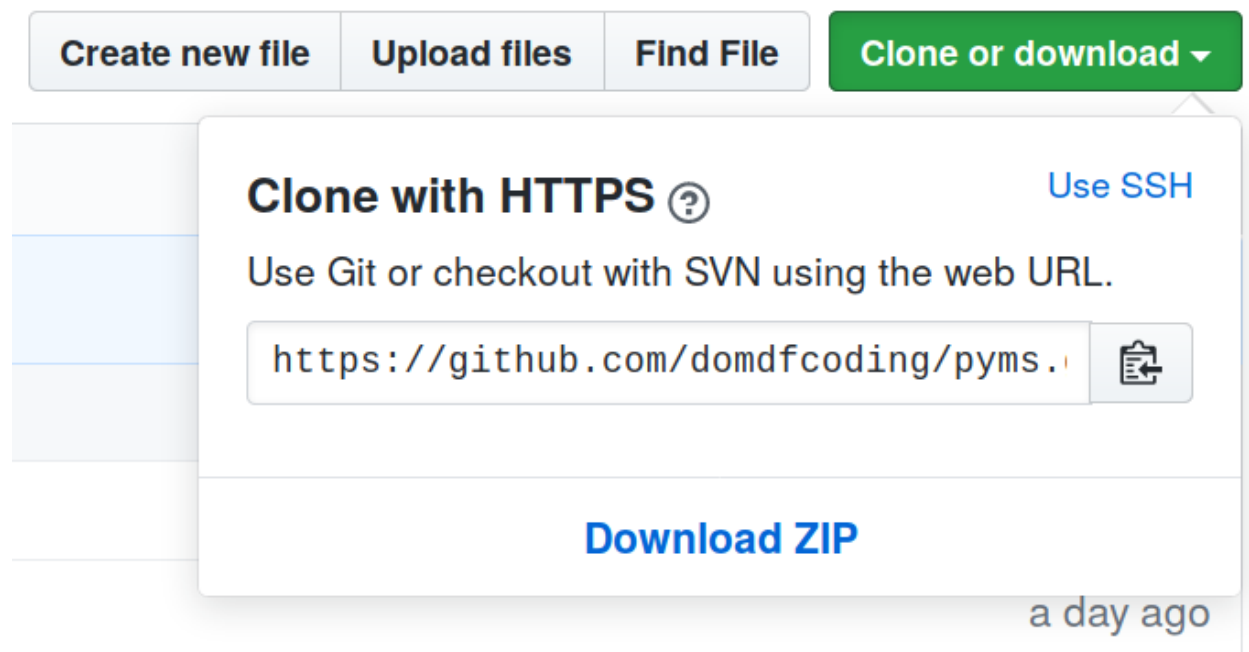


Fig. 1: Downloading a ‘zip’ file of the source code

## 3.1 Building from source

The recommended way to build `astatine` is to use `tox`:

```
$ tox -e build
```

The source and wheel distributions will be in the directory `dist`.

If you wish, you may also use `pep517.build` or another **PEP 517**-compatible build tool.

## License

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```

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