
pythonfinder Documentation

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PYTHONFINDER: CROSS PLATFORM SEARCH TOOL FOR FINDING PYTHONS

1.1 Installation

Install from PyPI:

```
$ pipenv install pythonfinder
```

Install from Github:

```
$ pipenv install -e git+https://github.com/sarugaku/pythonfinder.git#egg=pythonfinder
```

1.2 Usage

Using PythonFinder is easy. Simply import it and ask for a python:

```
>>> from pythonfinder.pythonfinder import PythonFinder
>>> PythonFinder.from_line('python3')
'/home/techalchemy/.pyenv/versions/3.6.5/python3'

>>> from pythonfinder import Finder
>>> f = Finder()
>>> f.find_python_version(3, minor=6)
PathEntry(path=PosixPath('/home/hawk/.pyenv/versions/3.6.5/bin/python'), _children={},
↳ is_root=False, only_python=False, py_version=PythonVersion(major=3, minor=6, patch=5,
↳ is_prerelease=False, is_postrelease=False, is_devrelease=False, version=<Version('3.6.5
↳ '>), architecture='64bit', comes_from=PathEntry(path=PosixPath('/home/hawk/.pyenv/
↳ versions/3.6.5/bin/python'), _children={}, is_root=True, only_python=False, py_
↳ version=None, pythons=None), executable=None), pythons=None)
>>> f.find_python_version(2)
PathEntry(path=PosixPath('/home/hawk/.pyenv/shims/python2'), ...py_
```

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```

↪version=PythonVersion(major=2, minor=7, patch=15, is_prerelease=False, is_
↪postrelease=False, is_devrelease=False, version=<Version('2.7.15')>, architecture=
↪'64bit', comes_from=PathEntry(path=PosixPath('/home/hawk/.pyenv/shims/python2'), _
↪children={}, is_root=True, only_python=False, py_version=None, pythons=None),
↪executable=None), pythons=None)
>>> f.find_python_version("anaconda3-5.3.0")

```

Find a named distribution, such as anaconda3-5.3.0:

```

PathEntry(path=PosixPath('/home/hawk/.pyenv/versions/anaconda3-5.3.0/bin/python3.7m'), _
↪children={'/home/hawk/.pyenv/versions/anaconda3-5.3.0/bin/python3.7m': ...}, only_
↪python=False, name='anaconda3-5.3.0', _py_version=PythonVersion(major=3, minor=7,
↪patch=0, is_prerelease=False, is_postrelease=False, is_devrelease=False,...))

```

PythonFinder can even find beta releases:

```

>>> f.find_python_version(3, minor=7)
PathEntry(path=PosixPath('/home/hawk/.pyenv/versions/3.7.0b1/bin/python'), _children={},
↪is_root=False, only_python=False, py_version=PythonVersion(major=3, minor=7, patch=0,
↪is_prerelease=True, is_postrelease=False, is_devrelease=False, version=<Version('3.7.
↪0b1')>, architecture='64bit', comes_from=PathEntry(path=PosixPath('/home/hawk/.pyenv/
↪versions/3.7.0b1/bin/python'), _children={}, is_root=True, only_python=False, py_
↪version=None, pythons=None), executable=None), pythons=None)

>>> f.which('python')
PathEntry(path=PosixPath('/home/hawk/.pyenv/versions/3.6.5/bin/python'), _children={},
↪is_root=False, only_python=False, py_version=PythonVersion(major=3, minor=6, patch=5,
↪is_prerelease=False, is_postrelease=False, is_devrelease=False, version=<Version('3.6.5
↪')>, architecture='64bit', comes_from=PathEntry(path=PosixPath('/home/hawk/.pyenv/
↪versions/3.6.5/bin/python'), _children={}, is_root=True, only_python=False, py_
↪version=None, pythons=None), executable=None), pythons=None)

```

1.3 Windows Support

PythonFinder natively supports windows via both the *PATH* environment variable and [PEP-514](#) compliant finder which comes by default with python 3. Usage on windows becomes:

```

>>> from pythonfinder import Finder
>>> f = Finder()
>>> f.find_python_version(3, minor=6)
PythonVersion(major=3, minor=6, patch=4, is_prerelease=False, is_postrelease=False, is_
↪devrelease=False, version=<Version('3.6.4')>, architecture='64bit', comes_
↪from=PathEntry(path=WindowsPath('C:/Program Files/Python36/python.exe'), _children={},
↪is_root=False, only_python=True, py_version=None, pythons=None),
↪executable=WindowsPath('C:/Program Files/Python36/python.exe'))

>>> f.find_python_version(3, minor=7, pre=True)
PythonVersion(major=3, minor=7, patch=0, is_prerelease=True, is_postrelease=False, is_
↪devrelease=False, version=<Version('3.7.0b5')>, architecture='64bit', comes_
↪from=PathEntry(path=WindowsPath('C:/Program Files/Python37/python.exe'), _children={},

```

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```

↪ is_root=False, only_python=True, py_version=None, pythons=None), ↪
↪ executable=WindowsPath('C:/Program Files/Python37/python.exe'))

>>> f.which('python')
PathEntry(path=WindowsPath('C:/Python27/python.exe'), _children={}, is_root=False, only_
↪ python=False, py_version=None, pythons=None)

```

1.3.1 Finding Executables

PythonFinder also provides **which** functionality across platforms, and it uses lazy loading and fast-returns to be performant at this task.

```

>>> f.which('cmd')
PathEntry(path=WindowsPath('C:/windows/system32/cmd.exe'), _children={}, is_root=False, ↪
↪ only_python=False, py_version=None, pythons=None)

>>> f.which('code')
PathEntry(path=WindowsPath('C:/Program Files/Microsoft VS Code/bin/code'), _children={}, ↪
↪ is_root=False, only_python=False, py_version=None, pythons=None)

>>> f.which('vim')
PathEntry(path=PosixPath('/usr/bin/vim'), _children={}, is_root=False, only_python=False,
↪ py_version=None, pythons=None)

>>> f.which('inv')
PathEntry(path=PosixPath('/home/hawk/.pyenv/versions/3.6.5/bin/inv'), _children={}, is_
↪ root=False, only_python=False, py_version=None, pythons=None)

```

1.3.2 Architecture support

PythonFinder supports architecture specific lookups on all platforms:

```

>>> f.find_python_version(3, minor=6, arch="64")
PathEntry(path=PosixPath('/usr/bin/python3'), _children={'/usr/bin/python3': ...}, only_
↪ python=False, name='python3', _py_version=PythonVersion(major=3, minor=6, patch=7, is_
↪ prerelease=False, is_postrelease=False, is_devrelease=False, is_debug=False, version=
↪ <Version('3.6.7')>, architecture='64bit', comes_from=..., executable='/usr/bin/python3
↪ ', name='python3'), _pythons=defaultdict(None, {}), is_root=False)

```

1.4 Integrations

- Pyenv
- ASDF
- PEP-514
- Virtualenv
- Pipenv

PYTHONFINDER PACKAGE

```
class pythonfinder.Finder(**data)
```

```
    Bases: FinderBaseModel
```

```
    create_system_path()
```

```
        Return type
```

```
            SystemPath
```

```
    find_all_python_versions(major=None, minor=None, patch=None, pre=None, dev=None, arch=None,
                             name=None)
```

```
        Return type
```

```
            list[PathEntry]
```

```
    find_python_version(major=None, minor=None, patch=None, pre=None, dev=None, arch=None,
                        name=None, sort_by_path=False)
```

Find the python version which corresponds most closely to the version requested.

Parameters

- **major** (*str* | *int* | *None*) – The major version to look for, or the full version, or the name of the target version.
- **minor** (*int* | *None*) – The minor version. If provided, disables string-based lookups from the major version field.
- **patch** (*int* | *None*) – The patch version.
- **pre** (*bool* | *None*) – If provided, specifies whether to search pre-releases.
- **dev** (*bool* | *None*) – If provided, whether to search dev-releases.
- **arch** (*str* | *None*) – If provided, which architecture to search.
- **name** (*str* | *None*) – Name of the target python, e.g. `anaconda3-5.3.0`
- **sort_by_path** (*bool*) – Whether to sort by path – default sort is by version(default: False)

Return type

PathEntry | *None*

Returns

A new *PathEntry* pointer at a matching python version, if one can be located.

```
global_search: bool
```

```
ignore_unsupported: bool
```

classmethod `parse_major`(*major*, *minor=None*, *patch=None*, *pre=None*, *dev=None*, *arch=None*)

Return type

`dict[str, Any]`

path_prepend: `Optional[str]`

sort_by_path: `bool`

system: `bool`

system_path: `Optional[SystemPath]`

which(*exe*)

Return type

`PathEntry | None`

exception `pythonfinder.InvalidPythonVersion`

Bases: `Exception`

Raised when parsing an invalid python version

class `pythonfinder.SystemPath`(**global_search: bool = True*, *paths: Dict[str, Union[PythonFinder, PathEntry]] = None*, *executables_tracking: List[PathEntry] = None*, *python_executables_tracking: Dict[str, PathEntry] = None*, *path_order: List[str] = None*, *python_version_dict: Dict[Tuple, Any] = None*, *version_dict_tracking: Dict[Tuple, List[PathEntry]] = None*, *only_python: bool = False*, *pyenv_finder: Optional[PythonFinder] = None*, *asdf_finder: Optional[PythonFinder] = None*, *system: bool = False*, *ignore_unsupported: bool = False*, *finders_dict: Dict[str, PythonFinder] = None*)

Bases: `FinderBaseModel`

class `Config`

Bases: `object`

allow_mutation = `True`

arbitrary_types_allowed = `True`

include_private_attributes = `True`

keep_untouched = (`<<class 'cached_property.cached_property'>`),)

validate_assignment = `True`

asdf_finder: `Optional[PythonFinder]`

static `check_for_asdf`()

static `check_for_pyenv`()

classmethod `create`(*path=None*, *system=False*, *only_python=False*, *global_search=True*, *ignore_unsupported=True*)

Create a new `pythonfinder.models.SystemPath` instance.

Parameters

- **path** (`str` | `None`) – Search path to prepend when searching, defaults to `None`
- **path** – `str`, optional

- **system** (*bool*) – Whether to use the running python by default instead of searching, defaults to False
- **only_python** (*bool*) – Whether to search only for python executables, defaults to False
- **ignore_unsupported** (*bool*) – Whether to ignore unsupported python versions, if False, an error is raised, defaults to True

Return type*SystemPath***Returns**A new `pythonfinder.models.SystemPath` instance.**property executables:** `list[PathEntry]`**executables_tracking:** `List[PathEntry]`**find_all** (*executable*)

Search the path for an executable. Return all copies.

Parameters**executable** (*str*) – Name of the executable**Return type**`list[PathEntry | PythonFinder]`**Returns**`List[PathEntry]`**find_all_python_versions** (*major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None*)**Return type**`list[PathEntry]`**find_python_version** (*major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None, sort_by_path=False*)**Return type***PathEntry***property finders:** `list[str]`**finders_dict:** `Dict[str, PythonFinder]`**get_path** (*path*)**Return type***PythonFinder | PathEntry***get_pythons** (*finder*)**Return type***Iterator***global_search:** `bool`**ignore_unsupported:** `bool`**only_python:** `bool`

```
path_entries
path_order: List[str]
paths: Dict[str, Union[PythonFinder, PathEntry]]
pyenv_finder: Optional[PythonFinder]
python_executables
python_executables_tracking: Dict[str, PathEntry]
python_version_dict: Dict[Tuple, Any]
classmethod set_defaults(values)
system: bool
version_dict
version_dict_tracking: Dict[Tuple, List[PathEntry]]
which(executable)
```

Search for an executable on the path.

Parameters

executable (*str*) – Name of the executable to be located.

Return type

PathEntry | None

Returns

PathEntry object.

2.1 Subpackages

2.1.1 pythonfinder.models package

2.1.1.1 Submodules

pythonfinder.models.mixins module

```
class pythonfinder.models.mixins.PathEntry(**data)
```

Bases: BaseModel

```
class Config
```

Bases: object

```
allow_mutation = True
```

```
arbitrary_types_allowed = True
```

```
include_private_attributes = True
```

```
validate_assignment = True
```

property `as_python`: `PythonVersion`

property `children`: `dict[str, PathEntry]`

property `children_ref`: `Optional[Any]`

classmethod `create`(*path*, *is_root=False*, *only_python=False*, *pythons=None*, *name=None*)

Helper method for creating new `pythonfinder.models.PathEntry` instances.

Parameters

- **path** (*str*) – Path to the specified location.
- **is_root** (*bool*) – Whether this is a root from the environment PATH variable, defaults to False
- **only_python** (*bool*) – Whether to search only for python executables, defaults to False
- **pythons** (*dict*) – A dictionary of existing python objects (usually from a finder), defaults to None
- **name** (*str*) – Name of the python version, e.g. `anaconda3-5.3.0`

Return type

`PathEntry`

Returns

A new instance of the class.

find_all_python_versions(*major=None*, *minor=None*, *patch=None*, *pre=None*, *dev=None*, *arch=None*, *name=None*)

Search for a specific python version on the path. Return all copies

Parameters

- **major** (*int*) – Major python version to search for.
- **minor** (*int*) – Minor python version to search for, defaults to None
- **patch** (*int*) – Patch python version to search for, defaults to None
- **pre** (*bool*) – Search for prereleases (default None) - prioritize releases if None
- **dev** (*bool*) – Search for devreleases (default None) - prioritize releases if None
- **arch** (*str*) – Architecture to include, e.g. `'64bit'`, defaults to None
- **name** (*str*) – The name of a python version, e.g. `anaconda3-5.3.0`

Return type

`list[PathEntry]`

Returns

A list of `PathEntry` instances matching the version requested.

find_python_version(*major=None*, *minor=None*, *patch=None*, *pre=None*, *dev=None*, *arch=None*, *name=None*)

Search or self for the specified Python version and return the first match.

Parameters

- **major** (*int*) – Major version number.
- **minor** (*int*) – Minor python version to search for, defaults to None
- **patch** (*int*) – Patch python version to search for, defaults to None

- **pre** (*bool*) – Search for prereleases (default None) - prioritize releases if None
- **dev** (*bool*) – Search for devreleases (default None) - prioritize releases if None
- **arch** (*str*) – Architecture to include, e.g. '64bit', defaults to None
- **name** (*str*) – The name of a python version, e.g. anaconda3-5.3.0

Return type*PathEntry* | None**Returns**A *PathEntry* instance matching the version requested.`get_py_version()``property is_dir: bool``is_dir_ref: Optional[bool]``property is_executable: bool``is_executable_ref: Optional[bool]``property is_python: bool``is_python_ref: Optional[bool]``is_root: bool``name: Optional[str]``next()`**Return type***Generator*`only_python: Optional[bool]``path: Optional[Path]``property py_version: PythonVersion | None``py_version_ref: Optional[Any]``property pythons: dict[str | Path, PathEntry]``pythons_ref: Optional[Dict[Any, Any]]``classmethod set_children(v, values, **kwargs)``which(name)`

Search in this path for an executable.

Parameters**executable** (*str*) – The name of an executable to search for.**Return type***PathEntry* | None**Returns***PathEntry* instance.

pythonfinder.models.path module

```
class pythonfinder.models.path.SystemPath(*, global_search: bool = True, paths: Dict[str,
Union[PythonFinder, PathEntry]] = None,
executables_tracking: List[PathEntry] = None,
python_executables_tracking: Dict[str, PathEntry] = None,
path_order: List[str] = None, python_version_dict:
Dict[Tuple, Any] = None, version_dict_tracking: Dict[Tuple,
List[PathEntry]] = None, only_python: bool = False,
pyenv_finder: Optional[PythonFinder] = None, asdf_finder:
Optional[PythonFinder] = None, system: bool = False,
ignore_unsupported: bool = False, finders_dict: Dict[str,
PythonFinder] = None)
```

Bases: `FinderBaseModel`

```
class Config
```

Bases: `object`

```
allow_mutation = True
```

```
arbitrary_types_allowed = True
```

```
include_private_attributes = True
```

```
keep_untouched = (<class 'cached_property.cached_property'>,)
```

```
validate_assignment = True
```

```
asdf_finder: Optional[PythonFinder]
```

```
static check_for_asdf()
```

```
static check_for_pyenv()
```

```
classmethod create(path=None, system=False, only_python=False, global_search=True,
ignore_unsupported=True)
```

Create a new `pythonfinder.models.SystemPath` instance.

Parameters

- **path** (*str* / *None*) – Search path to prepend when searching, defaults to *None*
- **path** – *str*, optional
- **system** (*bool*) – Whether to use the running python by default instead of searching, defaults to *False*
- **only_python** (*bool*) – Whether to search only for python executables, defaults to *False*
- **ignore_unsupported** (*bool*) – Whether to ignore unsupported python versions, if *False*, an error is raised, defaults to *True*

Return type

SystemPath

Returns

A new `pythonfinder.models.SystemPath` instance.

```
property executables
```

executables_tracking: List[PathEntry]

find_all(*executable*)

Search the path for an executable. Return all copies.

Parameters

executable (*str*) – Name of the executable

Return type

list[PathEntry | PythonFinder]

Returns

List[PathEntry]

find_all_python_versions(*major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None*)

Return type

list[PathEntry]

find_python_version(*major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None, sort_by_path=False*)

Return type

PathEntry

property finders

finders_dict: Dict[str, PythonFinder]

get_path(*path*)

Return type

PythonFinder | PathEntry

get_pythons(*finder*)

Return type

Iterator

global_search: bool

ignore_unsupported: bool

only_python: bool

path_entries

path_order: List[str]

paths: Dict[str, Union[PythonFinder, PathEntry]]

pyenv_finder: Optional[PythonFinder]

python_executables

python_executables_tracking: Dict[str, PathEntry]

python_version_dict: Dict[Tuple, Any]

classmethod set_defaults(*values*)

system: bool

version_dict

version_dict_tracking: Dict[Tuple, List[PathEntry]]

which(*executable*)

Search for an executable on the path.

Parameters

executable (*str*) – Name of the executable to be located.

Return type

PathEntry | None

Returns

PathEntry object.

pythonfinder.models.path.exists_and_is_accessible(*path*)

pythonfinder.models.python module

class pythonfinder.models.python.PythonFinder(***data*)

Bases: *PathEntry*

class Config

Bases: *object*

allow_mutation = True

arbitrary_types_allowed = True

include_private_attributes = True

validate_assignment = True

classmethod create(*root*, *sort_function*, *version_glob_path=None*, *ignore_unsupported=True*)

Helper method for creating new pythonfinder.models.PathEntry instances.

Parameters

- **path** (*str*) – Path to the specified location.
- **is_root** (*bool*) – Whether this is a root from the environment PATH variable, defaults to False
- **only_python** (*bool*) – Whether to search only for python executables, defaults to False
- **pythons** (*dict*) – A dictionary of existing python objects (usually from a finder), defaults to None
- **name** (*str*) – Name of the python version, e.g. anaconda3-5.3.0

Return type

PythonFinder

Returns

A new instance of the class.

find_all_python_versions(*major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None*)

Search for a specific python version on the path. Return all copies

Parameters

- **major** (*int*) – Major python version to search for.
- **minor** (*int*) – Minor python version to search for, defaults to None
- **patch** (*int*) – Patch python version to search for, defaults to None
- **pre** (*bool*) – Search for prereleases (default None) - prioritize releases if None
- **dev** (*bool*) – Search for devreleases (default None) - prioritize releases if None
- **arch** (*str*) – Architecture to include, e.g. '64bit', defaults to None
- **name** (*str*) – The name of a python version, e.g. anaconda3-5.3.0

Return type

list[*PathEntry*]

Returns

A list of *PathEntry* instances matching the version requested.

find_python_version(*major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None*)

Search or self for the specified Python version and return the first match.

Parameters

- **major** (*int*) – Major version number.
- **minor** (*int*) – Minor python version to search for, defaults to None
- **patch** (*int*) – Patch python version to search for, defaults to None
- **pre** (*bool*) – Search for prereleases (default None) - prioritize releases if None
- **dev** (*bool*) – Search for devreleases (default None) - prioritize releases if None
- **arch** (*str*) – Architecture to include, e.g. '64bit', defaults to None
- **name** (*str*) – The name of a python version, e.g. anaconda3-5.3.0

Return type

PathEntry | None

Returns

A *PathEntry* instance matching the version requested.

get_bin_dir(*base*)

Return type

Path

classmethod get_paths(*v*)

get_pythons()

Return type

DefaultDict[*str*, *PathEntry*]

get_version_order()

ignore_unsupported: `bool`

Whether to ignore any paths which raise exceptions and are not actually python

property is_asdf: `bool`

property is_pyenv: `bool`

paths: `List`

List of paths discovered during search

property pythons: `dict`

pythons_ref: `Dict`

root: `Path`

roots: `Dict`

The root locations used for discovery

sort_function: `Optional[Callable]`

The function to use to sort version order when returning an ordered version set

classmethod version_from_bin_dir(*entry*)

Return type

`PathEntry` | `None`

version_glob_path: `str`

Glob path for python versions off of the root directory

property version_paths: `Any`

property versions: `DefaultDict[tuple, PathEntry]`

which(*name*)

Search in this path for an executable.

Parameters

executable (*str*) – The name of an executable to search for.

Return type

`PathEntry` | `None`

Returns

`PathEntry` instance.

```
class pythonfinder.models.python.PythonVersion(**data)
```

Bases: `FinderBaseModel`

```
class Config
```

Bases: `object`

`allow_mutation = True`

`arbitrary_types_allowed = True`

`include_private_attributes = True`

`validate_assignment = True`

architecture: Optional[str]

as_dict()

Return type

dict[str, int | bool | Version | None]

as_major()

Return type

PythonVersion

as_minor()

Return type

PythonVersion

comes_from: Optional['PathEntry']

company: Optional[str]

classmethod create(kwargs)**

Return type

PythonVersion

executable: Optional[Union[str, WindowsPath, Path]]

classmethod from_path(path, name=None, ignore_unsupported=True, company=None)

Parses a python version from a system path.

Raises:

ValueError – Not a valid python path

Parameters

- **path** (str or PathEntry instance) – A string or PathEntry
- **name** (*str*) – Name of the python distribution in question
- **ignore_unsupported** (*bool*) – Whether to ignore or error on unsupported paths.
- **company** (*Optional[str]*) – The company or vendor packaging the distribution.

Return type

PythonVersion

Returns

An instance of a PythonVersion.

classmethod from_windows_launcher(launcher_entry, name=None, company=None)

Create a new PythonVersion instance from a Windows Launcher Entry

Parameters

- **launcher_entry** – A python launcher environment object.
- **name** (*Optional[str]*) – The name of the distribution.
- **company** (*Optional[str]*) – The name of the distributing company.

Return type

PythonVersion

Returns

An instance of a PythonVersion.

get_architecture()**Return type**

`str`

is_debug: `bool`**is_devrelease:** `bool`**is_postrelease:** `bool`**is_prerelease:** `bool`**major:** `int`**matches**(*major=None, minor=None, patch=None, pre=False, dev=False, arch=None, debug=False, python_name=None*)**Return type**

`bool`

minor: `Optional[int]`**name:** `Optional[str]`**classmethod parse**(*version*)

Parse a valid version string into a dictionary

Raises:

`ValueError` – Unable to parse version string
`ValueError` – Not a valid python version
`TypeError` – `NoneType` or unparsable type passed in

Parameters

version (*str*) – A valid version string

Return type

`dict[str, str | int | Version]`

Returns

A dictionary with metadata about the specified python version.

classmethod parse_executable(*path*)**Return type**

`dict[str, str | int | Version | None]`

patch: `Optional[int]`**update_metadata**(*metadata*)

Update the metadata on the current `pythonfinder.models.python.PythonVersion`

Given a parsed version dictionary from `pythonfinder.utils.parse_python_version()`, update the instance variables of the current version instance to reflect the newly supplied values.

Return type

`None`

version: Optional[Version]

property version_sort: tuple[int, int, int | None, int, int]

A tuple for sorting against other instances of the same class.

Returns a tuple of the python version but includes points for core python, non-dev, and non-prerelease versions. So released versions will have 2 points for this value. E.g. (1, 3, 6, 6, 2) is a release, (1, 3, 6, 6, 1) is a prerelease, (1, 3, 6, 6, 0) is a dev release, and (1, 3, 6, 6, 3) is a postrelease. (0, 3, 7, 3, 2) represents a non-core python release, e.g. by a repackager of python like Continuum.

property version_tuple: tuple[int, int, int, bool, bool, bool]

Provides a version tuple for using as a dictionary key.

Returns

A tuple describing the python version metadata contained.

class pythonfinder.models.python.VersionMap(**data)

Bases: FinderBaseModel

class Config

Bases: object

allow_mutation = True

arbitrary_types_allowed = True

include_private_attributes = True

validate_assignment = True

add_entry(entry)

Return type

None

merge(target)

Return type

None

versions: DefaultDict[Tuple[int, Optional[int], Optional[int], bool, bool, bool], List[PathEntry]]

pythonfinder.models.windows module

2.2 Submodules

2.2.1 pythonfinder.cli module

2.2.2 pythonfinder.environment module

pythonfinder.environment.SUBPROCESS_TIMEOUT = 5

The default subprocess timeout for determining python versions

Set to 5 by default.

`pythonfinder.environment.is_type_checking()`

`pythonfinder.environment.possibly_convert_to_windows_style_path(path)`

`pythonfinder.environment.set_asdf_paths()`

`pythonfinder.environment.set_pyenv_paths()`

2.2.3 pythonfinder.exceptions module

exception `pythonfinder.exceptions.InvalidPythonVersion`

Bases: `Exception`

Raised when parsing an invalid python version

2.2.4 pythonfinder.pythonfinder module

class `pythonfinder.pythonfinder.Finder(**data)`

Bases: `FinderBaseModel`

`create_system_path()`

Return type

`SystemPath`

`find_all_python_versions(major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None)`

Return type

`list[PathEntry]`

`find_python_version(major=None, minor=None, patch=None, pre=None, dev=None, arch=None, name=None, sort_by_path=False)`

Find the python version which corresponds most closely to the version requested.

Parameters

- **major** (`str` | `int` | `None`) – The major version to look for, or the full version, or the name of the target version.
- **minor** (`int` | `None`) – The minor version. If provided, disables string-based lookups from the major version field.
- **patch** (`int` | `None`) – The patch version.
- **pre** (`bool` | `None`) – If provided, specifies whether to search pre-releases.
- **dev** (`bool` | `None`) – If provided, whether to search dev-releases.
- **arch** (`str` | `None`) – If provided, which architecture to search.
- **name** (`str` | `None`) – Name of the target python, e.g. `anaconda3-5.3.0`
- **sort_by_path** (`bool`) – Whether to sort by path – default sort is by version(default: `False`)

Return type

`PathEntry` | `None`

Returns

A new `PathEntry` pointer at a matching python version, if one can be located.

global_search: bool

ignore_unsupported: bool

classmethod parse_major(*major, minor=None, patch=None, pre=None, dev=None, arch=None*)

Return type

dict[str, Any]

path_prepend: Optional[str]

sort_by_path: bool

system: bool

system_path: Optional[SystemPath]

which(*exe*)

Return type

PathEntry | None

2.2.5 pythonfinder.utils module

pythonfinder.utils.**dedup**(*iterable*)

Deduplicate an iterable object like iter(set(iterable)) but order-reserved.

Return type

Iterable

pythonfinder.utils.**ensure_path**(*path*)

Given a path (either a string or a Path object), expand variables and return a Path object.

Parameters

path (str or Path) – A string or a Path object.

Return type

Path

Returns

A fully expanded Path object.

pythonfinder.utils.**expand_paths**(*path, only_python=True*)

Recursively expand a list or PathEntry instance

Parameters

- **path** (*Union[Sequence, PathEntry]*) – The path or list of paths to expand
- **only_python** (*bool*) – Whether to filter to include only python paths, default True

Return type

Iterator

Returns

An iterator over the expanded set of path entries

`pythonfinder.utils.filter_pythons(path)`

Return all valid pythons in a given path

Return type

Iterable | Path

`pythonfinder.utils.get_python_version(path)`

Get python version string using subprocess from a given path.

Return type

str

`pythonfinder.utils.guess_company(path)`

Given a path to python, guess the company who created it

Parameters

path (str) – The path to guess about

Return type

str | None

Returns

The guessed company

`pythonfinder.utils.is_in_path(path, parent)`

`pythonfinder.utils.looks_like_python(name)`

Determine whether the supplied filename looks like a possible name of python.

Parameters

name (str) – The name of the provided file.

Return type

bool

Returns

Whether the provided name looks like python.

`pythonfinder.utils.normalize_path(path)`

Return type

str

`pythonfinder.utils.parse_asdf_version_order(filename='.tool-versions')`

`pythonfinder.utils.parse_pyenv_version_order(filename='version')`

`pythonfinder.utils.parse_python_version(version_str)`

Return type

dict[str, str | int | Version]

`pythonfinder.utils.path_is_executable(path)`

Determine whether the supplied path is executable.

Return type

bool

Returns

Whether the provided path is executable.

`pythonfinder.utils.path_is_known_executable(path)`

Returns whether a given path is a known executable from known executable extensions or has the executable bit toggled.

Parameters

path (`Path`) – The path to the target executable.

Return type

`bool`

Returns

True if the path has `chmod +x`, or is a readable, known executable extension.

`pythonfinder.utils.path_is_python(path)`

Determine whether the supplied path is executable and looks like a possible path to python.

Parameters

path (`Path`) – The path to an executable.

Return type

`bool`

Returns

Whether the provided path is an executable path to python.

`pythonfinder.utils.path_is_pythoncore(path)`

Given a path, determine whether it appears to be pythoncore.

Does not verify whether the path is in fact a path to python, but simply does an exclusionary check on the possible known python implementations to see if their names are present in the path (fairly dumb check).

Parameters

path (`str`) – The path to check

Return type

`bool`

Returns

Whether that path is a PythonCore path or not

`pythonfinder.utils.split_version_and_name(major=None, minor=None, patch=None, name=None)`

Return type

`tuple[str | int | None, str | int | None, str | int | None, str | None]`

`pythonfinder.utils.unnest(item)`

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