
Watson - Common

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Useful common utility functions and classes for working with lists, dictionaries, importlib and xml.

CHAPTER 1

Build Status

build passing coverage 99%

CHAPTER 2

Installation

```
pip install watson-common
```


CHAPTER 3

Testing

Watson can be tested with `pytest`. Simply activate your virtualenv and run `python setup.py test`.

CHAPTER 4

Contributing

If you would like to contribute to Watson, please feel free to issue a pull request via Github with the associated tests for your code. Your name will be added to the AUTHORS file under contributors.

5.1 Reference Library

5.1.1 `watson.common.contextmanagers`

5.1.2 `watson.common.datastructures`

class `watson.common.datastructures.ImmutableDict` (*args)

Creates an immutable dict.

While not truly immutable (`_mutable` can be changed), it works effectively in the same fashion.

`__init__` (*args)

class `watson.common.datastructures.ImmutableMultiDict` (*args)

Creates an immutable MultiDict.

`__init__` (*args)

class `watson.common.datastructures.MultiDict` (args=None)

A dictionary type that can contain multiple items for a single key.

Dictionary type that will create a list of values if more than one item is set for that particular key.

Example:

```
multi_dict = MultiDict()
multi_dict['one'] = 1
multi_dict['one'] = 'itchi'
print(multi_dict) # {'one': [1, 'itchi']}
```

`__init__` (args=None)

set (key, value, replace=False)

Add a new item to the dictionary.

Set the key to value on the dictionary, converting the existing value to a list if it is a string, otherwise append the value.

Parameters

- **key** (*string*) – The key used to the store the value.
- **value** (*mixed*) – The value to store.
- **replace** (*bool*) – Whether or not the value should be replaced.

Example:

```
multi_dict = MultiDict()
multi_dict.set('item', 'value') # or multi_dict['item'] = 'value'
```

`watson.common.datastructures.dict_deep_update(d1, d2)`

Recursively merge two dictionaries.

Merges two dictionaries together rather than a shallow update().

Parameters

- **d1** (*dict*) – The original dict.
- **d2** (*dict*) – The dict to merge with d1.

Returns A new dict containing the merged dicts.

Return type dict

`watson.common.datastructures.merge_dicts(*dicts)`

Merges multiple dictionaries and returns a single new dict.

Unlike dict.update this will create a new dict.

Parameters **dicts** (*list*) – The dicts that are being merged

Returns A new dict containing the merged dicts

Return type dict

`watson.common.datastructures.module_to_dict(module, ignore_starts_with=)`

Load the contents of a module into a dict.

Parameters **ignore_starts_with** (*string*) – Ignore all module keys that begin with this value.

Returns The contents of the module as a dict

Return type dict

Example:

```
# my_module.py contents:
# variable = 'value'
import my_module
a_dict = module_to_dict(my_module)
a_dict['variable']
```

5.1.3 watson.common.decorators

class `watson.common.decorators.cached_property` (*func*)

Allows expensive property calls to be cached.

Once the property is called, it's result is stored in the corresponding property name prefixed with an underscore.

Example:

```
class MyClass(object):
    @cached_property
    def expensive_call(self):
        # do something expensive

klass = MyClass()
klass.expensive_call # initial call is made
klass.expensive_call # return value is retrieved from an internal cache
del klass._expensive_call
```

`__init__` (*func*)

`watson.common.decorators.instance_set` (*ignore=None*)

Allows initial binding of arguments to an `__init__` method.

Example:

```
class MyClass(object):
    value = None

    @instance_set
    def __init__(self, value="Instance variable declaration"):
        pass

klass = MyClass()
klass.value # Bound Value
```

5.1.4 `watson.common.imports`

`watson.common.imports.get_qualified_name` (*obj*)

Retrieve the full module path of an object.

Example:

```
from watson.http.messages import Request
request = Request()
name = get_qualified_name(request) # watson.http.messages.Request
```

`watson.common.imports.load_definition_from_string` (*qualified_module, cache=True*)

Load a definition based on a fully qualified string.

Returns None or the loaded object

Example:

```
definition = load_definition_from_string('watson.http.messages.Request')
request = definition()
```


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