defaultdict — Missing Keys Return a Default Value

The standard dictionary includes the method `setdefault()` for retrieving a value and establishing a default if the value does not exist. By contrast, `defaultdict` lets the caller specify the default up front when the container is initialized.

```
# collections_defaultdict.py

import collections


def default_factory():
    return 'default value'


d = collections.defaultdict(default_factory, foo='bar')
print('d:', d)
print('foo =>', d['foo'])
print('bar =>', d['bar'])
```

This method works well as long as it is appropriate for all keys to have the same default. It can be especially useful if the default is a type used for aggregating or accumulating values, such as a `list`, `set`, or even `int`. The standard library documentation includes several examples in which `defaultdict` is used in this way.

```
$ python3 collections_defaultdict.py

d: defaultdict(<function default_factory at 0x101341950>,
{'foo': 'bar'})
foo => bar
bar => default value
```

See also

- defaultdict examples – Examples of using `defaultdict` from the standard library documentation.
- Evolution of Default Dictionaries in Python – James Tauber’s discussion of how `defaultdict` relates to other means of initializing dictionaries.

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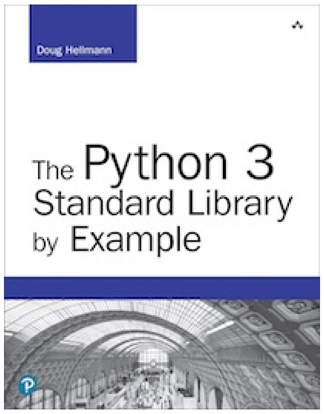

The output from all the example programs from PyMOTW-3 has been generated with Python 3.7.1, unless otherwise noted. Some of the features described here may not be available in earlier versions of Python.

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