Dictdiffer Documentation

Release 0.4.0

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Dictdiffer is a helper module that helps you to diff and patch dictionaries.
Dictdiffer is on PyPI so all you need is:

$ pip install dictdiffer
Let’s start with an example on how to find the diff between two dictionaries using diff() method:

```python
from dictdiffer import diff, patch, swap, revert

first = {
    "title": "hello",
    "fork_count": 20,
    "stargazers": ["/users/20", "/users/30"],
    "settings": {
        "assignees": [100, 101, 201],
    }
}

second = {
    "title": "hellooo",
    "fork_count": 20,
    "stargazers": ["/users/20", "/users/30", "/users/40"],
    "settings": {
        "assignees": [100, 101, 202],
    }
}

result = diff(first, second)

assert list(result) == [
    ("change", ["settings", "assignees", 2], (201, 202)),
    ("add", "stargazers", [(2, "/users/40")]),
    ("change", "title", ("hello", "hellooo"))
]
```

Now we can apply the diff result with patch() method:

```python
result = diff(first, second)
patched = patch(result, first)

assert patched == second
```

Also we can swap the diff result with swap() method:

```python
result = diff(first, second)
swapped = swap(result)

assert list(swapped) == [
    ("change", ["settings", "assignees", 2], (202, 201)),
]```
Let’s revert the last changes:

```python
result = diff(first, second)
reverted = revert(result, patched)
assert reverted == first
```
Dictdiffer is a helper module to diff and patch dictionaries.

**dictdiffer.diff** *(first, second, node=None, ignore=None)*

Compare two dictionary object, and returns a diff result.

Return iterator with differences between two dictionaries.

```python
>>> result = diff({'a':'b'}, {'a':'c'})
>>> list(result)
[('change', 'a', ('b', 'c'))]
```

**Parameters**

- **first** – original dictionary, list or set
- **second** – new dictionary, list or set
- **node** – key for comparison that can be used in `dot_lookup()`
- **ignore** – list of keys that should not be checked

Changed in version 0.3: Added `ignore` parameter.

Changed in version 0.4: Arguments `first` and `second` can now contain a set.

**dictdiffer.patch** *(diff_result, destination)*

Patch the diff result to the old dictionary.

**dictdiffer.swap** *(diff_result)*

Swap the diff result.

It uses following mapping:

- `remove` -> `add`
- `add` -> `remove`

In addition, swap the changed values for `change` flag.

```python
>>> swapped = swap([(‘add’, ’a.b.c’, (’a’, ’b’))])
>>> next(swapped)
(’remove’, ’a.b.c’, (’a’, ’b’))

>>> swapped = swap([(‘change’, ’a.b.c’, (’a’, ’b’))])
>>> next(swapped)
(’change’, ’a.b.c’, (’b’, ’a’))
```
dictdiffer.revert(diff_result, destination)
Call swap function to revert patched dictionary object.

Usage example:
```python
>>> first = {'a': 'b'}
>>> second = {'a': 'c'}
>>> revert(diff(first, second), second)
{'a': 'b'}
```

dictdiffer.dot_lookup(source, lookup, parent=False)
Allow you to reach dictionary items with string or list lookup.
Recursively find value by lookup key split by '.'.

```python
>>> dot_lookup({‘a’: {‘b’: ‘hello’}}, ‘a.b’) ‘hello’
```

If parent argument is True, returns the parent node of matched object.
```python
>>> dot_lookup({‘a’: {‘b’: ‘hello’}}, ‘a.b’, parent=True) {‘b’: ‘hello’}
```

If node is empty value, returns the whole dictionary object.
```python
>>> dot_lookup({‘a’: {‘b’: ‘hello’}}, '') {‘a’: {‘b’: ‘hello’}}
```
Version 0.4.0 (released 2015-03-11)
  • Adds support for diffing and patching of sets. (#44)
  • New tests for diff on the same lists. (#48)
  • Fix for exception when dict has unicode keys and ignore parameter is provided. (#50)
  • PEP8 improvements.
Version 0.3.0 (released 2014-11-05):
  • Adds ignore argument to diff function that allows skipping check on specified keys. (#34 #35)
  • Fix for diffing of dict or list subclasses. (#37)
  • Better instance checking of diffing objects. (#39)
Version 0.2.0 (released 2014-09-29):
  • Fix for empty list instructions. (#30)
  • Regression test for empty list instructions.
Version 0.1.0 (released 2014-09-01):
  • Fix for list removal issues during patching caused by wrong iteration. (#10)
  • Fix for issues with multiple value types for the same key. (#10)
  • Fix for issues with strings handled as iterables. (#6)
  • Fix for integer keys. (#12)
  • Regression test for complex dictionaries. (#4)
  • Better testing with Travis CI, tox, pytest, code coverage. (#10)
  • Initial release of documentation on ReadTheDocs. (#21 #24)
  • Support for Python 3. (#15)
Version 0.0.4 (released 2014-01-04):
  • List diff behavior treats lists as lists instead of sets. (#3)
  • Differed typed objects are flagged as changed now.
  • Swap function refactored.
Version 0.0.3 (released 2013-05-26):
• Initial public release on PyPI.
Contributing

Bug reports, feature requests, and other contributions are welcome. If you find a demonstrable problem that is caused by the code of this library, please:

1. Search for already reported problems.

2. Check if the issue has been fixed or is still reproducible on the latest master branch.

3. Create an issue with a test case.

If you create a feature branch, you can run the tests to ensure everything is operating correctly:

```
$ ./run-tests.sh
...
```

<table>
<thead>
<tr>
<th>Name</th>
<th>Stmts</th>
<th>Miss</th>
<th>Cover</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>dictdiffer/<strong>init</strong></td>
<td>88</td>
<td>0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>dictdiffer/version</td>
<td>2</td>
<td>0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>90</td>
<td>0</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

```
52 passed, 2 skipped in 0.44 seconds
```
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