
soonerdb Documentation

Release 0.1.2

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SOONERDB

A LSM-Tree key/value database in Python.

- Free software: MIT license
- Documentation: <https://soonerdb.readthedocs.io>.

This project started as a learning tool when studying the excellent book “Designing data-intensive applications” by Martin Kleppmann.

Note: This is a toy project and is not yet tested on production environments. Use at your own risk.

1.1 Features

- Pure Python fast LSM-Tree based key/value database.
- Embedded and zero-conf.
- Support in-order traversal of all stored keys.
- On-disk database persistence.
- Data is durable in the face of application or power failure.
- Background merge of segment files.
- **Python 3.6+.**

1.2 TODO List

- [] Deletion of keys.

1.3 Installation

You can install using pip:

```
pip install soonerdb
```

Or from source:

```
git clone https://github.com/fgmacedo/soonerdb
cd soonerdb
python setup.py install
```

1.4 Quick intro

SoonerDB has a dict-like API.

Showtime:

```
In [1]: from soonerdb import SoonerDB

In [2]: db = SoonerDB('./tmp')

In [3]: db["my key"] = "A value"

In [4]: db["my key"]
Out[4]: 'A value'

In [5]: "my key" in db
Out[5]: True

In [6]: "other key" in db
Out[6]: False

In [7]: db["other key"]
-----
KeyError                                Traceback (most recent call last)
<ipython-input-7-bc114493f395> in <module>
----> 1 db["other key"]
KeyError: "Key 'other key' not found."

In [8]: db.get("other key", "default value")
Out[8]: 'default value'

In [9]: db.set("another", "value")

In [10]: list(db)
Out[10]: [('another', 'value'), ('my key', 'A value')]
```

INSTALLATION

2.1 Stable release

To install soonerdb, run this command in your terminal:

```
$ pip install soonerdb
```

This is the preferred method to install soonerdb, as it will always install the most recent stable release.

If you don't have `pip` installed, this [Python installation guide](#) can guide you through the process.

2.2 From sources

The sources for soonerdb can be downloaded from the [Github repo](#).

You can either clone the public repository:

```
$ git clone git://github.com/fgmacedo/soonerdb
```

Or download the [tarball](#):

```
$ curl -OJL https://github.com/fgmacedo/soonerdb/tarball/master
```

Once you have a copy of the source, you can install it with:

```
$ python setup.py install
```


USAGE

To use soonerdb in a project:

```
import soonerdb
```


CONTRIBUTING

Contributions are welcome, and they are greatly appreciated! Every little bit helps, and credit will always be given. You can contribute in many ways:

4.1 Types of Contributions

4.1.1 Report Bugs

Report bugs at <https://github.com/fgmacedo/soonerdb/issues>.

If you are reporting a bug, please include:

- Your operating system name and version.
- Any details about your local setup that might be helpful in troubleshooting.
- Detailed steps to reproduce the bug.

4.1.2 Fix Bugs

Look through the GitHub issues for bugs. Anything tagged with “bug” and “help wanted” is open to whoever wants to implement it.

4.1.3 Implement Features

Look through the GitHub issues for features. Anything tagged with “enhancement” and “help wanted” is open to whoever wants to implement it.

4.1.4 Write Documentation

soonerdb could always use more documentation, whether as part of the official soonerdb docs, in docstrings, or even on the web in blog posts, articles, and such.

4.1.5 Submit Feedback

The best way to send feedback is to file an issue at <https://github.com/fgmacedo/soonerdb/issues>.

If you are proposing a feature:

- Explain in detail how it would work.
- Keep the scope as narrow as possible, to make it easier to implement.
- Remember that this is a volunteer-driven project, and that contributions are welcome :)

4.2 Get Started!

Ready to contribute? Here's how to set up *soonerdb* for local development.

1. Fork the *soonerdb* repo on GitHub.
2. Clone your fork locally:

```
$ git clone git@github.com:your_name_here/soonerdb.git
```

3. Install your local copy into a virtualenv. Assuming you have virtualenvwrapper installed, this is how you set up your fork for local development:

```
$ mkvirtualenv soonerdb
$ cd soonerdb/
$ python setup.py develop
```

4. Create a branch for local development:

```
$ git checkout -b name-of-your-bugfix-or-feature
```

Now you can make your changes locally.

5. When you're done making changes, check that your changes pass flake8 and the tests, including testing other Python versions with tox:

```
$ flake8 soonerdb tests
$ python setup.py test or pytest
$ tox
```

To get flake8 and tox, just pip install them into your virtualenv.

6. Commit your changes and push your branch to GitHub:

```
$ git add .
$ git commit -m "Your detailed description of your changes."
$ git push origin name-of-your-bugfix-or-feature
```

7. Submit a pull request through the GitHub website.

4.3 Pull Request Guidelines

Before you submit a pull request, check that it meets these guidelines:

1. The pull request should include tests.
2. If the pull request adds functionality, the docs should be updated. Put your new functionality into a function with a docstring, and add the feature to the list in README.rst.
3. The pull request should work for Python 3.5, 3.6, 3.7 and 3.8, and for PyPy. Check https://travis-ci.com/fgmacedo/soonerdb/pull_requests and make sure that the tests pass for all supported Python versions.

4.4 Tips

To run a subset of tests:

```
$ pytest tests.test_soonerdb
```

4.5 Deploying

A reminder for the maintainers on how to deploy. Make sure all your changes are committed (including an entry in HISTORY.rst). Then run:

```
$ bump2version patch # possible: major / minor / patch
$ git push
$ git push --tags
```

Travis will then deploy to PyPI if tests pass.

CREDITS

5.1 Development Lead

- Fernando Macedo <fgmacedo@gmail.com>

5.2 Contributors

None yet. Why not be the first?

5.3 Credits

This package was created with [Cookiecutter](#) and the [audreyr/cookiecutter-pypackage](#) project template.

HISTORY

6.1 0.1.2 (2020-12-18)

- Background merge of segment files.
- Adding coverage badge on README.

6.2 0.1.1 (2020-12-18)

- Fixes setup.py.
- Improved README.

6.3 0.1.0 (2020-12-18)

- First release on PyPI.

INDICES AND TABLES

- `genindex`
- `modindex`
- `search`