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# MishMash Documentation

*Release 0.3b9*

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Contents:



Music database and web interface.

## 1.1 Features

- MishMash is a music database using [Python](#) and [SQLAlchemy](#).
- A command-line tool for building and managing a music database.
- Web browser interface (using [Pyramid](#)) for browsing your music library.
- Uses [eyeD3](#) for reading MP3s and ID3 metadata.
- Support and tested with Python 3.6 and Postgresql. SQLite is periodically tested with, but future features may not be supported (e.g. full text search).
- Free software: GNU GPL v3.0 license

## 1.2 Getting Started

[illegible]

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```
Last sync          : Never
Configuration files : <default>

=== Music library ===
0 music tracks
0 music artists
0 music albums
0 music tags
```

Surprise, you now have an empty sqlite database in your home directory. Let's leave it here for now, it can be located elsewhere or use a different database using command line arguments and/or environment variables. Pretty useless, so now add some music.:

```
$ mishmash sync ~/Music/Melvins
Syncing library 'Music': paths=['~/Music/Melvins/']
Syncing directory: ~/Music/Melvins/
Syncing directory: ~/Music/Melvins/1984 - Mangled Demos
Adding artist: Melvins
Syncing directory: ~/Music/Melvins/1986 - 10 Songs
Adding album: 10 Songs
Adding track: ~/Music/Melvins/1986 - 10 Songs/Melvins - 01 - Easy As It Was.mp3
Updating album: 10 Songs
...
== Library 'Music' sync'd [ 8.73s time (45.9 files/s) ] ==
401 files sync'd
401 tracks added
0 tracks modified
0 orphaned tracks deleted
0 orphaned artists deleted
0 orphaned albums deleted
```

Use your database as you wish. Browse it with *mishmash web*, or use one of its management commands.

Check out the [Unsonic](#) project for streaming capabilities.



### 2.1 Using pip

At the command line:

```
$ pip install mishmash
$ pip install mishmash[postgres]
$ pip install mishmash[web]
```

Or, if you have virtualenvwrapper installed:

```
$ mkvirtualenv MishMash
$ pip install mishmash
```

### 2.2 Using a source distribution

At the command line:

```
$ tar xzf mishmash-0.3b9.tar.gz
$ cd mishmash-0.3b9
$ python setup.py install
```

### 2.3 From GitHub

At the command line:

```
$ git clone https://github.com/nicfit/MishMash
$ cd mishmash
$ python setup.py install
```

Additional dependencies should be installed if developing MishMash:

```
$ pip install -r requirements/dev.txt
```

## 2.4 Dependencies

All the required software dependencies are installed using either `requirements/default.txt` files or by `python install setup.py`.

## 3.1 Configuration

MishMash ships with a default configuration that should work out of the box with no extra additional settings by using a SQLite database saved in `${HOME}/mishmash.db`. Running `mishmash info` will demonstrate this, afterwards `mishmash.db` will exist in your home directory and be initialized with the database schema.

```
$ mishmash info
$ sqlite3 /home/travis/mishmash.db
sqlite> select * from artists;
1|Various Artists|Various Artists|2014-10-11 01:12:10.246406|||
sqlite>
```

To see the current configuration use `info` command's `--default-config` option. You may wish to capture this output for writing custom configuration files.

```
$ mishmash --default-config
[mishmash]
sqlalchemy.url = sqlite:///home/travis/mishmash.db

[loggers]
keys = root, sqlalchemy, eyed3, mishmash

[handlers]
keys = console

[formatters]
keys = generic

[logger_root]
level = INFO
handlers = console

... more config ...
```

The first change most users will want to do is change the database that MishMash uses. The `-D/--database` option make this easy. In this example, information about `./mymusic.db` SQLite database and the `mymusic` PostgreSQL database is displayed.

```
$ mishmach --database=sqlite:///mymusic.db info
$ mishmach -D postgresql://mishmach@localhost:5432/mymusic info
```

In you wish to make additional configuration changes, or would like to avoid needing to type the database URL all the time, a configuration is needed. The file may contain the entire configuration or only the values you wish to change (i.e. changes are applied to the default configuration). With the settings saved to a file use the `-c/--config` option to have MishMash use it. In this examples the database URL and a logging level are modified.

```
$ cat example.ini
[mishmach]
sqlalchemy.url = postgresql://mishmach@localhost:5432/mymusic

[logger_sqlalchemy]
level = DEBUG

$ mishmach -c example.ini info
```

You can avoid typing `-c/--config` option by setting the file name in the `MISHMASH_CONFIG` environment variable.

```
$ export MISHMASH_CONFIG=/etc/mishmach.ini
```

None of the options for controlling configuration are mutually exclusive, complex setups can be made by combining them. The order of precedence is show below:

```
Default <-- -c/--config <-- MISHMASH_CONFIG <-- -D/--database
```

Items to the left are lower precedence and the direction arrows (`<--`) show the order in which the options are merged. For example, local machine changes (`local.ini`) could be merged with the global site configuration (`site.ini`) and the PostgreSQL server at `dbserver.example.com` is used regardless then the other files set.

```
$ MISHMASH_CONFIG=local.ini mishmach -c site.ini -D postgresql://dbserver.example.
  ↪com:5432/music
```

## 3.2 Databases

The first requirement is deciding a database for MishMash to use. One of the great things about SQLAlchemy is its support for a multitude of databases, feel free to try whichever you would like but that the only back-ends that are currently tested/supported are:

```
* Postgresql
* SQLite; limited testing.
```

The default value uses a SQLite database called `'mishmach.db'` in the user's home directory.:

```
sqlite:///${HOME}/mishmach.db
```

The URL in this example specifies the type of database (i.e. SQLite) and the filename of the DB file. The following sections provide more URL examples for Postgresql (where authentication credentials are required) and SQLite but see the full documentation for [SQLAlchemy database URLs](#) for a complete reference.

### 3.2.1 Postgresql

The pattern for Postgresql URLs is:

```
postgresql://user:passwd@host:port/db_name
```

`user` and `passwd` are the login credentials for accessing the database, while `host` and `port` (the default is 5432) determine where to connect. Lastly, the specific name of the database that contains the MishMash data is given by `db_name`. A specific example:

```
postgresql://mishmash:mishmash@localhost/mishmash_test
```

Setup of initial database and roles::

```
$ createuser --createdb mishmash
$ createdb -E utf8 -U mishmash mishmash
```

### 3.2.2 SQLite

The pattern for SQLite URLs is:

```
sqlite://filename
```

The slashes can be a little odd, so some examples:

```
sqlite:///relative/path/to/filename.db
sqlite:///absolute/path/to/filename.db
sqlite:///memory:
```

The last example specifies an in-memory database that only exists as long as the application using it.

## 3.3 mishmash info

The `info` command displays details about the current settings and database. TODO

## 3.4 mishmash sync

The `sync` command imports music metadata into the database. TODO

## 3.5 mishmash web

The `web` command runs the web interface. TODO

## 3.6 mishmash merge-artists

TODO

## 3.7 mishmash split-artists

Since MishMash tries not to make assumption about directory structure there may be times when multiple artists with the same name are merged. The *split-artists* command can use to fix this.:

```
$ mishmash split-artists -L Music "The Giraffes"
```

The city of origin is used to distinguish between each of the artists and then albums are assigned to each.:

```
4 albums by The Giraffes:
  2005      The Giraffes
  2005      Haunted Heaven EP
  2008      Prime Motivator
  2000      The Days Are Filled With Years

Enter the number of distinct artists: 2

The Giraffes #1
  City: Brooklyn
  State: NY
  Country: US

The Giraffes #2
  City: Seattle
  State: WA
  Country: USA

Assign albums to the correct artist.
Enter 1 for The Giraffes from Brooklyn, NY, USA
Enter 2 for The Giraffes from Seattle, WA, USA

The Giraffes (Giraffes, The (Brooklyn)/2005 - The Giraffes): 1
Haunted Heaven EP (Giraffes, The (Brooklyn)/2005 - Haunted Heaven EP): 1
Prime Motivator (Giraffes, The (Brooklyn)/2008 - Prime Motivator): 1
The Days Are Filled With Years (Giraffes, The (Seattle)/2000 - The Days Are Filled_
↵With Years): 2
```

## 4.1 mishmash package

### 4.1.1 Subpackages

mishmash.commands package

Submodules

mishmash.commands.command module

mishmash.commands.info module

```
class mishmash.commands.info.DisplayList
```

```
    Bases: object
```

```
    add (key, val)
```

```
    clear ()
```

```
    print (_format, clear=False, **kwargs)
```

```
class mishmash.commands.info.Info (subparsers=None, **kwargs)
```

```
    Bases: mishmash.core.Command
```

Construct a command. Any *kwargs* are added to the class object using *setattr*. All commands have an *ArgumentParser*, either constructed here or when *subparsers* is given a new parser is created using its *add\_parser* method.

```
HELP = 'Show information about the database and configuration.'
```

```
NAME = 'info'
```

```
lib_query (OrgType, lib)
```

## mishmash.commands.mgmt module

**class** mishmash.commands.mgmt.**MergeArtists** (*subparsers=None*, *\*\*kwargs*)

Bases: *mishmash.core.Command*

Construct a command. Any *kwargs* are added to the class object using `setattr`. All commands have an `ArgumentParser`, either constructed here or when *subparsers* is given a new parser is created using its `add_parser` method.

**HELP** = 'Merge two or more artists into a single artist.'

**NAME** = 'merge-artists'

**class** mishmash.commands.mgmt.**SplitArtists** (*subparsers=None*, *\*\*kwargs*)

Bases: *mishmash.core.Command*

Construct a command. Any *kwargs* are added to the class object using `setattr`. All commands have an `ArgumentParser`, either constructed here or when *subparsers* is given a new parser is created using its `add_parser` method.

**HELP** = 'Split a single artist name into N distinct artists.'

**NAME** = 'split-artists'

## mishmash.commands.sync module

## mishmash.commands.web module

**class** mishmash.commands.web.**Web** (*subparsers=None*, *\*\*kwargs*)

Bases: *mishmash.core.Command*

Construct a command. Any *kwargs* are added to the class object using `setattr`. All commands have an `ArgumentParser`, either constructed here or when *subparsers* is given a new parser is created using its `add_parser` method.

**HELP** = 'MishMash web interface.'

**NAME** = 'web'

## Module contents

### mishmash.web package

#### Submodules

### mishmash.web.layouts module

**class** mishmash.web.layouts.**AppLayout** (*context*, *request*)

Bases: `object`

**add\_heading** (*name*, *\*args*, *\*\*kw*)

**page\_title**



### mishmash.web.models module

`mishmash.web.models.DBSession = None`  
The type for making sessions.

### mishmash.web.panels module

`mishmash.web.panels.album_cover(context, request, album, size=None, link=False)`  
`mishmash.web.panels.footer(context, request)`  
`mishmash.web.panels.navbar(context, request)`

### mishmash.web.views module

`class mishmash.web.views.ResponseDict(*args, **kwargs)`  
Bases: dict  
`mishmash.web.views.albumView(request)`  
`mishmash.web.views.allAlbumsView(request)`  
`mishmash.web.views.allArtistsView(request)`  
`mishmash.web.views.artistView(request)`  
`mishmash.web.views.covers(request)`  
`mishmash.web.views.home_view(request)`  
`mishmash.web.views.newMusicView(request)`  
`mishmash.web.views.searchView(request)`

### Module contents

`mishmash.web.main(global_config, **main_settings)`

## 4.1.2 Submodules

### 4.1.3 mishmash.config module

`class mishmash.config.Config(filename, **kwargs)`  
Bases: `nicfit.config.Config`  
`db_url`  
`music_libs`  
`class mishmash.config.MusicLibrary(name, paths=None, excludes=None, sync=True)`  
Bases: object  
`static fromConfig(config)`

#### 4.1.4 mishmash.console module

`mishmash.console.promptArtist` (*text*, *name=None*, *default\_name=None*, *default\_city=None*, *default\_state=None*, *default\_country=None*, *artist=None*)

`mishmash.console.selectArtist` (*heading*, *choices=None*, *multiselect=False*, *allow\_create=True*)

#### 4.1.5 mishmash.core module

**class** `mishmash.core.Command` (*subparsers=None*, *\*\*kwargs*)

Bases: `nicfit.command.Command`

Base class for MishMash commands.

Construct a command. Any *kwargs* are added to the class object using `setattr`. All commands have an `ArgumentParser`, either constructed here or when *subparsers* is given a new parser is created using its `add_parser` method.

**run** (*args*, *config*)

**exception** `mishmash.core.CommandError` (*msg*, *exit\_status=1*)

Bases: `Exception`

Base error type for `nicfit.command.Command` errors.

#### 4.1.6 mishmash.database module

**class** `mishmash.database.DatabaseInfo` (*engine*, *SessionMaker*, *connection*)

Bases: `tuple`

Create new instance of `DatabaseInfo(engine, SessionMaker, connection)`

**SessionMaker**

Alias for field number 1

**connection**

Alias for field number 2

**engine**

Alias for field number 0

`mishmash.database.dropAll` (*url*)

`mishmash.database.getTag` (*t*, *session*, *lid*, *add=False*)

`mishmash.database.init` (*db\_url*, *engine\_args=None*, *session\_args=None*, *trans\_mgr=None*, *scoped=False*)

`mishmash.database.search` (*session*, *query*)

#### 4.1.7 mishmash.orm module

Object to relational database mappings for all tables.

**class** `mishmash.orm.Album` (*\*\*kwargs*)

Bases: `sqlalchemy.ext.declarative.api.Base`, `mishmash.orm.OrmObject`

A simple constructor that allows initialization from *kwargs*.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```
DATE_LIMIT = 24
TITLE_LIMIT = 256

artist
artist_id
date_added
duration
getBestDate()
id
images
    one-to-many album images.
lib_id
library
original_release_date
recording_date
release_date
tags
title
tracks
type
```

```
class mishmash.orm.AlbumDate(*args, **kwargs)
    Bases: sqlalchemy.sql.type_api.TypeDecorator
```

Custom column type for eyed3.core.Date objects. That is, dates that can have empty rather than default date fields. For example, 1994 with no month and day is different than 1994-01-01, as datetime provides.

Construct a TypeDecorator.

Arguments sent here are passed to the constructor of the class assigned to the `impl` class level attribute, assuming the `impl` is a callable, and the resulting object is assigned to the `self.impl` instance attribute (thus overriding the class attribute of the same name).

If the class level `impl` is not a callable (the unusual case), it will be assigned to the same instance attribute 'as-is', ignoring those arguments passed to the constructor.

Subclasses can override this to customize the generation of `self.impl` entirely.

```
impl = String(length=24)
```

```
process_bind_param(value, dialect)
```

Receive a bound parameter value to be converted.

Subclasses override this method to return the value that should be passed along to the underlying TypeEngine object, and from there to the DBAPI `execute()` method.

The operation could be anything desired to perform custom behavior, such as transforming or serializing data. This could also be used as a hook for validating logic.

This operation should be designed with the reverse operation in mind, which would be the `process_result_value` method of this class.

#### Parameters

- **value** – Data to operate upon, of any type expected by this method in the subclass. Can be `None`.
- **dialect** – the `Dialect` in use.

#### `process_result_value` (*value, dialect*)

Receive a result-row column value to be converted.

Subclasses should implement this method to operate on data fetched from the database.

Subclasses override this method to return the value that should be passed back to the application, given a value that is already processed by the underlying `TypeEngine` object, originally from the DBAPI cursor method `fetchone()` or similar.

The operation could be anything desired to perform custom behavior, such as transforming or serializing data. This could also be used as a hook for validating logic.

#### Parameters

- **value** – Data to operate upon, of any type expected by this method in the subclass. Can be `None`.
- **dialect** – the `Dialect` in use.

This operation should be designed to be reversible by the “`process_bind_param`” method of this class.

```
class mishmash.orm.Artist (**kwargs)
```

Bases: `sqlalchemy.ext.declarative.api.Base`, `mishmash.orm.OrmObject`

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance’s class are allowed. These could be, for example, any mapped columns or relationships.

**CITY\_LIMIT = 64**

**COUNTRY\_LIMIT = 3**

**NAME\_LIMIT = 256**

**SORT\_NAME\_LIMIT = 258**

**STATE\_LIMIT = 32**

**albums**

all albums by the artist

**static checkUnique** (*artists*)

**date\_added**

**getAlbumsByType** (*album\_type*)

**getTrackSingles** ()

**id**

**images**

one-to-many artist images.

**is\_various\_artist**

```

lib_id
library
name
origin (n=3, country_code='country_name', title_case=True)
origin_city
origin_country
origin_state
sort_name
tags
    one-to-many (artist->tag) and many-to-one (tag->artist)
tracks
    all tracks by the artist
url_name

```

**class** mishmash.orm.Image (\*\*kwargs)

Bases: sqlalchemy.ext.declarative.api.Base, mishmash.orm.OrmObject

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```

ARTIST_TYPE = 'ARTIST'
BACK_COVER_TYPE = 'BACK_COVER'
DESC_LIMIT = 1024
FRONT_COVER_TYPE = 'FRONT_COVER'
IMAGE_TYPES = ['FRONT_COVER', 'BACK_COVER', 'MISC_COVER', 'LOGO', 'ARTIST', 'LIVE']
LIVE_TYPE = 'LIVE'
LOGO_TYPE = 'LOGO'
MD5_LIMIT = 32
MIMETYPE_LIMIT = 32
MISC_COVER_TYPE = 'MISC_COVER'

```

**data**

**description**

The description will be the base file name when the source is a file.

```

static fromFile (path, type_)
static fromTagFrame (img, type_)

```

**id**

**md5**

**mime\_type**

**size**

**type**

**class** mishmash.orm.**Library** (\*\*kwargs)

Bases: sqlalchemy.ext.declarative.api.Base, mishmash.orm.OrmObject

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**NAME\_LIMIT = 64**

**add** (album)

**albums** ()

**id**

**classmethod** **iterall** (session, names=None)

Iterate over all Library rows found in *session*. :param names: Optional sequence of names to filter on.

**last\_sync**

**name**

**class** mishmash.orm.**Meta** (\*\*kwargs)

Bases: sqlalchemy.ext.declarative.api.Base, mishmash.orm.OrmObject

Table *meta* used for storing database schema version, timestamps, and any other metadata about the music collection.

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**VERSION\_LIMIT = 32**

**last\_sync**

A UTC timestamp of the last sync operation.

**version**

The MishMash version defines the database schema.

**class** mishmash.orm.**OrmObject**

Bases: object

Base classes for all other mishmash.orm classes.

mishmash.orm.**TABLES = [Table('meta', MetaData(bind=None), Column('version', String(length=**

All the table instances. Order matters (esp. for postgresql). The tables are created in normal order, and dropped in reverse order.

**class** mishmash.orm.**Tag** (\*\*kwargs)

Bases: sqlalchemy.ext.declarative.api.Base, mishmash.orm.OrmObject

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```
NAME_LIMIT = 64
id
lib_id
library
name

class mishmash.orm.Track(**kwargs)
    Bases: sqlalchemy.ext.declarative.api.Base, mishmash.orm.OrmObject
    Along with the column args a audio_file keyword may be passed for this class to use for initialization.
    METADATA_FORMATS = ['ID3v1.0', 'ID3v1.1', 'ID3v2.2', 'ID3v2.3', 'ID3v2.4']
    PATH_LIMIT = 2048
    TITLE_LIMIT = 256
    album
    album_id
    artist
    artist_id
    bit_rate
    ctime
    date_added
    id
    lib_id
    library
    media_num
    media_total
    metadata_format
    mtime
    path
    size_bytes
    tags
    time_secs
    title
    track_num
    track_total
    update(audio_file)
    variable_bit_rate

mishmash.orm.album_images = Table('album_images', MetaData(bind=None), Column('album_id', Integer, primary_key=True), Column('image_id', Integer, primary_key=True), Column('image_data', Binary(2048)), Column('image_size', Integer), Column('image_mtime', Integer), Column('image_ctime', Integer), Column('image_path', String(2048)), Column('image_size_bytes', Integer), Column('image_tags', String(256)), Column('image_time_secs', Integer), Column('image_title', String(256)), Column('image_track_num', Integer), Column('image_track_total', Integer), Column('image_update', String(256)), Column('image_variable_bit_rate', Integer))
    Pivot table 'album_images' for mapping an album ID to a value in the images table.
```

```
mishmash.orm.album_tags = Table('album_tags', MetaData(bind=None), Column('album_id', Integer))
    Pivot table 'album_tags' for mapping an album ID to a value in the tags table.

mishmash.orm.artist_images = Table('artist_images', MetaData(bind=None), Column('artist_id', Integer))
    Pivot table 'artist_images' for mapping an artist ID to a value in the images table.

mishmash.orm.artist_tags = Table('artist_tags', MetaData(bind=None), Column('artist_id', Integer))
    Pivot table 'artist_tags' for mapping an artist ID to a value in the tags table.

mishmash.orm.getSortName(name)

mishmash.orm.set_sqlite_pragma(dbapi_connection, connection_record)
    Allows foreign keys to work in sqlite.

mishmash.orm.track_tags = Table('track_tags', MetaData(bind=None), Column('track_id', Integer))
    Pivot table 'track_tags' for mapping a track ID to a value in the tags table.
```

### 4.1.8 mishmash.util module

```
mishmash.util.commonDirectoryPrefix(*args)

mishmash.util.mostCommonItem(lst)
    Choose the most common item from the list, or the first item if all items are unique.

mishmash.util.normalizeCountry(country_str, target='iso3c', title_case=False)
    Return a normalized name/code for country in country_str. The input can be a code or name, the target
    determines output value. 3 character ISO code is the default (iso3c), 'country_name', and 'iso2c' are common
    also. See countrycode.countrycode for details and other options. Raises ValueError if the country
    is unrecognized.

mishmash.util.safeDbUrl(db_url)
    Obfuscates password from a database URL.

mishmash.util.sortByDate(things, prefer_recording_date=False)

mishmash.util.splitNameByPrefix(s)
```

### 4.1.9 Module contents

```
mishmash.getLogger(name=None)
```



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

## 5.1 Types of Contributions

### 5.1.1 Report Bugs

Report bugs at <https://github.com/nicfit/MishMash/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.

### 5.1.2 Fix Bugs

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

### 5.1.3 Implement Features

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

### 5.1.4 Write Documentation

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

### 5.1.5 Submit Feedback

The best way to send feedback is to file an issue at <https://github.com/nicfit/MishMash/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 :)

## 5.2 Get Started!

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

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

```
$ git clone git@github.com:your_name_here/MishMash.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 mishmash
$ cd mishmash/
$ 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:

```
$ make lint
$ make test
$ make test-all      # Optional, requires multiple versions of Python
```

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.

## 5.3 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 2.7, and 3.3, 3.4, 3.5, and for PyPy. Check <https://travis-ci.org/nicfit/MishMash/pulls> and make sure that the tests pass for all supported Python versions.



## CHAPTER 6

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### Authors

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### 7.1 v0.3b9 (2018-12-02)

#### 7.1.1 New

- Split-artist docs.
- *mishmash web* albums view.
- *mishmash web* artist filters.

#### 7.1.2 Fix

- Database URL obfuscation is more reliable.

### 7.2 v0.3b8 (2018-11-28)

#### 7.2.1 New

- Added *MishMash(ConfigClass=clazz)* keyword argument.

### 7.3 v0.3b7 (2018-06-18)

#### 7.3.1 New

- More multi-lib supoort (merge, split, info)

### 7.3.2 Fix

- Return resolved album when a sync does not occur.
- Recent inotify uses Unicode natively, remove conversions to bytes.
- Pick up new image files when rescanning and no audio files changed.

### 7.3.3 Other

- Run make test targets thru tox. Travis-CI will do this in a future commit.

## 7.4 v0.3b6 (2018-02-18)

### 7.4.1 New

- Mishmash info -L/--library and --artists.

### 7.4.2 Changes

- Reduced sync stats precision.
- Nicfit.py 0.8 Command changes.

### 7.4.3 Fix

- Fix container fail to start issue (#242) <me@benschumacher.com>
- Added check for osx to avoid monitor mode (#260) <redshodan@gmail.com>
- Nicfit.py 0.8 config\_env\_var changes.
- Removed no-arg (nicfit.py) main test, test is done upstream.

## 7.5 v0.3b5 (2017-11-26) : I Need a Miracle

### 7.5.1 New

- Mishmash\_cmd session-scoped fixture.
- Library 'excludes' option. Fixes #202.
- orm length limit constants
- More ORM limit tests, truncation, validation.
- Use mishmash.util.safeDbUrl for displayed/logged password obfuscation.
- Add Track.metadata\_format and Track.METADATA\_FORMATS.



### 7.5.2 Changes

- Moved VARIOUS\_TYPE detection info \_albumTypeHint. less noise about lp->various conversion
- Close DB connections after commands.
- Better logging for debugging VARIOUS\_TYPE coercion.
- Moved limit constants to each ORM class.
- Docker updates.

### 7.5.3 Fix

- PServeCommand requires .ini extension.
- Show used config files.
- Some (not all) truncation for column limits and x00 handling.
- Make docker-publish.
- Dup config section error.

## 7.6 v0.3b4 (2017-05-14) : Triumph Of Death

### 7.6.1 New

- Init(scope=False), for wrapped SessionMaker with sqlalchemy.orm.scoped\_session.
- Mishmash.web is optional, and packaged as extra [web] install.
- Mishmash.VARIOUS\_ARTISTS\_NAME == gettext("Various Artists")

### 7.6.2 Changes

- Removed various artist config and started gettext.

### 7.6.3 Fix

- Mishmash.web working again.

### 7.6.4 Other

- Update eyed3 from 0.8.0b1 to 0.8 (#108) <github-bot@pyup.io>
- Pin pyramid to latest version 1.8.3 (#94) <github-bot@pyup.io>

## 7.7 v0.3b3 (2017-04-09) : Prayers for Rain

### 7.7.1 New

- UTC sync times and per lib last\_sync. Fixes #6, #7.
- Db test fixtures, etc.

### 7.7.2 Changes

- mishmash.data.init now returns the 3-tuple (engine, SessionMaker, connection). Previously a 2-tuple, sans connection, was returned. The new mishmash.database.DatabaseInfo namedtuple is the actual return type, if you prefer not to unpack the return value.

## 7.8 v0.3b2 (2017-03-12) : Nine Patriotic Hymns For Children

### 7.8.1 Fix

- Protect against not being the first to call multiprocessing.set\_start\_method.

## 7.9 v0.3b1 (2017-03-12) : Nine Patriotic Hymns For Children

### 7.9.1 New

- Mismash sync –monitor (using inotify)
- Test beginnings.

### 7.9.2 Changes

- Label\_id renamed tag\_id. Fixes #65.
- Mishmash.database.init accepts the DB URL as its first arguments, NO LONGER a Config object.

### 7.9.3 Fix

- Postgres service on Travis-CI.
- Restored gitchange log fork.

## 7.10 v0.3b0 (2017-02-26)

- Initial release

## CHAPTER 8

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