
Fonzie

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edX Inc.

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An FUN API for Open edX

Contents:

Fonzie, a FUN API for Open edX

This project is in early-development phase, we are still experimenting on it. It is intended to be community-driven, so please, do not hesitate to get in touch if you have any question related to our implementation or design decisions.

1.1 Overview

Fonzie is an HTTP API over the [Open edX](#) project. It has been build to open the way to new tools and interfaces in the Open edX ecosystem.

We choose to design the API first and then propose an implementation with Fonzie. The current state of the API schema is available in [API blueprint format](#); it can be used to start developing a front-end application that will consume Fonzie's API (take a look at [API blueprint tools](#)).

1.2 Documentation

The full documentation is at <https://fonzie.readthedocs.org>.

1.3 License

The code in this repository is licensed under the AGPL 3.0 unless otherwise noted.

Please see `LICENSE.txt` for details.

1.4 How To Contribute

Contributions are very welcome.

Even though they were written with `edx-platform` in mind, the guidelines should be followed for Open edX code in general.

PR description template should be automatically applied if you are sending PR from github interface; otherwise you can find it at [PULL_REQUEST_TEMPLATE.md](#)

Issue report template should be automatically applied if you are sending it from github UI as well; otherwise you can find it at [ISSUE_TEMPLATE.md](#)

1.5 Reporting Security Issues

Please do not report security issues in public. Please email security@fun-mooc.fr.

1.6 Getting Help

Have a question about this repository, or about Open edX in general? Please refer to this [list of resources](#) if you need any assistance.

CHAPTER 2

Getting Started

Fonzie is supposed to be installed as a Django application running in an Open edX platform instance. Fonzie has been designed to be integrated with the current Open edX release (Ginkgo at the time of writing). We plan to support the next Open edX release (Hawthorn) in a near future.

2.1 Install dependencies

Install `fonzie` and its dependencies in your Open edX installation with `pip`:

```
$ (sudo) pip install fonzie
```

2.2 Configure Fonzie

Once installed, Fonzie needs to be configured as a standard Django application, *i.e.* adding `fonzie` to your `INSTALLED_APPS` and Fonzie's URLs to your project's URLs.

2.2.1 Open edX settings

Edit the LMS settings of your Open edX instance (*e.g.* `lms/envs/private.py`) by adding `fonzie` to your `INSTALLED_APPS` and configure Django Rest Framework (*_aka_* DRF) API versioning support as follows:

```
# lms/env/private.py
INSTALLED_APPS += (
    'fonzie',
)

# Django Rest Framework (aka DRF)
REST_FRAMEWORK.update({
    'ALLOWED_VERSIONS': ('1.0', ),
```

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```
'DEFAULT_VERSION': '1.0',
'DEFAULT_VERSIONING_CLASS': 'rest_framework.versioning.URLPathVersioning',
})
```

2.2.2 Open edX URLs

Add Fonzie's urls in Open edX LMS's URLs:

```
# lms/fonzie_urls.py
from lms.urls import *

urlpatterns += [
    # [...]
    url(r'^api/', include('fonzie.urls')),
]
```

2.3 Test your installation

Now that we've installed and configured Fonzie, it's time to test that our API is responding! If we consider that installed Open edX LMS is served from `www.mydomain.com` on the port 8080, we can use the `http` tool (see [HTTPie project](#)) to query the API:

```
$ http http://www.mydomain.com:8080/api/v1.0/status/version

# http command output
HTTP/1.0 200 OK
Allow: GET, HEAD, OPTIONS
Content-Language: en
Content-Type: application/json
Date: Mon, 28 May 2018 15:37:02 GMT
Server: WSGIServer/0.1 Python/2.7.12
Vary: Accept, Accept-Language, Cookie
X-Frame-Options: ALLOW

{
    "version": "0.4.0"
}
```

Alternatively, you can use `curl`:

```
$ curl http://www.mydomain.com:8080/api/v1.0/status/version
{"version":"0.4.0"}
```

The output of this command should be a JSON payload containing the running version of Fonzie.

Fonzie’s project has been designed with “container-native development” in mind. In this guide, we will consider that you are familiar with Docker and its ecosystem.

3.1 Pre-requisites for Fonzie contributors

As you might already have expected, we extensively use [Docker](#) (17.12+) and [Docker compose](#) (1.18+) in our development workflow. So, if you intend to work on Fonzie, please, make sure they are both installed and functional before pursuing this guide.

3.2 Getting started with the development stack

First things first, to start contributing on the project, you will need to clone Fonzie’s repository and then build the Docker-based development stack with:

```
# Clone Fonzie's repository
$ git clone git@github.com:openfun/fonzie.git

# Build required containers
$ make bootstrap
```

The `make bootstrap` command will:

- build an `edx-platform` Docker image with Fonzie installed and configured,
- run the development server
- perform Open edx LMS database migrations.

Fonzie’s API should be accessible from: <http://localhost:8072/api/v1.0/>

We invite you to test the `status/version` endpoint to ensure everything went well:

```
$ curl http://www.mydomain.com:8080/api/v1.0/status/version
{"version":"0.4.0"}
```

3.3 Development workflow

If you use to work with Django's development server, you will have the same experience with a Docker-based development stack: Fonzie is installed in edit mode and mounted as a volume in the `lms` service. Combined with the development server, the application will be reloaded when the source code changes.

3.4 Adding dependencies

If your work on Fonzie requires new dependencies, you will need to:

1. Update the `options.install_requires` section of the `setup.cfg` file (or the `options.extras_require.[dev, doc, ...]` section if it's a development dependency),
2. Rebuild the `lms` service image via the `make build` utility.
3. Optionally perform required database migrations via:

```
$ make migrate
```

CHAPTER 4

Testing

fonzie has an assortment of test cases and code quality checks to catch potential problems during development. To run them all in the version of Python you chose for your virtualenv:

```
$ make validate
```

To run just the unit tests:

```
$ make test
```

To run just the unit tests and check diff coverage

```
$ make diff_cover
```

To run just the code quality checks:

```
$ make lint
```

To run the unit tests under every supported Python version and the code quality checks:

```
$ make test-all
```

To generate and open an HTML report of how much of the code is covered by test cases:

```
$ make coverage
```


5.1 fonzie package

5.1.1 Subpackages

fonzie.urls package

Submodules

fonzie.urls.acl module

fonzie.urls.lms_root module

fonzie.urls.status module

fonzie.urls.user module

Module contents

fonzie.views package

Submodules

fonzie.views.acl module

fonzie.views.status module

API status views

```
class fonzie.views.status.VersionView(**kwargs)
    Bases: rest_framework.views.APIView

    API endpoint to get the running API version

    get (request, version, format=None)
        Retrieve API version as a SemVer string
```

fonzie.views.user module

API user views

```
class fonzie.views.user.UserSessionView(**kwargs)
    Bases: rest_framework.views.APIView

    API endpoint to get the authenticated user information.

    get (request, version, format=None)
        Retrieve logged in user, then generate a JWT with a claim containing its username (unique identifier)
        and its email. The token's expiration can be changed through the setting ACCESS_TOKEN_LIFETIME
        (default 5 minutes).

    permission_classes = [<class 'rest_framework.permissions.IsAuthenticated'>]
```

Module contents

5.1.2 Submodules

5.1.3 fonzie.apps module

fonzie Django application initialization.

```
class fonzie.apps.FonzieConfig(app_name, app_module)
    Bases: django.apps.config.AppConfig

    Configuration for the fonzie Django application.

    name = u'fonzie'
```

5.1.4 fonzie.models module

Database models for fonzie.

5.1.5 Module contents

Fonzie, A FUN API for Open edX.

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