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**assertio**

***Release 1.4.1***

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## INSTALLATION

To install assertio you will need only pip, nothing else is required

```
$ pip install assertio
```



## BASIC USAGE

### 2.1 Assertio Configuration

In order to start writing your test cases, there is some configuration that you must do. `assertio` is flexible enough to get some necessary data from different sources.

#### 2.1.1 Environment Variables

If there is not any settings file under your project's root, `assertio` will look for the following environment variables

```
ASSERTIO_BASE_URL      # Define the API to be tested url
ASSERTIO_LOGFILE       # Defaulted to assertio.log will receive the execution logs
ASSERTIO_PAYLOADS_DIR  # Defaulted to features/payloads will define the local directory
                        # to .json files that can be used while executing requests
```

`ASSERTIO_BASE_URL` **must** exist if there is not a settings file, otherwise the tests won't run.

#### 2.1.2 `assertio.json` file

`assertio` Will look for this settings file in your project's root, the structure of this file should be like this

```
{
  "base_url": "your-api-url",
  "logfile": "assertio.log",
  "payloads_dir": "features/payloads"
}
```

If any key is missing, `assertio` will try to replace it with the environment variables mentioned above, using the same default values.

### 2.1.3 assertio.yaml file

If you are a fan of yaml files, assertio can be setup using this settings file in your project's root, the structure of this file should be like this

```
base_url: your-api-url
logfile: assertio.log
payloads_dir: features/payloads
```

If any key is missing, assertio will try to replace it with the environment variables mentioned above, using the same default values.

## 2.2 Runners

assertio has a Runner class in order to create child classes to hold all your test cases, to create a new Runner it is important to add a new runner file within `features/runners` folder.

Your new child class name **must** end with *Runner* suffix, otherwise it wont be reachable from assertio CLI.

```
# features/runners/example.py
from assertio import Runner

class BookRunner(Runner):

    def test_get_books(self):
        ...

    def test_post_book(self):
        ...

    def test_patch_book(self):
        ...

    def test_delete_book(self):
        ...
```

It's worth to mention that all your test cases **must** start with **test** prefix in order to be executed.

### 2.2.1 Start a set of tests

Once you have defined your *Runners* run them is as easy as just invoke the `.start()` method.

```
# main.py
from features.runners.book import BookRunner
from features.runners.author import AuthorRunner

if __name__ == "__main__":
    BookRunner().start()
    AuthorRunner().start()
```



## 2.3 Creating Request() chains

assertio also has a Request class with all the necessary methods to

- Setup http request body, headers, method, endpoint
- Perform a http request
- Assert a lot of data of the http response

This can be done using a *chain-like syntax* which will make the test easier to read, understand and modify.

```
# features/runners/example.py
from assertio import Runner

class BookRunner(Runner):

    def test_get_books(self):
        Request()\
            .to("/api/v1/books/")\
            .with_method("GET")\
            .perform()\
            .assert_http_ok()
```

This test above will execute the next steps one by one:

- Creates a new request
- Sets the request endpoint to /api/v1/books/
- Sets request method to GET
- Executes the requests and store the response
- Asserts that response status code equals HTTP OK 200

### 2.3.1 Assertions

But, you can assert many more information about your request, let's take a look to a little more complex example.

```
# features/runners/example.py
from assertio import Runner

class BookRunner(Runner):

    def test_get_books(self):
        Request()\
            .to("/api/v1/books/")\
            .with_method("GET")\
            .perform()\
            .assert_http_ok()\
            .assert_response_field("results")\
            .is_not_empty()
```

Now, this Request chain will execute the same steps as above and will assert that the response's json body field `results` is not an empty array.

All the assertions **must** be invoked after `.perform()`.

Otherwise an exception will be raised.

## 2.3.2 Preconditions

So far, we have been talking about how to assert information from a http response, but your Request object allows you to do more than that.

Let's take a look to a different example using more request preconditions.

```
# features/runners/example.py
from assertio import Runner

DEFAULT_HEADERS = {"Content-Type": "application/json"}
BOOK_PAYLOAD = {
    "id": 144,
    "title": "The Divine Comedy",
    "author": {
        "id": 12,
        "name": "Dante Alighieri",
        "nationality": "Italian"
    },
    "year": 1472
}

class BookRunner(Runner):

    def test_post_book(self):
        Request()\
            .to("/api/v1/books/")\
            .with_method("POST")\
            .with_headers(DEFAULT_HEADERS)\
            .with_body(BOOK_PAYLOAD)\
            .perform()\
            .assert_http_created()\
            .assert_response_field("author.name")\
            .equals("Dante Alighieri")
```

This test above will execute the next steps one by one:

- Creates a new request
- Sets the request endpoint to /api/v1/books/
- Sets request method to POST
- Sets request headers to DEFAULT\_HEADERS dictionary
- Sets request payload to BOOK\_PAYLOAD dictionary
- Asserts that response's status code equals HTTP CREATED 201
- Asserts that response's json body field author.name field equals "Dante Alighieri"

As you might have guessed, all the preconditions **must** be invoked before invoking `.perform()`.

### 2.3.3 Quick tips

#### Skipping one line

When defining a new request method can be added to `Request()` initial line.

```
# features/runners/example.py
from assertio import Runner

class BookRunner(Runner):

    def test_get_books(self):
        Request("GET")\
            .to("/api/v1/books/")\
            .perform()\
            .assert_http_ok()
```

Will work exactly the same as the previous request, this might help you to save one chain member!

#### Using data from .json files.

Sometimes you might need to add huge payloads to your request, full of static data, therefore, `assertio` allows you to load a json file when using `.with_body()`, just add the name as parameter! As long as your .json file exists within `features/payloads` `assertio` will find it! Let's see an example

Listing 1: features/payloads/api/book.json

```
{
  "id": 144,
  "title": "The Divine Comedy",
  "author": {
    "id": 12,
    "name": "Dante Alighieri",
    "nationality": "Italian"
  },
  "year": 1472
}
```

```
class BookRunner(Runner):

    def test_post_book(self):
        Request("POST")\
            .to("/api/v1/books/")\
            .with_headers(DEFAULT_HEADERS)\
            .with_body("api/book.json")\
            .perform()\
            .assert_http_created()\
            .assert_response_field("author.name")\
            .equals("Dante Alighieri")
```

Should work just the same as the previous POST example!

## 2.4 Assertio CLI (WIP)

assertio has a CLI as well!

Once you have defined your runners under `features/runners`, you can run all of them using:

Listing 2: Within your virtualenv

```
$ assertio
```

Running this command will execute all the tests for each class with the `Runner` suffix, but you can always choose just one using the `--run` flag

```
$ assertio --run BookRunner
```

Will run only the `BookRunner` defined.

Using the `assertio` command will execute runners using the default settings mentioned above, looking for either `assertio.json` or `assertio.yaml` files in your project's root or using the defined environment variables.

But you can also specify which settings file to use with the `--settings` this might be useful when you work with more than one API environment, you can easily switch between testing dev environment API to uat environment API!

```
$ assertio --run BookRunner --settings=dev.json  
$ assertio --run BookRunner --settings=uat.json
```

Will execute the same test set just changing the url and other settings already mentioned!

Hope this basic usage was useful for you to start testing your APIs!

## INDICES AND TABLES

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