

Веб-приложение Flask.

Веб приложение представляет из себя программу, ведущую учёт пользователей. Сервер принимает запросы с любого клиента, если они имеют структуру запроса HTTP. Сервер принимает 3 типа запросов: get, put, delete. Подробнее они описаны в классе User программы. Метода `_init_` не предусмотрено, так как информация о пользователе либо вводится через запрос put, либо непосредственно в json файл-хранилище данных.

Для демонстрации работы программы в скрипте «test.py», в котором для быстрого формирования запроса использована библиотека request:

Повторный запуск теста приведёт к такому результату:

```
* Serving Flask app 'app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment
  Use a production WSGI server instead.
* Debug mode: off
* Running on all addresses.
  WARNING: This is a development server. Do not use it in a production deployment
* Running on http://10.0.2.15:8080/ (Press CTRL+C to quit)
127.0.0.1 - - [07/Dec/2021 23:01:20] "PUT /user/boca HTTP/1.1" 201 -
127.0.0.1 - - [07/Dec/2021 23:01:20] "PUT /user/joca HTTP/1.1" 201 -
127.0.0.1 - - [07/Dec/2021 23:01:20] "PUT /user/boca HTTP/1.1" 409 -
127.0.0.1 - - [07/Dec/2021 23:01:20] "GET /user/boca HTTP/1.1" 200 -
127.0.0.1 - - [07/Dec/2021 23:01:20] "DELETE /user/joca HTTP/1.1" 204 -
127.0.0.1 - - [07/Dec/2021 23:01:20] "GET /user/joca HTTP/1.1" 404 -
```

```
Создание пользователя:
{'password': '402dc084861e494abc54ad670919c530bdde1f21720db29754c669fd83cd4aada5687a8ade695ad3f6cea7374f9bb560', 'registrationDate': '07/12/2021'}
Создание пользователя с таким же паролем:
{'password': '875af3391d64464599566fb76646e0fd4a8e5aa1ab7b30b07217cf1c2ff5e64183f7c4c97bc65e4a86df9c43645a4abb', 'registrationDate': '07/12/2021'}
Попытка создать пользователя с уже существующим именем:
{'message': 'User with this username is already exists'}
Получение данных о пользователе:
{'password': '402dc084861e494abc54ad670919c530bdde1f21720db29754c669fd83cd4aada5687a8ade695ad3f6cea7374f9bb560', 'registrationDate': '07/12/2021'}
Удаление пользователя:
Попытка получить информацию о несуществующем пользователе:
{'message': 'Could not find user with this username'}
```

При хосте приложения на сервере Apache2 структура запросов и ответов не меняется.

```
* Serving Flask app 'app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment
  Use a production WSGI server instead.
* Debug mode: off
* Running on all addresses.
  WARNING: This is a development server. Do not use it in a production deployment
* Running on http://10.0.2.15:8080/ (Press CTRL+C to quit)
127.0.0.1 - - [07/Dec/2021 22:36:09] "PUT /user/boca HTTP/1.1" 409 -
127.0.0.1 - - [07/Dec/2021 22:36:09] "PUT /user/joca HTTP/1.1" 201 -
127.0.0.1 - - [07/Dec/2021 22:36:09] "PUT /user/boca HTTP/1.1" 409 -
127.0.0.1 - - [07/Dec/2021 22:36:09] "GET /user/boca HTTP/1.1" 200 -
127.0.0.1 - - [07/Dec/2021 22:36:09] "DELETE /user/joca HTTP/1.1" 204 -
127.0.0.1 - - [07/Dec/2021 22:36:09] "GET /user/joca HTTP/1.1" 404 -
```

```
Создание пользователя:
{'message': 'User with this username is already exists'}
Создание пользователя с таким же паролем:
{'password': '44952665f1c84ab695dd8d6e70614314dd44ee510740ca12f0f5624f802eb56b96b4193f6dc143d1a34d70e4402a5bd', 'registrationDate': '07/12/2021'}
Попытка создать пользователя с уже существующим именем:
{'message': 'User with this username is already exists'}
Получение данных о пользователе:
{'password': 'fdae0ce4f809452bbd848c789d08d492326ab6f56b07ab6b4e381a3965a1b47e2f4ee4df20226206be796a534887ed1f', 'registrationDate': '07/12/2021'}
Удаление пользователя:
Попытка получить информацию о несуществующем пользователе:
{'message': 'Could not find user with this username'}
```

При попытке запустить тест или сделать запрос без файла-хранилища данных пользователей, находящегося в одном репозитории с приложением, клиент будет получать ответ в виде «Internal server error», а сервер будет составлять соответствующий traceback:

```

[2021-12-07 22:54:01,985] ERROR in app: Exception on /user/boca [PUT]
Traceback (most recent call last):
  File "/home/boca/.local/lib/python3.8/site-packages/flask/app.py", line 1516,
in full_dispatch_request
    rv = self.dispatch_request()
  File "/home/boca/.local/lib/python3.8/site-packages/flask/app.py", line 1502,
in dispatch_request
    return self.ensure_sync(self.view_functions[rule.endpoint])(**req.view_args)
  File "/home/boca/.local/lib/python3.8/site-packages/flask_restful/_init_.py"
, line 467, in wrapper
    resp = resource(*args, **kwargs)
  File "/home/boca/.local/lib/python3.8/site-packages/flask/views.py", line 84,
in view
    return current_app.ensure_sync(self.dispatch_request)(*args, **kwargs)
  File "/home/boca/.local/lib/python3.8/site-packages/flask_restful/_init_.py"
, line 582, in dispatch_request
    resp = meth(*args, **kwargs)
  File "app.py", line 43, in put
    abort_if_username_exists(username)
  File "app.py", line 22, in abort_if_username_exists
    if username in users:
  File "/home/boca/flask app/users_storage.py", line 26, in __contains__
    return item in self._load()
  File "/home/boca/flask app/users_storage.py", line 37, in _load
    return json.load(file)
  File "/usr/lib/python3.8/json/_init_.py", line 293, in load
    return loads(fp.read()),
  File "/usr/lib/python3.8/json/_init_.py", line 357, in loads
    return _default_decoder.decode(s)
  File "/usr/lib/python3.8/json/decoder.py", line 337, in decode
    obj, end = self.raw_decode(s, idx=_w(s, 0).end())
  File "/usr/lib/python3.8/json/decoder.py", line 355, in raw_decode
    raise JSONDecodeError("Expecting value", s, err.value) from None
json.decoder.JSONDecodeError: Expecting value: line 1 column 1 (char 0)
127.0.0.1 - - [07/Dec/2021 22:54:01] "PUT /user/boca HTTP/1.1" 500 -
[2021-12-07 22:54:02,026] ERROR in app: Exception on /user/joca [PUT]
Traceback (most recent call last):
  File "/home/boca/.local/lib/python3.8/site-packages/flask/app.py", line 1516,
in full_dispatch_request
    rv = self.dispatch_request()
  File "/home/boca/.local/lib/python3.8/site-packages/flask/app.py", line 1502,
in dispatch_request
    return self.ensure_sync(self.view_functions[rule.endpoint])(**req.view_args)
  File "/home/boca/.local/lib/python3.8/site-packages/flask_restful/_init_.py"
, line 467, in wrapper
    resp = resource(*args, **kwargs)
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    abort_if_username_exists(username)
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    return item in self._load()
  File "/home/boca/flask app/users_storage.py", line 37, in _load
    return json.load(file)
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    return _default_decoder.decode(s)
  File "/usr/lib/python3.8/json/decoder.py", line 337, in decode
    obj, end = self.raw_decode(s, idx=_w(s, 0).end())
  File "/usr/lib/python3.8/json/decoder.py", line 355, in raw_decode
    raise JSONDecodeError("Expecting value", s, err.value) from None
json.decoder.JSONDecodeError: Expecting value: line 1 column 1 (char 0)
127.0.0.1 - - [07/Dec/2021 22:54:02] "PUT /user/joca HTTP/1.1" 500 -
[2021-12-07 22:54:02,045] ERROR in app: Exception on /user/boca [PUT]
Traceback (most recent call last):
  File "/home/boca/.local/lib/python3.8/site-packages/flask/app.py", line 1516,
in full_dispatch_request
    rv = self.dispatch_request()
  File "/home/boca/.local/lib/python3.8/site-packages/flask/app.py", line 1502,
in dispatch_request
    return self.ensure_sync(self.view_functions[rule.endpoint])(**req.view_args)
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    resp = meth(*args, **kwargs)
  File "app.py", line 43, in put
    abort_if_username_exists(username)
  File "app.py", line 22, in abort_if_username_exists
    if username in users:

```

```

Создание пользователя:
{'message': 'Internal Server Error'}
Создание пользователя с таким же паролем:
{'message': 'Internal Server Error'}
Попытка создать пользователя с уже существующим именем:
{'message': 'Internal Server Error'}
Получение данных о пользователе:
{'message': 'Internal Server Error'}
Удаление пользователя:
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Попытка получить информацию о несуществующем пользователе:
{'message': 'Internal Server Error'}

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