
QScore Documentation

Release 1.0.0

QScore

Sep 30, 2018

1	What is QScore ?	3
2	Documentation	5
3	Contribute	13
4	License	15



score

What is QScore ?

<http://qscore.io>

QScore is a **competition platform** for Data Science.

It is simple, scalable and can host your competition in a minute.

It works with Node.js, Python, RabbitMQ, Redis, Auth0, AngularJS's CoreUI and it is **open source!**

1.1 Why do we create QScore ?

Qscore supports a lot of users in a short time.

During the competition of “[Le Meilleur Datascientist de France 2018](#)”, we had peaks of 300 submissions in less than 5 seconds. Most open source platforms we have tested do not work under these stress.

1.2 Who use QScore ?

QScore is used by [Zelros](#) for “[Le Meilleur Datascientist de France 2018](#)”.

You can begin with the *My first submission* or look at the *Changelog*.

Now, you can continue with *Installation*, and become an expert with *Advanced*.

2.1 My first submission

2.1.1 Register to the competition

TODO: To be written

2.1.2 Get all the data & tutorial

TODO: To be written

2.1.3 Open the tutorial notebook

TODO: To be written

2.1.4 Set your submission key

TODO: To be written

2.1.5 Submit a prediction

TODO: To be written

2.2 Changelog

2.2.1 1.0.0

Features

- **init**: Creation of QScore

2.3 The Apache 2.0 Licence

Copyright 2018 Fabien Vauchelles

Licensed under the Apache License, Version 2.0 (the “License”); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an “AS IS” BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

2.4 Simple installation

2.4.1 Recommended requirements

You should use a virtual machine with these specifications. It is recommended but not required.

Hardware

- RAM: 8Go
- vCPU: 2
- Hdd: 10Go

Software

- OS: Ubuntu/Debian
- Node.js: 8.9
- Docker: 18.03-ce (with docker-compose)

2.4.2 Get your Auth0 credentials

See Get credentials.

Remember your *Domain*, *Client ID* and *Identifier*.

2.4.3 Clone the repository

Clone the QScore repository:

```
git clone https://github.com/fabienvauchelles/qscore.git
```

Go in the `qscore` directory:

```
cd qscore
```

2.4.4 Configure parameters

Go in the `deployment/simple` directory:

```
cd deployment/simple
```

Copy the configuration template:

```
cp variables.example.env variables.env
```

Fill the missing parameters in `variables.env`:

Parameter	Description	Example
<code>AUTH_PLAYER_ISSUER</code>	Use Domain from Auth0. Template is: <code>https://<domain>/</code>	<code>https://stuff.eu.auth0.com/</code>
<code>AUTH_PLAYER_JWKS_URI</code>	Use Domain from Auth0. Template is: <code>https://<domain>/well-known/jwks.json</code>	<code>https://stuff.eu.auth0.com/.well-known/jwks.json</code>
<code>NG_QS_AUTH_PLAYER_AUTH_NOTIFICATION</code>	Use Auth0 Client ID from Auth0	<code>https://www.stuff.com</code>
<code>NG_QS_AUTH_PLAYER_CLIENT_ID</code>	Use Auth0 Client ID from Auth0	<code>0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ</code>
<code>NG_QS_AUTH_PLAYER_DOMAIN</code>	Use Domain from Auth0	<code>stuff.eu.auth0.com</code>
<code>NG_QS_AUTH_PLAYER_REDIRECT_URI</code>	Use Redirect URI from Auth0. Template is: <code>http://<your server url>/callback</code>	<code>http://localhost:3000/callback</code>
<code>AUTH_ADMIN_SECRET</code>	Use a random string	<code>FgkqZ41Qla410q40calw412SQSF</code>

2.4.5 Build the frontend

Go in the `deployment/simple` directory:

```
./build_frontend.sh
```

2.4.6 Deploy the project

Go in the `deployment/simple` directory:

```
docker-compose build
docker-compose up -d
```

2.4.7 Connect to the interface

See [Connect to QScore](#).

2.4.8 Make yourself an admin

See Be an admin.

2.4.9 Create your first competition

See My first competition.

2.5 Create your own scorer

2.5.1 Create the scorer

Step 1: Create a new directory for your scorer

1. Go in the `score-engine/src/scorers` directory
2. Create a new directory for your scorer

```
mkdir myscorer
```

Step 2: Create a new scorer

Create a new scorer file `__init__.py`:

```
# -*- coding: utf-8 -*-  
  
from .. import BaseScorer  
import pandas as pd  
  
class Scorer(BaseScorer):  
  
    def __init__(self):  
        super().__init__()  
  
    def score(self, data_submission):  
        df_submission = pd.read_csv(data_submission)  
  
        score = # Score processing  
  
        return score
```

2.5.2 Re-Deploy the project

Go in the `deployment/simple` directory:

```
docker-compose down  
docker-compose build  
docker-compose up -d
```

2.5.3 Use the new scorer in your competition

1. Go to `http://localhost:3000`
2. Open the competition
3. Select *Edit info* on the sidebar
4. Write `scorers.myscorer.Scorer` in Scorer Class
5. Click on *Update*

2.5.4 Example 1: Scorer of MDSF 2016

Here is the scorer of the competition “Le Meilleur Data Scientist de France 2016”.

We use a **MAPE** metric:

```
# -*- coding: utf-8 -*-

from .. import BaseScorer
import pandas as pd
import numpy as np

# Mean Absolute Percentage Error
def mape_error(y_true, y_pred):
    return np.mean(np.abs((y_true - y_pred) / y_true))[0]

class Scorer(BaseScorer):
    def __init__(self):
        super().__init__()

    def score(self, data_submission):
        df_submission = pd.read_csv(
            data_submission,
            sep=';',
            decimal='.',
            index_col=0,
            header=0,
            names=['id', 'price'],
        )

        submission_columns_count = df_submission.shape[1]
        if submission_columns_count != 1:
            raise Exception('Submission has {} columns and should have 1 columns with
↪";" separator'.format(
                submission_columns_count
            ))

        df_reference = pd.read_csv(
            'scorers/mdsf2016/y_test.csv',
            sep=';',
            decimal='.',
            index_col=0,
            header=0,
            names=['id', 'price'],
        )
```

(continues on next page)

(continued from previous page)

```

reference_rows_count = df_reference.shape[0]
submission_rows_count = df_submission.shape[0]
if submission_rows_count != reference_rows_count:
    raise Exception('Submission has {} rows and should have {} rows'.format(
        submission_rows_count, reference_rows_count)
    )

df_reference.sort_index(inplace=True)
df_submission.sort_index(inplace=True)

score = mape_error(df_reference, df_submission)
return score

```

2.5.5 Example 2: Scorer of MDSF 2018

Here is the scorer of the competition “Le Meilleur Data Scientist de France 2018”.

We use a Logloss metric:

```

# -*- coding: utf-8 -*-

from .. import BaseScorer
from sklearn.metrics import log_loss
import pandas as pd

class Scorer(BaseScorer):
    def __init__(self):
        super().__init__()

    def score(self, data_submission):
        df_submission = pd.read_csv(
            data_submission,
            sep=',',
            decimal='.',
            header=0,
            names=['id', 'cl1', 'cl2', 'cl3'],
            index_col=0,
        )

        submission_columns_count = df_submission.shape[1]
        if submission_columns_count != 3:
            raise Exception('Submission has {} columns and should have 3 columns with_
↪comma separator'.format(
                submission_columns_count
            ))

        df_reference = pd.read_csv(
            'scorers/mdsf2018/y_test.csv',
            sep=',',
            decimal='.',
            index_col=0,
            header=0,
            names=['id', 'delai_vente'],
        )

```

(continues on next page)

(continued from previous page)

```
reference_rows_count = df_reference.shape[0]
submission_rows_count = df_submission.shape[0]
if submission_rows_count != reference_rows_count:
    raise Exception('Submission has {} rows and should have {} rows'.format(
        submission_rows_count, reference_rows_count)
    )

df_reference.sort_index(inplace=True)
df_submission.sort_index(inplace=True)

score = log_loss(df_reference, df_submission)
return score
```

2.6 Distributed installation with Jenkins

TODO: To be written

2.7 Understand QScore

2.7.1 Architecture

TODO: To be written

CHAPTER 3

Contribute

You can [open an issue](#) on this repository for any feedback (bug, question, request, pull request, etc.).

CHAPTER 4

License

See the *License*.