
QScore Documentation

Release 1.0.0

QScore

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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

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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 Load the environment

Go in the `deployment/simple` directory:

```
export $(cat variables.env | grep "^[^#]" | xargs)
```

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'],
        )
```

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```

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'],
        )

```

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```
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*.