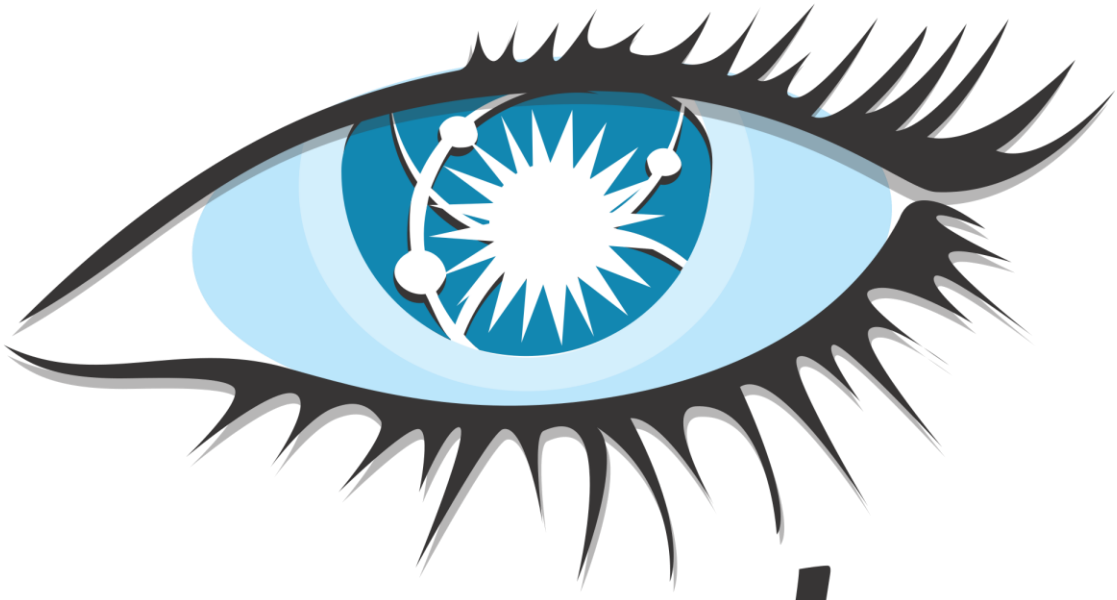

TP CASSANDRA

Youssef Mouad | BigData | March 20, 2019

1. Créez la base de données Rectorat Fez pour lequel le facteur de réplication est mis à 3. Puis Créez vos Column Family qui vous permettront une bonne modélisation de la base de données.

```
CREATE KEYSPACE IF NOT EXISTS RectoratFez WITH REPLICATION =
{ 'class' : 'SimpleStrategy', 'replication_factor' : 3 };
```

```
cqlsh>
cqlsh> CREATE KEYSPACE IF NOT EXISTS RectoratFez WITH REPLICATION =
   ... { 'class' : 'SimpleStrategy', 'replication_factor' : 3 };
cqlsh> use RectoratFez;
cqlsh:rectoratfez>
cqlsh:rectoratfez>
```

```
CREATE COLUMNFAMILY Faculty (
   id INT PRIMARY KEY,
   nom TEXT,
   quartier TEXT,
   rue TEXT,
   num INT,
   formations list<Text>,
   tel TEXT
);

CREATE COLUMNFAMILY Inspection (
   date Date,
   code_de_violation TEXT,
   description TEXT,
   score INT,
   grade TEXT,
   id_faculty INT,
   PRIMARY KEY(id_faculty, date)
);
```

```
cqlsh:rectoratfez> CREATE COLUMNFAMILY Faculty (
              ...     id INT PRIMARY KEY,
              ...     nom TEXT,
              ...     quartier TEXT,
              ...     rue TEXT,
              ...     num INT,
              ...     formations list<Text>,
              ...     tel TEXT
              ... );
cqlsh:rectoratfez>
cqlsh:rectoratfez> CREATE COLUMNFAMILY Inspection (
              ...     date Date,
              ...     code_de_violation TEXT,
              ...     description TEXT,
              ...     score INT,
              ...     grade TEXT,
              ...     id_faculty INT,
              ...     PRIMARY KEY(id_faculty, date)
              ... );
cqlsh:rectoratfez>
cqlsh:rectoratfez> DESC Tables;

inspection  faculty
```

2. Donnez la Liste des noms de toutes les facultés.

```
SELECT nom FROM Faculty;
```

```
cqlsh:rectoratfez> SELECT nom FROM Faculty;

 nom
-------------
       Fac 5
      Fac 10
 Sidi Brahim
       Fac 1
       Fac 8
       Fac 2
       Fac 4
       Fac 6
       Fac 9
       Fac 3

(10 rows)
```

3. Nom et quartier de la faculté N° 05

```
SELECT nom, quartier FROM Faculty WHERE id = 5;
```

```
cqlsh:rectoratfez> SELECT nom, quartier FROM Faculty WHERE id = 5;

 nom   | quartier
-------+------------
 Fac 5 | Quartier 5

(1 rows)
```

4. Dates et grades des inspections de cette faculté.

```
SELECT date, grade FROM Inspection WHERE id_faculty = 5;
```

```
cqlsh:rectoratfez> SELECT date, grade FROM Inspection WHERE id_faculty = 5;

 date       | grade
------------+---------
 1997-03-23 | grade 3
 1999-12-01 | grade 2
 2001-06-15 | grade 1

(3 rows)
```

5. Noms des facultés qui ont une formation appelée ‘MQL’

```
SELECT nom FROM Faculty WHERE formations contains 'MQL' ALLOW
FILTERING;
```

```
cqlsh:rectoratfez> SELECT nom FROM Faculty WHERE
                ... formations contains 'MQL' ALLOW FILTERING;

 nom
-------------
      Fac 10
 Sidi Brahim
       Fac 4

(3 rows)
```

6. Noms des Facultés situées dans ‘Sidi Brahim’ ;

```
SELECT nom FROM Faculty WHERE nom = 'Sidi Brahim' ALLOW FILTERING;
```

```
cqlsh:rectoratfez> SELECT nom FROM Faculty WHERE
                ... nom = 'Sidi Brahim' ALLOW FILTERING;

 nom
-------------
 Sidi Brahim

(1 rows)
```

7. Grades et scores donnés pour une inspection pour la faculté n° 05 avec un score d’au moins 10.

```
SELECT score, grade FROM Inspection
WHERE id_faculty = 5 AND score >= 10 ALLOW FILTERING;
```

```
cqlsh:rectoratfez> SELECT score, grade FROM Inspection
                ... WHERE id_faculty = 5 AND score >= 10 ALLOW FILTERING;

 score | grade
-------+---------
    18 | grade 3
    13 | grade 2

(2 rows)
```

8. Grades des inspections dont le score est supérieur à 5 avec le nombre de lignes retournées par la requête.

```
SELECT score, grade FROM Inspection WHERE score > 5 ALLOW FILTERING;
SELECT count(grade) FROM Inspection WHERE score > 5 ALLOW FILTERING;
```

```
cqlsh:rectoratfez> SELECT score, grade FROM Inspection
               ... WHERE score > 5 ALLOW FILTERING;

 score | grade
-------+---------
    18 | grade 3
    13 | grade 2
     7 | grade 1
    12 | grade 2
    15 | grade 1
    11 | grade 2

(6 rows)
cqlsh:rectoratfez> SELECT count(grade) FROM Inspection
               ... WHERE score > 5 ALLOW FILTERING;

 system.count(grade)
---------------------
                   6

(1 rows)
```

9. Les trois premiers Grades des inspections dont l'identifiant est compris est supérieur à 100.

```
SELECT grade FROM Inspection
WHERE token(id_faculty) > 100 LIMIT 3;
```

```
cqlsh:rectoratfez> SELECT grade FROM Inspection
               ... WHERE token(id_faculty) > 100 LIMIT 3;

 grade
-------

(0 rows)
```

10. Pour la requête ci-dessous faites en sorte qu'elle soit exécutable sans *ALLOW FILTERING*

SELECT *Name* FROM *Faculté* WHERE *quartier*='Sidi Brahim' ;

```
CREATE index index_nom ON Faculty(nom);
SELECT nom FROM Faculty WHERE nom = 'Sidi Brahim';
```

```
cqlsh:rectoratfez> CREATE index index_nom ON Faculty(nom);
cqlsh:rectoratfez> SELECT nom FROM Faculty WHERE nom = 'Sidi Brahim';

 nom
-------------
 Sidi Brahim

(1 rows)
```

11. Faites l'export de toutes les données dans un fichier txt.

```
COPY Faculty TO 'D:\\faculty.txt';
COPY Inspection TO 'D:\\inspection.txt';
```

```
cqlsh:rectoratfez> COPY Faculty TO 'D:\\faculty.txt';
Using 3 child processes

Starting copy of rectoratfez.faculty with columns [id, formations, nom, num, quartier, rue, tel].
Processed: 10 rows; Rate:      46 rows/s; Avg. rate:      10 rows/s
10 rows exported to 1 files in 1.019 seconds.
```

```
cqlsh:rectoratfez> COPY Inspection TO 'D:\\inspection.txt';
Using 3 child processes

Starting copy of rectoratfez.inspection with columns [id_faculty, date, code_de_v
iolation, description, grade, score].
Processed: 7 rows; Rate:      19 rows/s; Avg. rate:       7 rows/s
7 rows exported to 1 files in 1.029 seconds.
```

inspection.txt - Notepad

File Edit Format View Help

```
5,1997-03-23,C63135sdf,Description 3,grade 3,18
5,1999-12-01,F64654651,Description 4,grade 2,13
5,2001-06-15,D65468466,Description 5,grade 1,7
1,2002-08-06,C15161616,Description 1,grade 2,12
1,2010-10-10,C15d36516,Description 2,grade 1,15
2,2004-07-24,PP54f5516,Description 6,grade 3,5
2,2017-02-11,Pd45zd516,Description 7,grade 2,11
```