

ENSET-M	II-BDCC2
ELAAMIRI Essadeq	Big Data: Fondements et Architectures de stockage

Compte rendu du TP1

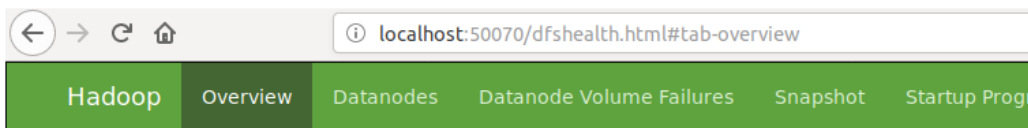
Manipulation du système de fichiers HDFS

- 1- Démarrez les processus Hadoop avec les commandes start-dfs.sh et start-yarn.sh. Ensuite, vérifiez qu'il est en cours d'exécution avec la commande jps et accéder à l'interface web de NameNode avec [http://localhost :50070](http://localhost:50070).

```
root@ubuntu:~# start-dfs.sh
22/02/23 19:39:27 WARN util.NativeCodeLoader: Unable to load native-hadoop library for optimization: java.io.IOException: /usr/lib/hadoop/libhadoop.so.1: cannot open shared object file: No such file or directory
Starting namenodes on [localhost]
```

```
root@ubuntu:~# start-yarn.sh
starting yarn daemons
```

```
root@ubuntu:~# jps
5029 NodeManager
4711 SecondaryNameNode
4471 DataNode
4872 ResourceManager
4313 NameNode
19338 Jps
```

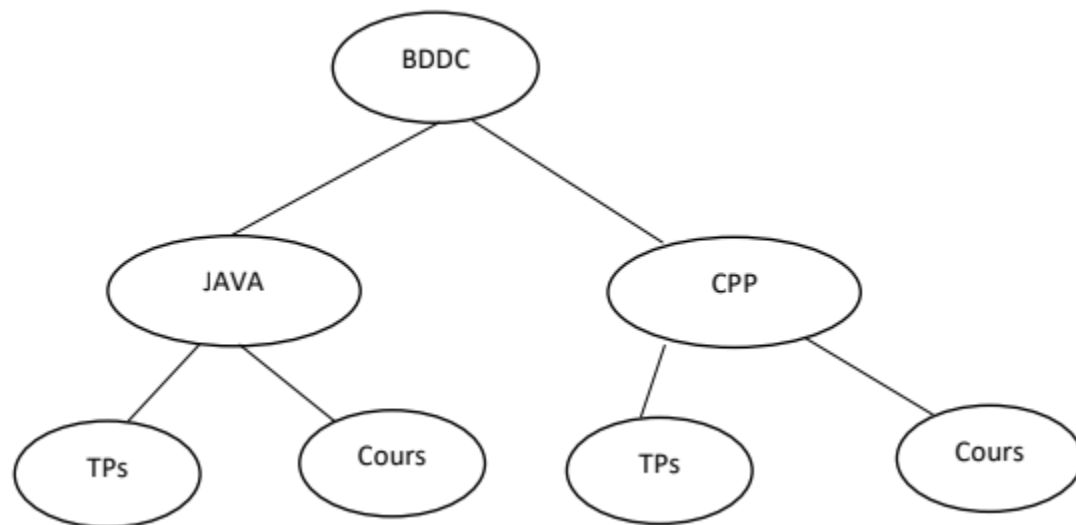


Overview 'localhost:9000' (active)

Started:	Wed Feb 23 05:11:51 PST 2022
Version:	2.7.1, r15ecc87ccf4a0228f35af08fc56de536e6ce657a
Compiled:	2015-06-29T06:04Z by jenkins from (detached from 15ecc87)
Cluster ID:	CID-a4e23064-0d9e-4247-bbca-d4c8df3cd087
Block Pool ID:	BP-1298528298-127.0.1.1-1645232607145

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2- Créez dans la racine du HDFS l'arborescence suivante :



```

hdfs dfs -mkdir /BDCC
hdfs dfs -mkdir /BDCC/JAVA
hdfs dfs -mkdir /BDCC/ CPP
hdfs dfs -mkdir /BDCC/JAVA/Cours
hdfs dfs -mkdir /BDCC/ CPP/Cours
hdfs dfs -mkdir /BDCC/JAVA/TPs
hdfs dfs -mkdir /BDCC/ CPP/TPs

hdfs dfs -ls -R /

```

```

drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ CPP
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ CPP/Cours
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ CPP/TPs
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/JAVA/Cours
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/JAVA/TPs

```

3- Créez dans le répertoire Cours de CPP les fichiers CoursCPP1, CoursCPP2 et CoursCPP3. Puis ajoutez du contenu dans les fichiers créés.

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```
hdfs dfs -touchz /BDCC/ CPP/Cours/CoursCPP1
hdfs dfs -touchz /BDCC/ CPP/Cours/CoursCPP2
hdfs dfs -touchz /BDCC/ CPP/Cours/CoursCPP3
hdfs dfs -touchz /BDCC/ CPP/Cours/CoursCPP4
hdfs dfs -ls -R
```

```
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ CPP
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ CPP/Cours
-rw-r--r-- 1 root supergroup 44 2022-02-23 19:46 /BDCC/ CPP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 44 2022-02-23 19:46 /BDCC/ CPP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 44 2022-02-23 19:47 /BDCC/ CPP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 19:46 /BDCC/ CPP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ CPP/TPs
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ JAVA/Cours
drwxr-xr-x - root supergroup 0 2022-02-23 19:46 /BDCC/ JAVA/TPs
```

Création du fichier local et ajout de contenu

```
echo "Hello content to file, here is some text" > /home/content.txt
ls /home/content.txt
cat /home/content.txt
```

Remplir les fichiers à partir le fichier local

```
hdfs dfs -appendToFile /home/content.txt /BDCC/ CPP/Cours/CoursCPP1
hdfs dfs -appendToFile /home/content.txt /BDCC/ CPP/Cours/CoursCPP2
hdfs dfs -appendToFile /home/content.txt /BDCC/ CPP/Cours/CoursCPP3
```

4- Affichez le contenu des fichiers CoursCPP1, CoursCPP2 et CoursCPP3.

```
hdfs dfs -cat /BDCC/ CPP/Cours/CoursCPP1
hdfs dfs -cat /BDCC/ CPP/Cours/CoursCPP2
hdfs dfs -cat /BDCC/ CPP/Cours/CoursCPP3
```

Q1: afficher le contenu du fichier

```
22/02/23 19:55:22 WARN util.NativeCodeLoader
  applicable
Hello content to file, here is some text
```

5- Copiez les fichiers CoursCPP1, CoursCPP2 et CoursCPP3 dans le répertoire Cours de l'JAVA.

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```
hdfs dfs -cp /BDCC/PHP/Cours/CoursCPP1 /BDCC/JAVA/Cours
hdfs dfs -cp /BDCC/PHP/Cours/CoursCPP2 /BDCC/JAVA/Cours
hdfs dfs -cp /BDCC/PHP/Cours/CoursCPP3 /BDCC/JAVA/Cours
hdfs dfs -ls -R /
```

```
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/PHP
drwxr-xr-x - root supergroup 0 2022-02-23 19:55 /BDCC/PHP/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/PHP/TPs
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 19:55 /BDCC/JAVA/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/JAVA/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/JAVA/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/JAVA/Cours/CoursCPP3
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/JAVA/TPs
```

- 6- Supprimer le fichier CoursCPP3 dans le répertoire Cours de l'JAVA, et renommer CoursCPP1 et CoursCPP2 par CoursJAVA1 et CoursJAVA2 respectivement.

```
hdfs dfs -rm /BDCC/JAVA/Cours/CoursCPP3
hdfs dfs -ls -R /
```

```
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/PHP
drwxr-xr-x - root supergroup 0 2022-02-23 19:55 /BDCC/PHP/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 19:55 /BDCC/PHP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/PHP/TPs
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 19:55 /BDCC/JAVA/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/JAVA/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/JAVA/Cours/CoursCPP2
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/JAVA/TPs
```

Renommer les fichiers

```
hdfs dfs -mv /BDCC/JAVA/Cours/CoursCPP1 /BDCC/JAVA/Cours/CoursJAVA1
hdfs dfs -mv /BDCC/JAVA/Cours/CoursCPP2 /BDCC/JAVA/Cours/CoursJAVA2
hdfs dfs -ls -R /
```

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```
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/CPP
drwxr-xr-x - root supergroup 0 2022-02-23 19:55 /BDCC/CPP/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/CPP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/CPP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/CPP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 19:55 /BDCC/CPP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/CPP/TPs
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 19:55 /BDCC/JAVA/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/JAVA/Cours/CoursJAVA1
-rw-r--r-- 1 root supergroup 42 2022-02-23 19:55 /BDCC/JAVA/Cours/CoursJAVA2
drwxr-xr-x - root supergroup 0 2022-02-23 19:54 /BDCC/JAVA/TPs
```

- 7- Créer un répertoire dans le système de fichier local les fichiers
:TP1CPP,TP2CPP,TP1JAVA,TP2JAVA,TP3JAVA.

```
mkdir reploc
ls .
cd reploc
```

Q7: creation du repertoire local

Desktop Documents Downloads examples.desktop Music Pictures Public reploc script.sh Templates Videos

```
touch TP1CPP TP2CPP TP1JAVA TP2JAVA TP3JAVA
ls .
```

Q7: creation des fichier

```
TP1CPP TP1JAVA TP2CPP TP2JAVA TP3JAVA
```

- 8- Copier les fichiers TP1CPP,TP2CPP à partir du système de fichier local vers le répertoire TPs de
répertoire CPP.

```
hdfs dfs -put ./reploc/TP1CPP /BDCC/CPP/TPs
hdfs dfs -put ./reploc/TP2CPP /BDCC/CPP/TPs

hdfs dfs -ls -R /
```

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```
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/CPP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/CPP/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:12 /BDCC/CPP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 20:13 /BDCC/CPP/TPs
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:13 /BDCC/CPP/TPs/TP1CPP
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:13 /BDCC/CPP/TPs/TP2CPP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 20:13 /BDCC/JAVA/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA2
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/JAVA/TPs
```

- 9- Copier les fichiers TP1JAVA,TP2JAVA à partir du système de fichier local vers le répertoire TPs de répertoire JAVA.

```
hdfs dfs -put ./replac/TP1JAVA /BDCC/JAVA/TPs
hdfs dfs -put ./replac/TP2JAVA /BDCC/JAVA/TPs

hdfs dfs -ls -R /
```

```
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/CPP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/CPP/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:12 /BDCC/CPP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 20:13 /BDCC/CPP/TPs
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:13 /BDCC/CPP/TPs/TP1CPP
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:13 /BDCC/CPP/TPs/TP2CPP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 20:13 /BDCC/JAVA/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA2
drwxr-xr-x - root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs/TP1JAVA
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs/TP2JAVA
```

- 10- Afficher tout le contenu du répertoire BDCC d'une manière récursive.

```
hdfs dfs -ls -R /BDCC
```


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```
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/PHP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/PHP/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/PHP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/PHP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/PHP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:12 /BDCC/PHP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 20:13 /BDCC/PHP/TPs
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:13 /BDCC/PHP/TPs/TP1CPP
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:13 /BDCC/PHP/TPs/TP2CPP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 20:13 /BDCC/JAVA/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA2
drwxr-xr-x - root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs/TP1JAVA
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs/TP2JAVA
```

11- Supprimer le fichier TP1CPP du répertoire TPs.

```
hdfs dfs -rm /BDCC/PHP/TPs/TP1CPP
hdfs dfs -ls -R /BDCC
```

```
22/02/23 20:14:15 WARN util.NativeCodeLoader: Unable to load native-hadoop library for
applicable
22/02/23 20:14:16 INFO fs.TrashPolicyDefault: Namenode trash configuration: Deletion in
Deleted /BDCC/PHP/TPs/TP1CPP
22/02/23 20:14:18 WARN util.NativeCodeLoader: Unable to load native-hadoop library for
applicable
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/PHP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/PHP/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/PHP/Cours/CoursCPP1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/PHP/Cours/CoursCPP2
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/PHP/Cours/CoursCPP3
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:12 /BDCC/PHP/Cours/CoursCPP4
drwxr-xr-x - root supergroup 0 2022-02-23 20:14 /BDCC/PHP/TPs
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:13 /BDCC/PHP/TPs/TP2CPP
drwxr-xr-x - root supergroup 0 2022-02-23 20:12 /BDCC/JAVA
drwxr-xr-x - root supergroup 0 2022-02-23 20:13 /BDCC/JAVA/Cours
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA1
-rw-r--r-- 1 root supergroup 42 2022-02-23 20:13 /BDCC/JAVA/Cours/CoursJAVA2
drwxr-xr-x - root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs/TP1JAVA
-rw-r--r-- 1 root supergroup 0 2022-02-23 20:14 /BDCC/JAVA/TPs/TP2JAVA
```

12- Supprimer le répertoire Java avec son contenu.

```
hdfs dfs -rm -R /BDCC/JAVA
hdfs dfs -ls -R /BDCC
```

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Q12: supprimer /BDCC/JAVA et son contenu

```

22/02/23 20:14:22 WARN util.NativeCodeLoader: Unable to load native-hadoop library for
  applicable
22/02/23 20:14:23 INFO fs.TrashPolicyDefault: Namenode trash configuration: Deletion t
Deleted /BDCC/JAVA
22/02/23 20:14:25 WARN util.NativeCodeLoader: Unable to load native-hadoop library for
  applicable
drwxr-xr-x  - root supergroup      0 2022-02-23 20:12 /BDCC/CPP
drwxr-xr-x  - root supergroup      0 2022-02-23 20:12 /BDCC/CPP/Cours
-rw-r--r--  1 root supergroup    42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP1
-rw-r--r--  1 root supergroup    42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP2
-rw-r--r--  1 root supergroup    42 2022-02-23 20:13 /BDCC/CPP/Cours/CoursCPP3
-rw-r--r--  1 root supergroup      0 2022-02-23 20:12 /BDCC/CPP/Cours/CoursCPP4
drwxr-xr-x  - root supergroup      0 2022-02-23 20:14 /BDCC/CPP/TPs
-rw-r--r--  1 root supergroup      0 2022-02-23 20:13 /BDCC/CPP/TPs/TP2CPP

```