LAB – 3

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Sem: VII

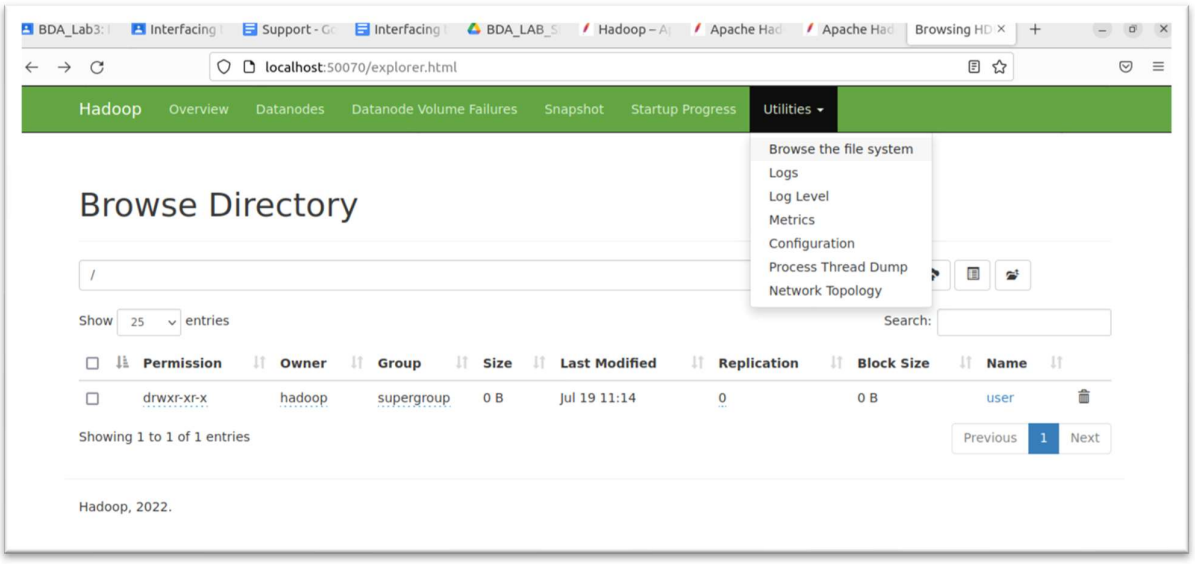
Roll No: CE046

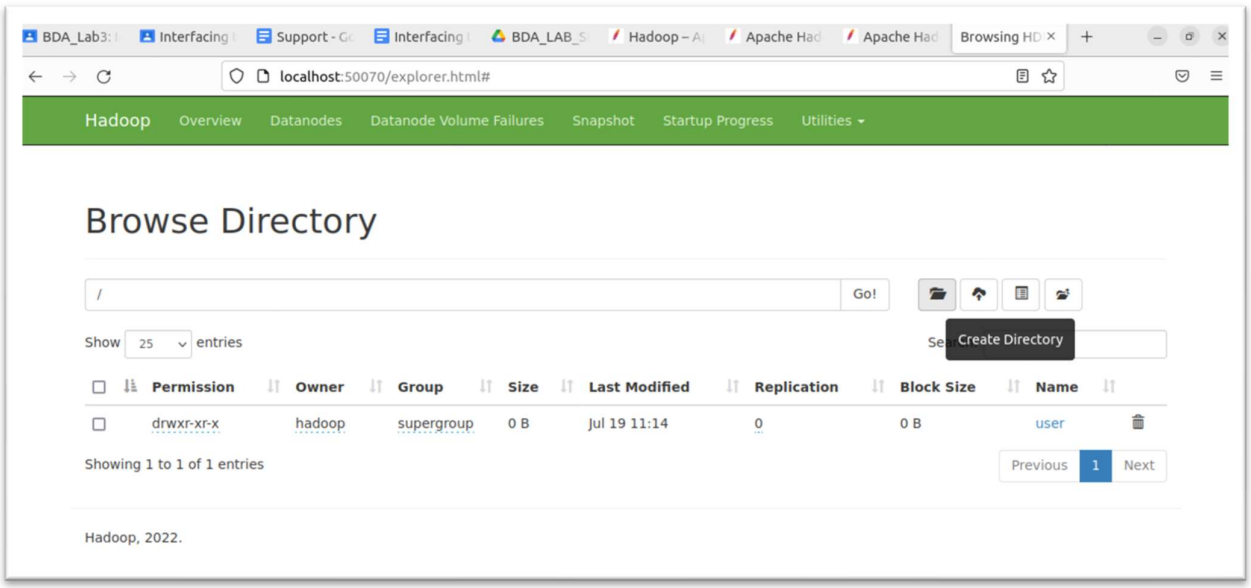
Subject: Big Data and Analytics

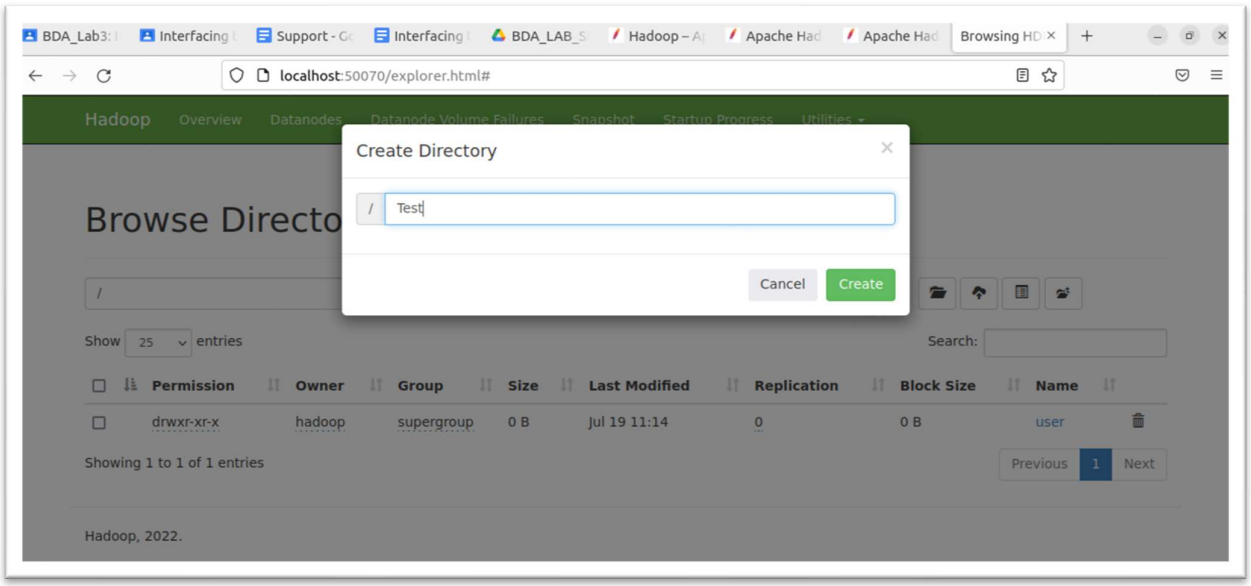
Aim: Interfacing to Distributed File System – HDFS commands and Web GUI file system browser usage.

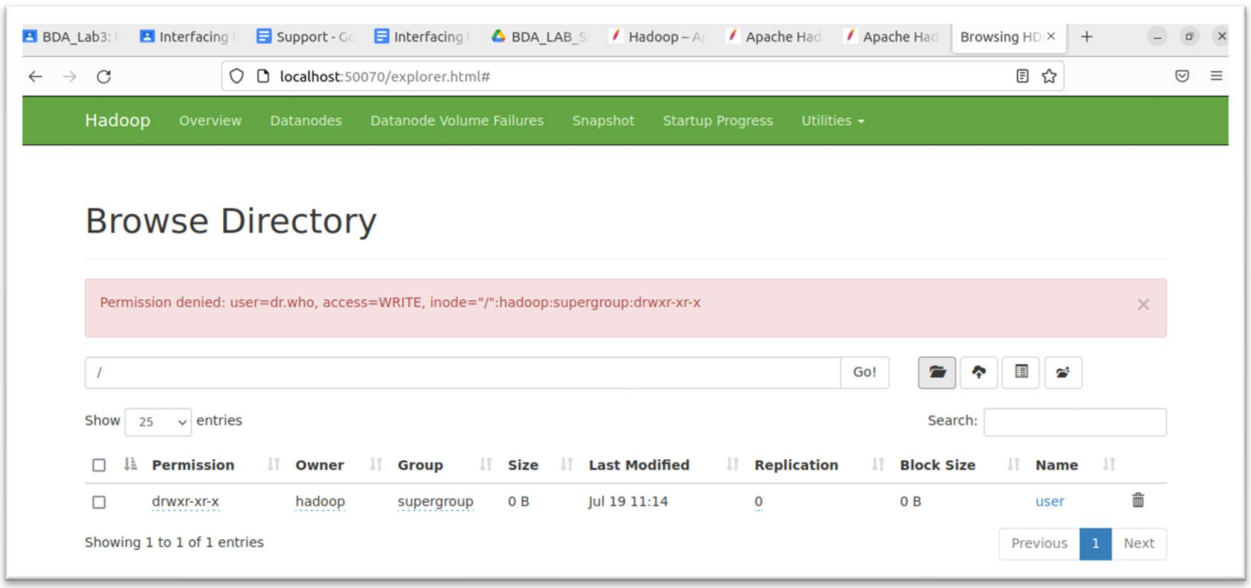
Q. 1: Create/Delete a directory/file named 'Test' from HDFS web UI in '/user/Hadoop'. It should give error message. Read this message and solve the error.

- We cannot create a file/directory on GUI because we as a Hadoop user has not access to that GUI.

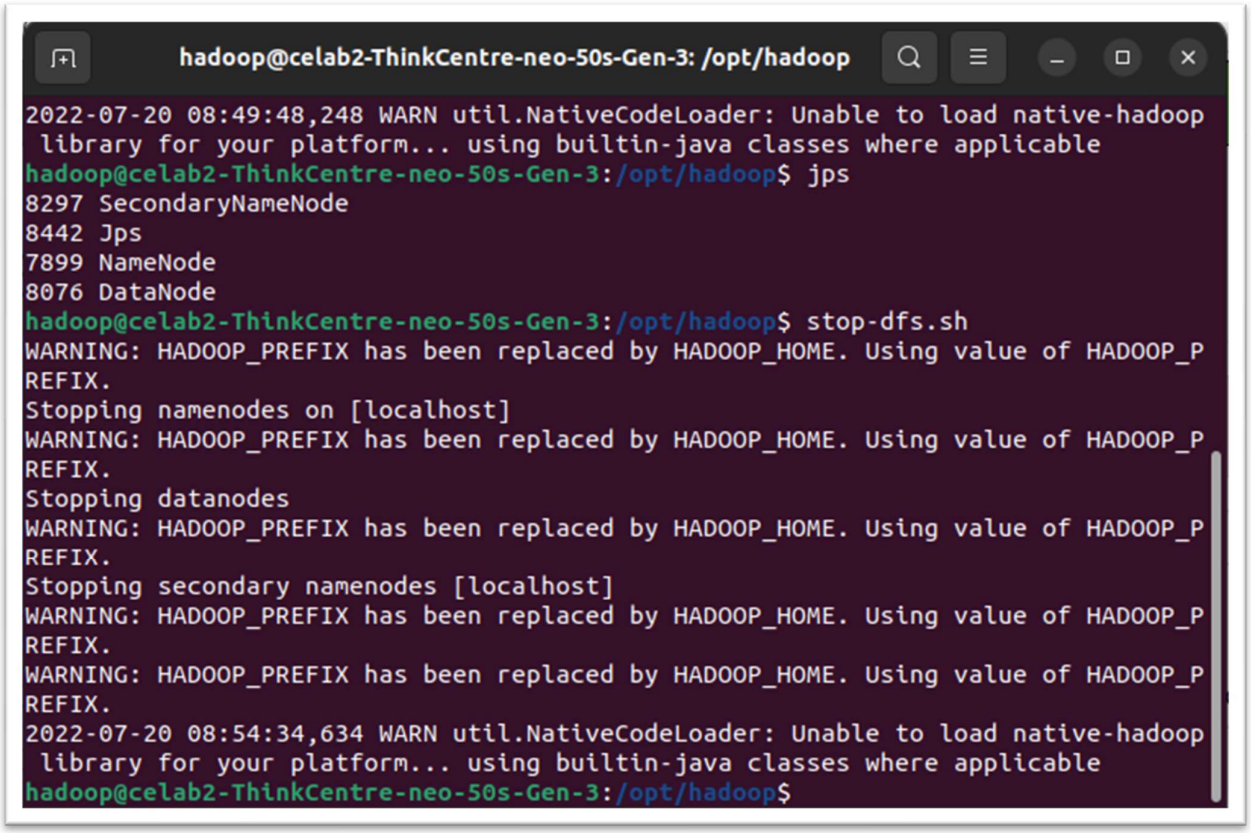



localhost:50070/explorer.html#
Hadoop
Overview
Datanodes
Datanode Volume Failures
Snapshot
Startup Progress
Utilities
Browse Directory
/
Go!
Create Directory
Show 25 entries
Permission
Owner
Group
Size
Last Modified
Replication
Block Size
Name
drwxr-xr-x
hadoop
supergroup
0 B
Jul 19 11:14
0
0 B
user
Showing 1 to 1 of 1 entries
Previous
1
Next
Hadoop, 2022.

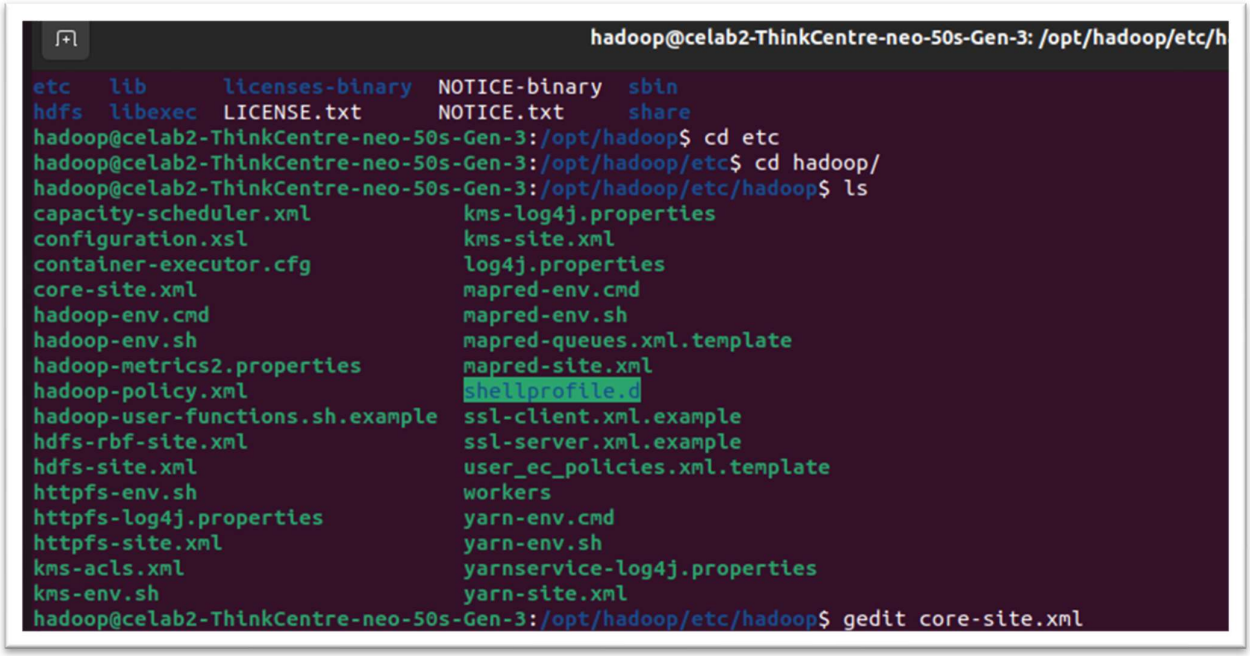

localhost:50070/explorer.html#
Create Directory
/
Test
Cancel
Create
Hadoop, 2022.

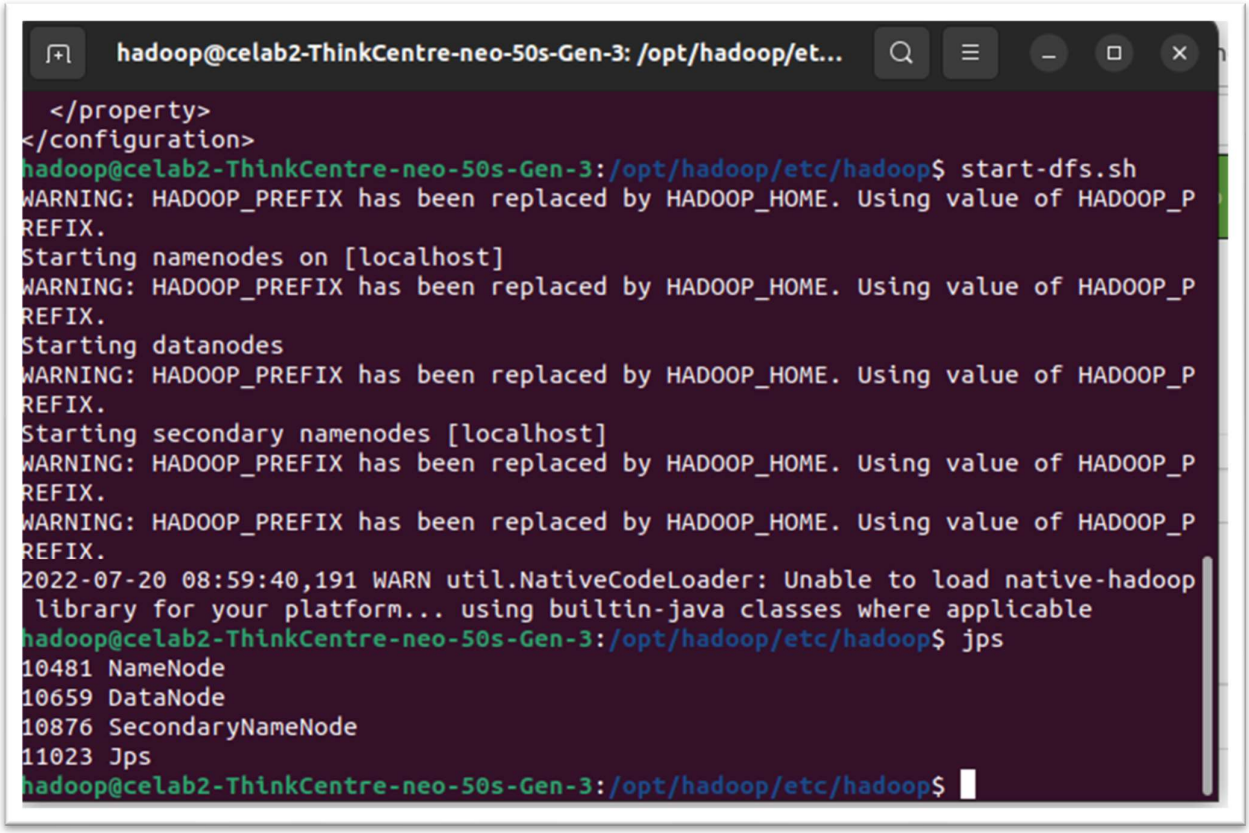


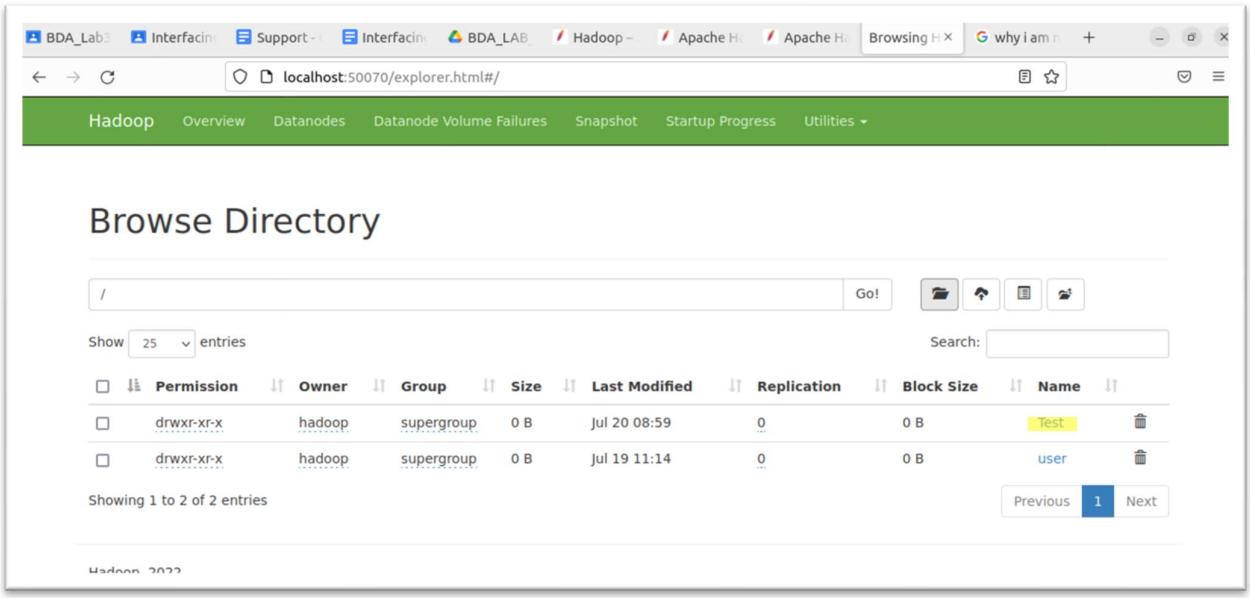
❖ Stop the server.



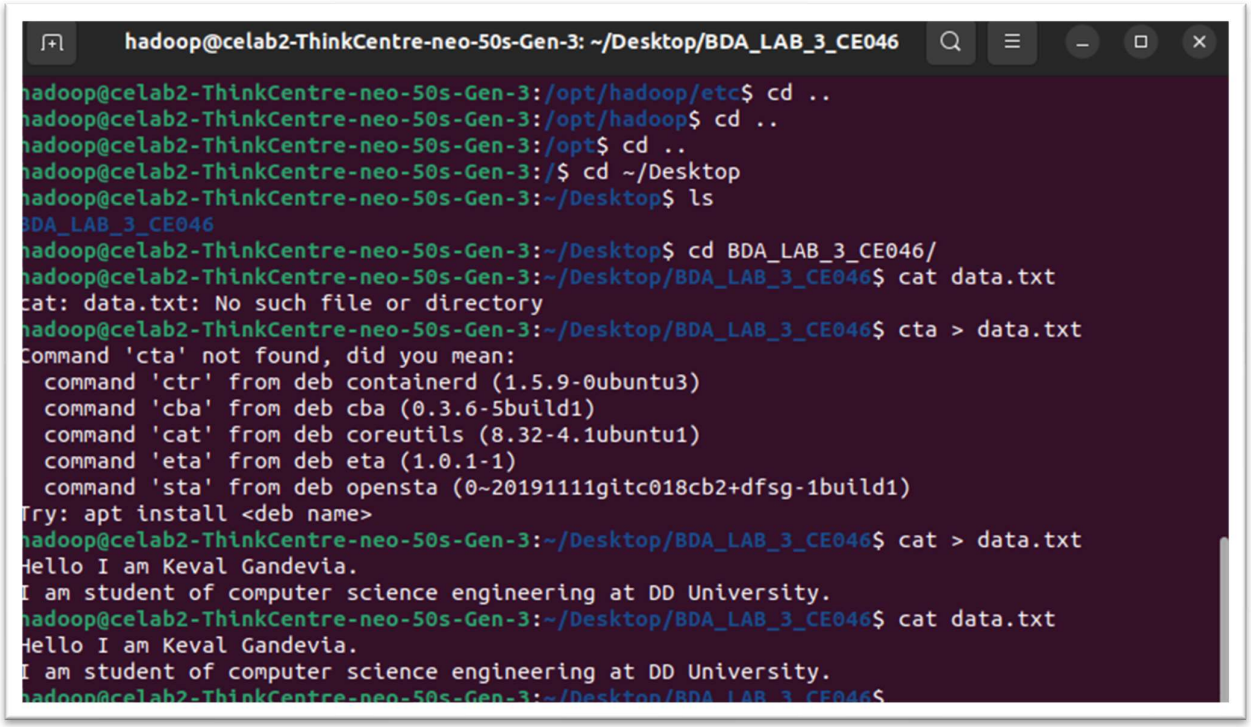
❖ We need to edit the core-site.xml and need to add the staticuser with value hadoop.



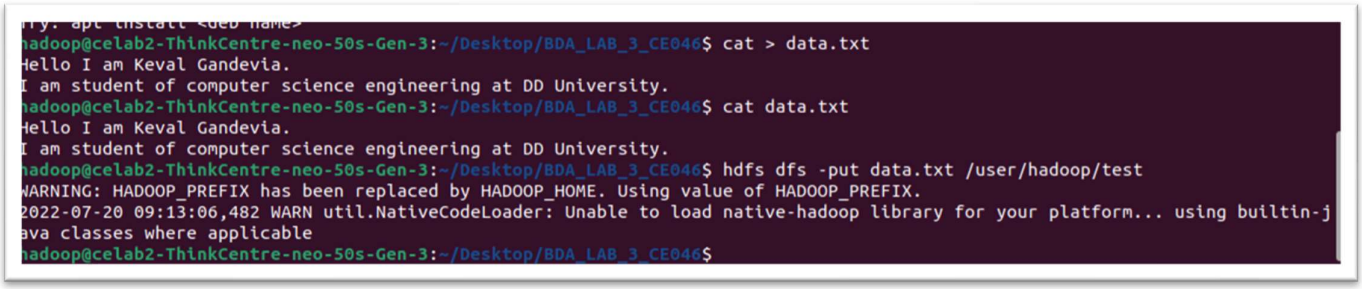

hadoop@celab2-ThinkCentre-neo-50s-Gen-3: /opt/hadoop/et...
</property>
</configuration>
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop/etc/hadoop$ start-dfs.sh
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_P
REFIX.
Starting namenodes on [localhost]
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_P
REFIX.
Starting datanodes
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_P
REFIX.
Starting secondary namenodes [localhost]
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_P
REFIX.
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_P
REFIX.
2022-07-20 08:59:40,191 WARN util.NativeCodeLoader: Unable to load native-hadoop
library for your platform... using builtin-java classes where applicable
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop/etc/hadoop$ jps
10481 NameNode
10659 DataNode
10876 SecondaryNameNode
11023 Jps
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop/etc/hadoop$


localhost:50070/explorer.html#/
Hadoop
Overview
Datanodes
Datanode Volume Failures
Snapshot
Startup Progress
Utilities
Browse Directory
/
Go!
Show 25 entries
Search:
Permission
Owner
Group
Size
Last Modified
Replication
Block Size
Name
drwxr-xr-x hadoop supergroup 0 B Jul 20 08:59 0 0 B Test
drwxr-xr-x hadoop supergroup 0 B Jul 19 11:14 0 0 B user
Showing 1 to 2 of 2 entries
Previous
1
Next

Q. 2: Create a text file in local file system and put the same file in HDFS using appropriate command.



- We can copy the file from local machine to Hadoop distributed file system using ‘put’ command.



```
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -ls /user/hadoop/test
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:13:38,819 WARN util.NativeCodeLoader: Unable to load native-hadoop library fo
 applicable
Found 1 items
-rw-r--r--   3 hadoop supergroup         90 2022-07-20 09:13 /user/hadoop/test/data.txt
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -cat /user/hadoop/test/data.t
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:15:22,687 WARN util.NativeCodeLoader: Unable to load native-hadoop library fo
 applicable
Hello I am Keval Gandevia.
I am student of computer science engineering at DD University.
```

Q. 3: Display the contents of this file of HDFS on terminal.

```
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -cat /user/hadoop/test/data.txt
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:15:22,687 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes wher
 applicable
Hello I am Keval Gandevia.
I am student of computer science engineering at DD University.
```

Q. 4: Download this file of HDFS on local machine and change its contents. Upload this modified file again on HDFS and verify its contents. Also make sure that this file should be deleted from local machine automatically.

- Modified content. For automatic deletion file from local machine we can use ‘moveFromLocal’ command.

```
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:~/Desktop/BDA_LAB_3_CE046$ cat data.txt
Hello I am Keval Gandevia.
I am student of computer science engineering at DD University.
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:~/Desktop/BDA_LAB_3_CE046$ cat >> data.txt
I am doing IELTS for abroad study.
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:~/Desktop/BDA_LAB_3_CE046$ cat data.txt
Hello I am Keval Gandevia.
I am student of computer science engineering at DD University.
I am doing IELTS for abroad study.
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:~/Desktop/BDA_LAB_3_CE046$
```

```
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -rm /user/hadoop/test/data.txt
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:29:26,840 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where
 applicable
Deleted /user/hadoop/test/data.txt
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -cat /user/hadoop/test/
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:29:37,160 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where
 applicable
cat: `/user/hadoop/test': Is a directory
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -moveFromLocal /home/hadoop/Desktop/BDA_LAB_3_CE046/data.txt /user/hadoop/test
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:29:52,094 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where
 applicable
```

```
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -ls /user/hadoop/test
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:31:09,746 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where
 applicable
Found 1 items
-rw-r--r--   3 hadoop supergroup        125 2022-07-20 09:29 /user/hadoop/test/data.txt
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -cat /user/hadoop/test/data.txt
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:31:15,237 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where
 applicable
Hello I am Keval Gandevia.
I am student of computer science engineering at DD University.
I am doing IELTS for abroad study.
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$
```

```
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:~/Desktop/BDA_LAB_3_CE046$ ls
screenshots
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:~/Desktop/BDA_LAB_3_CE046$ cat data.txt
cat: data.txt: No such file or directory
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:~/Desktop/BDA_LAB_3_CE046$
```

Q. 5: Find out CLI way to display all file system commands supported by HDFS. Record the list.

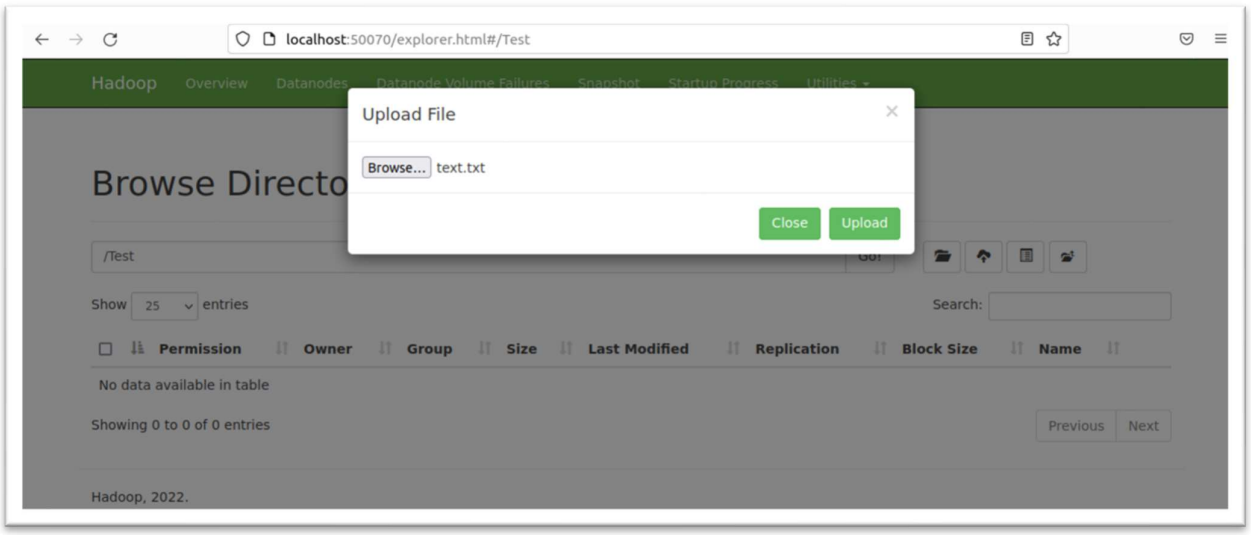
- To find out all file system commands we can use ‘help’ command.

```
hadoop@celab2-ThinkCentre-neo-50s-Gen-3:/opt/hadoop$ hdfs dfs -help
WARNING: HADOOP_PREFIX has been replaced by HADOOP_HOME. Using value of HADOOP_PREFIX.
2022-07-20 09:35:27,604 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where
 applicable
Usage: hadoop fs [generic options]
        [-appendToFile <localsrc> ... <dst>]
        [-cat [-ignoreCrc] <src> ...]
        [-checksum [-v] <src> ...]
        [-chgrp [-R] GROUP PATH...]
        [-chmod [-R] <MODE[,MODE]... | OCTALMODE> PATH...]
        [-chown [-R] [OWNER][:[GROUP]] PATH...]
        [-concat <target path> <src path> <src path> ...]
        [-copyFromLocal [-f] [-p] [-l] [-d] [-t <thread count>] [-q <thread pool queue size>] <localsrc> ... <dst>]
        [-copyToLocal [-f] [-p] [-crc] [-ignoreCrc] [-t <thread count>] [-q <thread pool queue size>] <src> ... <localdst>]
        [-count [-q] [-h] [-v] [-t [<storage type>]] [-u] [-x] [-e] [-s] <path> ...]
        [-cp [-f] [-p | -p[topax]] [-d] [-t <thread count>] [-q <thread pool queue size>] <src> ... <dst>]
        [-createSnapshot <snapshotDir> [<snapshotName>]]
        [-deleteSnapshot <snapshotDir> <snapshotName>]
        [-df [-h] [<path> ...]]
        [-du [-s] [-h] [-v] [-x] <path> ...]
        [-expunge [-immediate] [-fs <path>]]
        [-find <path> ... <expression> ...]
        [-get [-f] [-p] [-crc] [-ignoreCrc] [-t <thread count>] [-q <thread pool queue size>] <src> ... <localdst>]
        [-getfacl [-R] <path>]
        [-getfattr [-R] {-n name | -d} [-e en] <path>]
        [-getmerge [-nl] [-skip-empty-file] <src> <localdst>]
        [-head <file>]
        [-help [cmd ...]]
        [-ls [-C] [-d] [-h] [-q] [-R] [-t] [-S] [-r] [-u] [-e] [<path> ...]]
        [-mkdir [-p] <path> ...]
        [-moveFromLocal [-f] [-p] [-l] [-d] <localsrc> ... <dst>]
        [-moveToLocal <src> <localdst>]
        [-mv <src> ... <dst>]
        [-put [-f] [-p] [-l] [-d] [-t <thread count>] [-q <thread pool queue size>] <localsrc> ... <dst>]
        [-renameSnapshot <snapshotDir> <oldName> <newName>]
        [-rm [-f] [-r|-R] [-skipTrash] [-safely] <src> ...]
        [-rmdir [--ignore-fail-on-non-empty] <dir> ...]
        [-setfacl [-R] [{-b|-k} {-m|-x <acl_spec>} <path>]|[--set <acl_spec> <path>]]
```

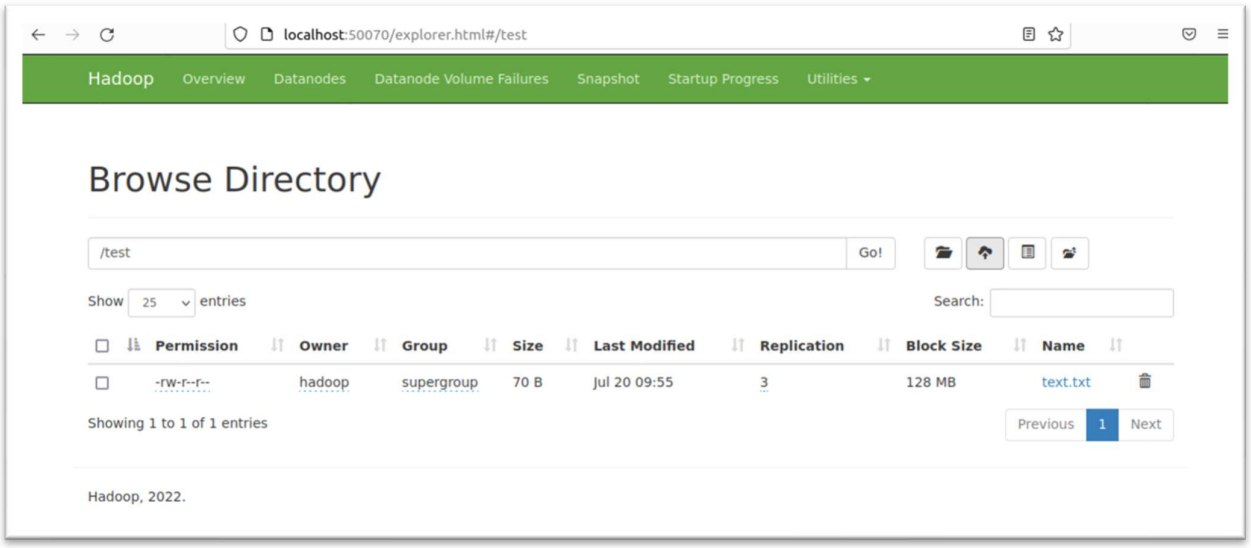
```
        [-setfacl [-R] [{-b|-k} {-m|-x <acl_spec>} <path>]|[--set <acl_spec> <path>]]
        [-setfattr {-n name [-v value] | -x name} <path>]
        [-setrep [-R] [-w] <rep> <path> ...]
        [-stat [format] <path> ...]
        [-tail [-f] [-s <sleep interval>] <file>]
        [-test -[defswrz] <path>]
        [-text [-ignoreCrc] <src> ...]
        [-touch [-a] [-m] [-t TIMESTAMP (yyyyMMdd:HHmmss) ] [-c] <path> ...]
        [-touchz <path> ...]
        [-truncate [-w] <length> <path> ...]
        [-usage [cmd ...]]
```

Q. 6: Perform file operations through Web GUI.

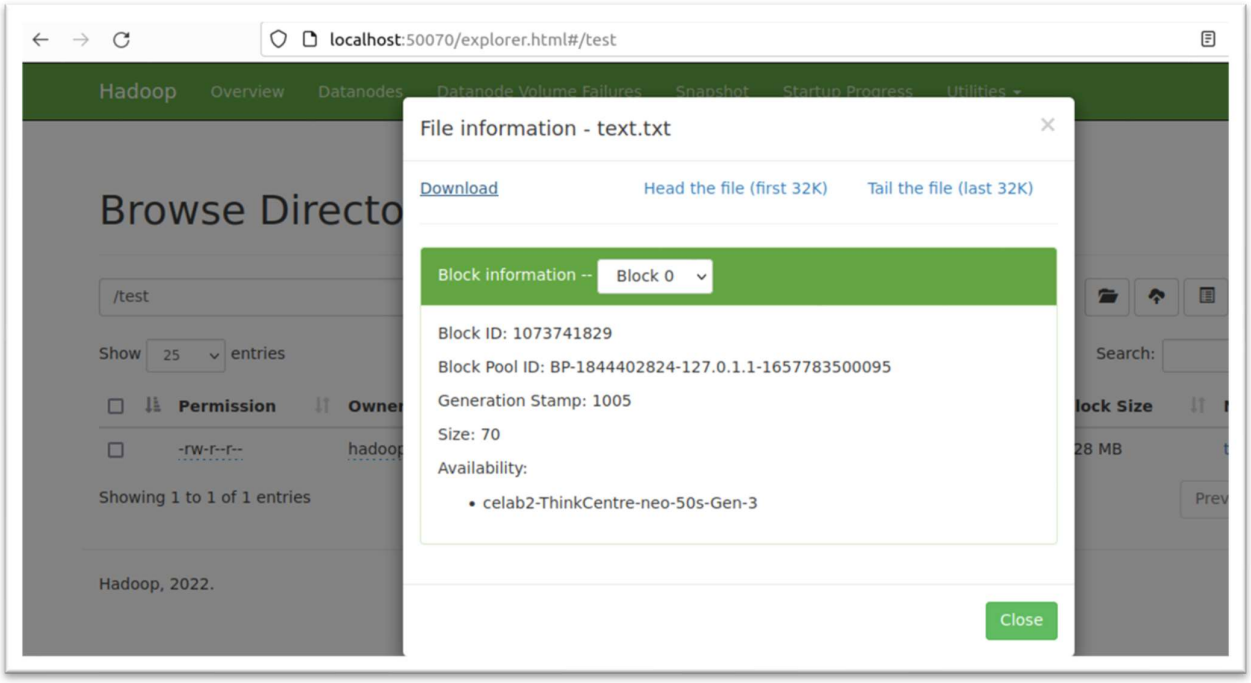
- We can upload file to distributed file system through web GUI.

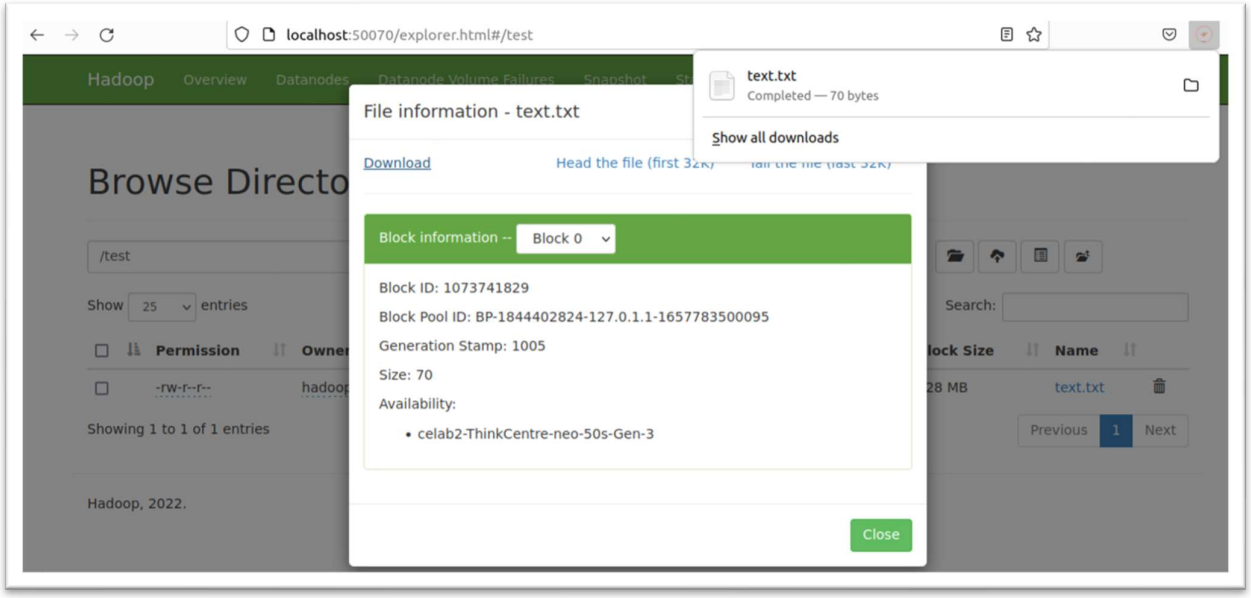


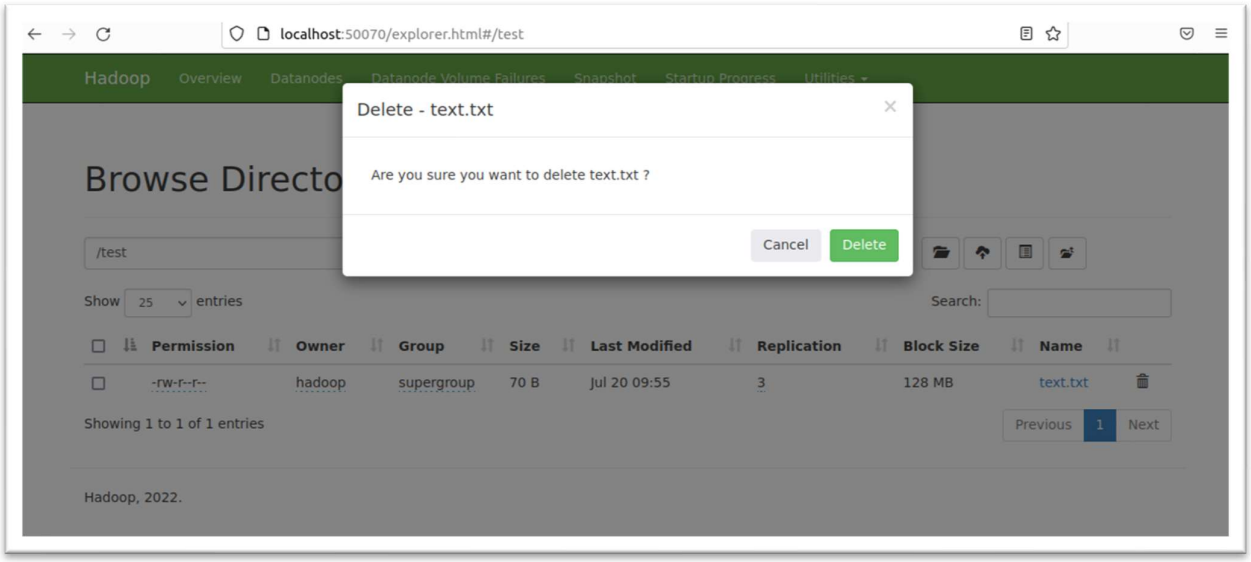
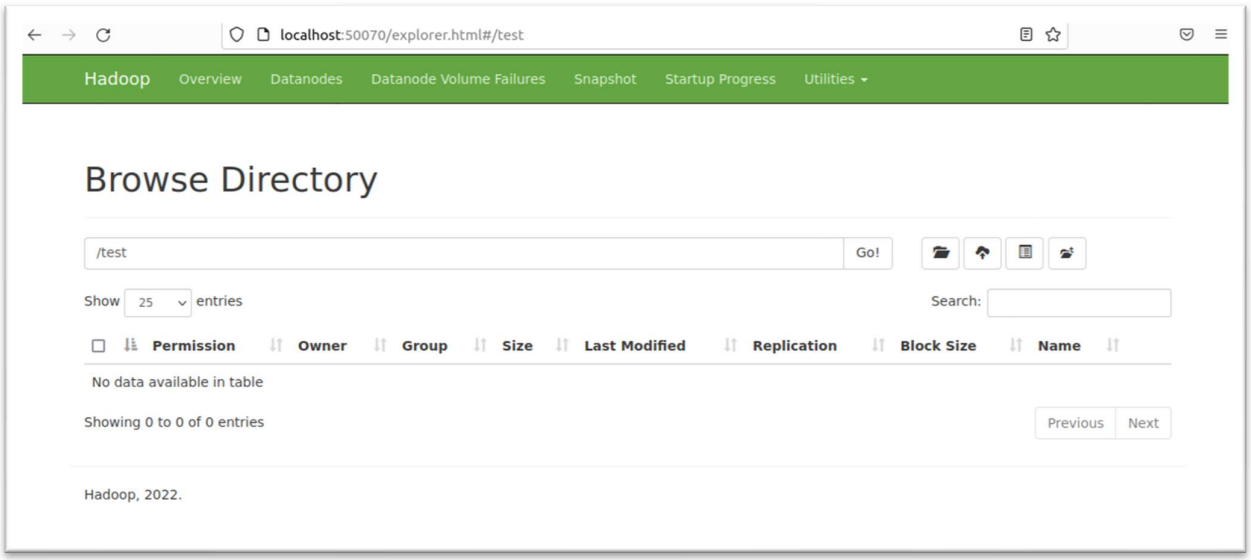
❖ Successfully uploaded.



❖ We can download the file and also can see the content of the file.


localhost:50070/explorer.html#/test
Hadoop
Overview
Datanodes
Datanode Volume Failures
Snapshot
Startup Progress
Utilities
Browse Directo
/test
Show 25 entries
Search:
Permission
Owner
-rw-r--r--
hadoop
Showing 1 to 1 of 1 entries
Hadoop, 2022.
File information - text.txt
Download
Head the file (first 32K)
Tail the file (last 32K)
Block information -- Block 0
Block ID: 1073741829
Block Pool ID: BP-1844402824-127.0.1.1-1657783500095
Generation Stamp: 1005
Size: 70
Availability:
celab2-ThinkCentre-neo-50s-Gen-3
Close


localhost:50070/explorer.html#/test
Hadoop
Overview
Datanodes
Browse Directo
/test
Show 25 entries
Search:
Permission
Owner
Name
-rw-r--r--
hadoop
text.txt
Showing 1 to 1 of 1 entries
Previous
1
Next
Hadoop, 2022.
File information - text.txt
Download
Block information -- Block 0
Block ID: 1073741829
Block Pool ID: BP-1844402824-127.0.1.1-1657783500095
Generation Stamp: 1005
Size: 70
Availability:
celab2-ThinkCentre-neo-50s-Gen-3
Close
text.txt
Completed — 70 bytes
Show all downloads

Open
text.txt
~/Downloads
1 Hadoop....
2 We are learning hadoop...
3 It is a distributed file system.

❖ We can delete the file from the distributed file system through GUI.