Term Work 2
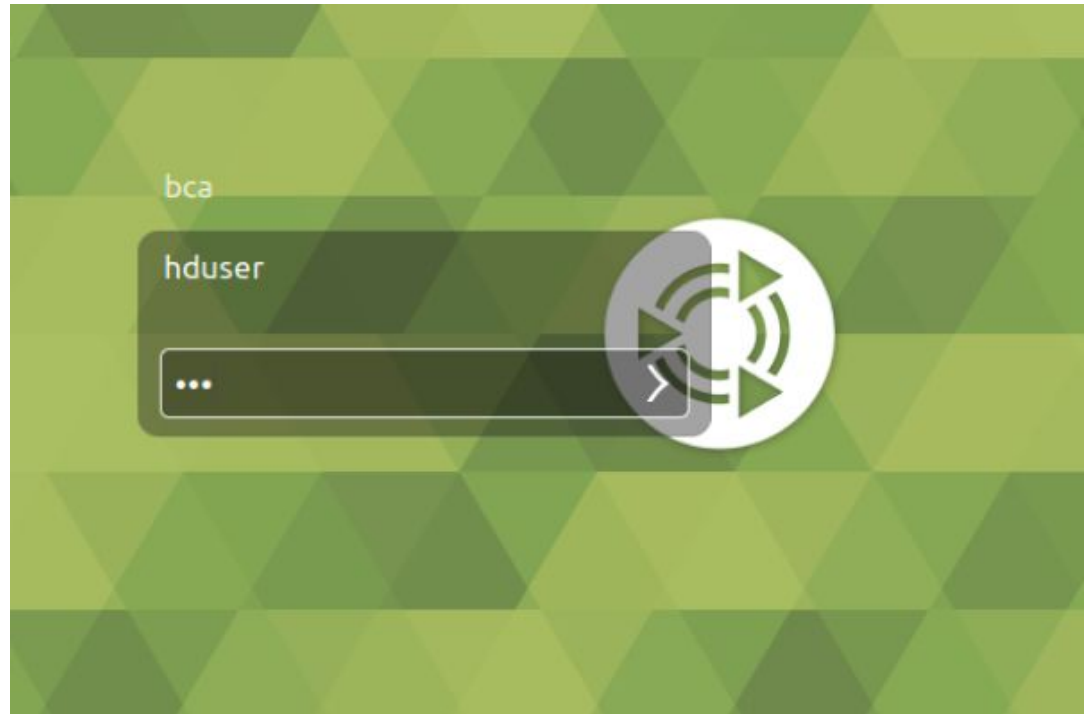
Password
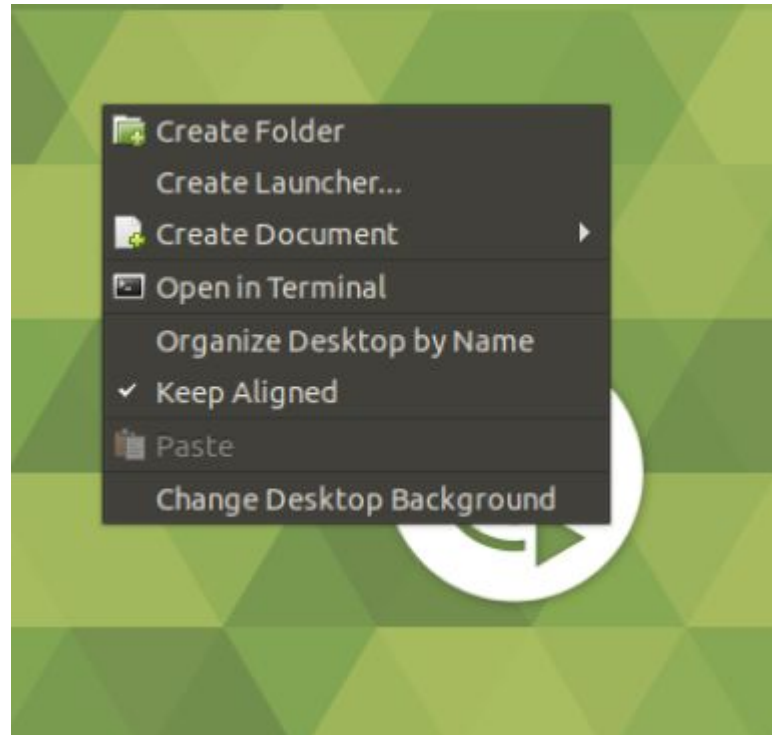dv
or
bca

Right Click & select
Open in Terminal

Type jps &


```
hduser@ubuntu:~

File Edit View Search Terminal Help
hduser@ubuntu:~$ jps
2472 Jps
hduser@ubuntu:~$ ▮
```

Type & press

Blue Colour - Directory

Password bca or dv

Type cd termwork2/

& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents$ cd termwork2/
hduser@ubuntu:~/Documents/termwork2$ █
```

Type touch shopping.txt

& press

File   Edit   View   Search   Terminal   Help
hduser@ubuntu:~/Documents/termwork2$ touch shopping.txt

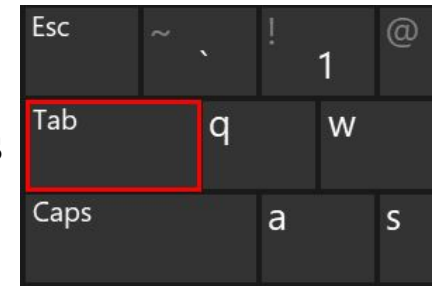Type sudo nano shopping.txt

& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents$ cd termwork2/
hduser@ubuntu:~/Documents/termwork2$ sudo nano shopping.txt
```

Type the text
& press Ctrl x y & then press

Enter date & press
Enter time & press
Enter location & press
Enter product & press
Enter amount & press
Enter payment method press
ENTER

Esc | ~ ` | ! 1 | @
Tab | q | w
Caps | a | s

File   Edit   View   Search   Terminal   Help

GNU nano 2.9.3   shopping.txt

```
1987-06-06      02:15    Hubballi        Shirt    187    visa
1992-08-27      06:30    Belagavi        jeans    900    cash
```

Type cat shopping.txt
& press

This shows your typed text


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ cat shopping.txt
1987-06-06        02:15    Hubballi         Shirt    187      visa
1992-08-27        06:30    Belagavi         jeans    900      cash
hduser@ubuntu:~/Documents/termwork2$
```

Type ls
& press

This shows your file

Type touch mapper.py

& press

File Edit View Search Terminal Help
hduser@ubuntu:~/Documents/termwork2$ touch mapper.py

Type sudo nano mapper.py

& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ sudo nano mapper.py
```

Type the code

& press Ctrl x y & then press


```
GNU nano 2.9.3                          mapper.py

#!/usr/bin/env python
import string
import fileinput

for line in fileinput.input():
    data = line.strip().split("\t")
    if len(data) == 6:
        date, time, location, item, cost, payment = data
        print "{0}\t{1}".format(location, cost)
```

Type cat mapper.py

& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ cat mapper.py
#!/usr/bin/env python
import string
import fileinput

for line in fileinput.input():
    data = line.strip().split("\t")
    if len(data) == 6:
        date, time, location, item, cost, payment = data
        print "{0}\t{1}".format(location, cost)

hduser@ubuntu:~/Documents/termwork2$ ▮
```

Type ls
& press

This shows your files

Type cat shopping.txt | python mapper.py

& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ cat shopping.txt | python mapper.py
Hubballi            187
Belagavi            900
hduser@ubuntu:~/Documents/termwork2$
```

Type touch reducer.py
& press

File Edit View Search Terminal Help
hduser@ubuntu:~/Documents/termwork2$ touch reducer.py

Type sudo nano reducer.py

& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ sudo nano reducer.py█
```

Type the code
& press Ctrl x y & then press


```python
#!/usr/bin/python
import fileinput

transactions_count = 0
sales_total = 0

for line in fileinput.input():

    data = line.strip().split("\t")

    if len(data) != 2:
        # Something has gone wrong. Skip this line.
        continue

    current_key, current_value = data

    transactions_count += 1
    sales_total += float(current_value)

print transactions_count, "\t", sales_total
```

Type cat reducer.py
& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ cat reducer.py
#!/usr/bin/python
import fileinput

transactions_count = 0
sales_total = 0

for line in fileinput.input():

    data = line.strip().split("\t")

    if len(data) != 2:
        # Something has gone wrong. Skip this line.
        continue

    current_key, current_value = data

    transactions_count += 1
    sales_total += float(current_value)

print transactions_count, "\t", sales_total

hduser@ubuntu:~/Documents/termwork2$
```

Type ls
& press

This shows your files

Type cat shopping.txt | python mapper.py | python reducer.py
& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ cat shopping.txt | python mapper.py | python reduc
er.py
2        1087.0
hduser@ubuntu:~/Documents/termwork2$ ▮
```

Type jps
& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ jps
2387 Jps
hduser@ubuntu:~/Documents/termwork2$ 
```

Type start-all.sh
& press

Provide password 4 times (it will ask)

```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ start-all.sh
This script is Deprecated. Instead use start-dfs.sh and start-yarn.sh
WARNING: An illegal reflective access operation has occurred
```

Type jps
& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ jps
3109 NodeManager
3335 Jps
2936 ResourceManager
2747 SecondaryNameNode
2510 DataNode
hduser@ubuntu:~/Documents/termwork2$ █
```

Type hdfs dfs -mkdir /tw2
& press

If it goes into safe mode then type
hdfs dfsadmin –safemode leave
After this type
hdfs dfs –mkdir /tw2

This creates a directory in cluster

File Edit View Search Terminal Help
hduser@ubuntu:~/Documents/termwork2$ hdfs dfs -mkdir /tw2
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.
util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.
7.1.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.
security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflect
ive access operations
WARNING: All illegal access operations will be denied in a future release
24/07/10 00:29:21 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
hduser@ubuntu:~/Documents/termwork2$

Type hdfs dfs -ls /

& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ hdfs dfs -ls /
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.
util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.
7.1.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.
security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflect
ive access operations
WARNING: All illegal access operations will be denied in a future release
24/07/10 00:30:41 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
Found 19 items
drwxr-xr-x   - hduser supergroup          0 2024-07-09 04:50 /90
drwxr-xr-x   - hduser supergroup          0 2024-06-25 03:02 /TERM2
drwxr-xr-x   - hduser supergroup          0 2024-07-02 22:35 /TERM3
drwxr-xr-x   - hduser supergroup          0 2024-06-18 03:16 /TW1
drwxr-xr-x   - hduser supergroup          0 2024-06-24 03:16 /TW2
drwxr-xr-x   - hduser supergroup          0 2024-07-01 03:10 /TW3
drwxr-xr-x   - hduser supergroup          0 2024-06-06 03:38 /bcom
drwxr-xr-x   - hduser supergroup          0 2024-06-13 04:01 /bam
```

Type hdfs dfs –copyFromLocal
/home/hduser/Documents/termwork2/shopping.txt /tw2
& press

Type hdfs dfs -ls /tw2
& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ hdfs dfs -ls /tw2
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.
util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.
7.1.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.
security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflect
ive access operations
WARNING: All illegal access operations will be denied in a future release
24/07/10 00:34:26 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
Found 1 items
-rw-r--r--   1 hduser supergroup         82 2024-07-10 00:33 /tw2/shopping.txt
hduser@ubuntu:~/Documents/termwork2$
```

Type sudo chmod 777 mapper.py reducer.py
& press

Provide password dv or bca

```
hduser@ubuntu:~/Documents/termwork2$ sudo chmod 777 mapper.py reducer.py
[sudo] password for hduser:
hduser@ubuntu:~/Documents/termwork2$
```

Type ls -l
& press


```
 File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ ls -l
total 12
-rwxrwxrwx 1 root root 250 Jul  9 04:02 mapper.py
-rwxrwxrwx 1 root root 395 Jul  9 04:06 reducer.py
-rw-r--r-- 1 root root  82 Jul  9 03:57 shopping.txt
hduser@ubuntu:~/Documents/termwork2$
```

Type
& press


```
File  Edit  View  Search  Terminal  Help
hduser@ubuntu:~/Documents/termwork2$ hadoop jar /home/hduser/Downloads/hadoop-st
reaming-2.7.3.jar \
> -input /tw2/shopping.txt \
> -output /tw2/output \
> -mapper /home/hduser/Documents/termwork2/mapper.py \
> -reducer /home/hduser/Documents/termwork2/reducer.py ▮
```

Everything working fine, it will show the output directory
& press


```
                IO_ERROR=0
                WRONG_LENGTH=0
                WRONG_MAP=0
                WRONG_REDUCE=0
        File Input Format Counters
                Bytes Read=123
        File Output Format Counters
                Bytes Written=10
24/07/10 00:40:15 INFO streaming.StreamJob: Output directory: /tw2/output
hduser@ubuntu:~/Documents/termwork2$ █
```

Type hdfs dfs –cat /tw2/output/part-00000
& press

This shows the final output


```
hduser@ubuntu:~/Documents/termwork2$ hdfs dfs -cat /tw2/output/part-00000
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.
util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.
7.1.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.
security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflect
ive access operations
WARNING: All illegal access operations will be denied in a future release
24/07/10 00:42:16 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
2       1087.0
hduser@ubuntu:~/Documents/termwork2$ █
```

Now open firefox and type localhost:50070/

& press
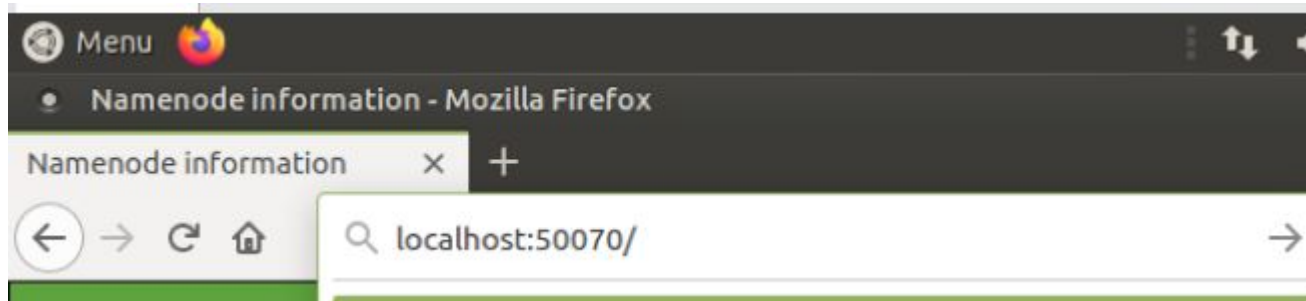
Click utilities & click Browse the file system
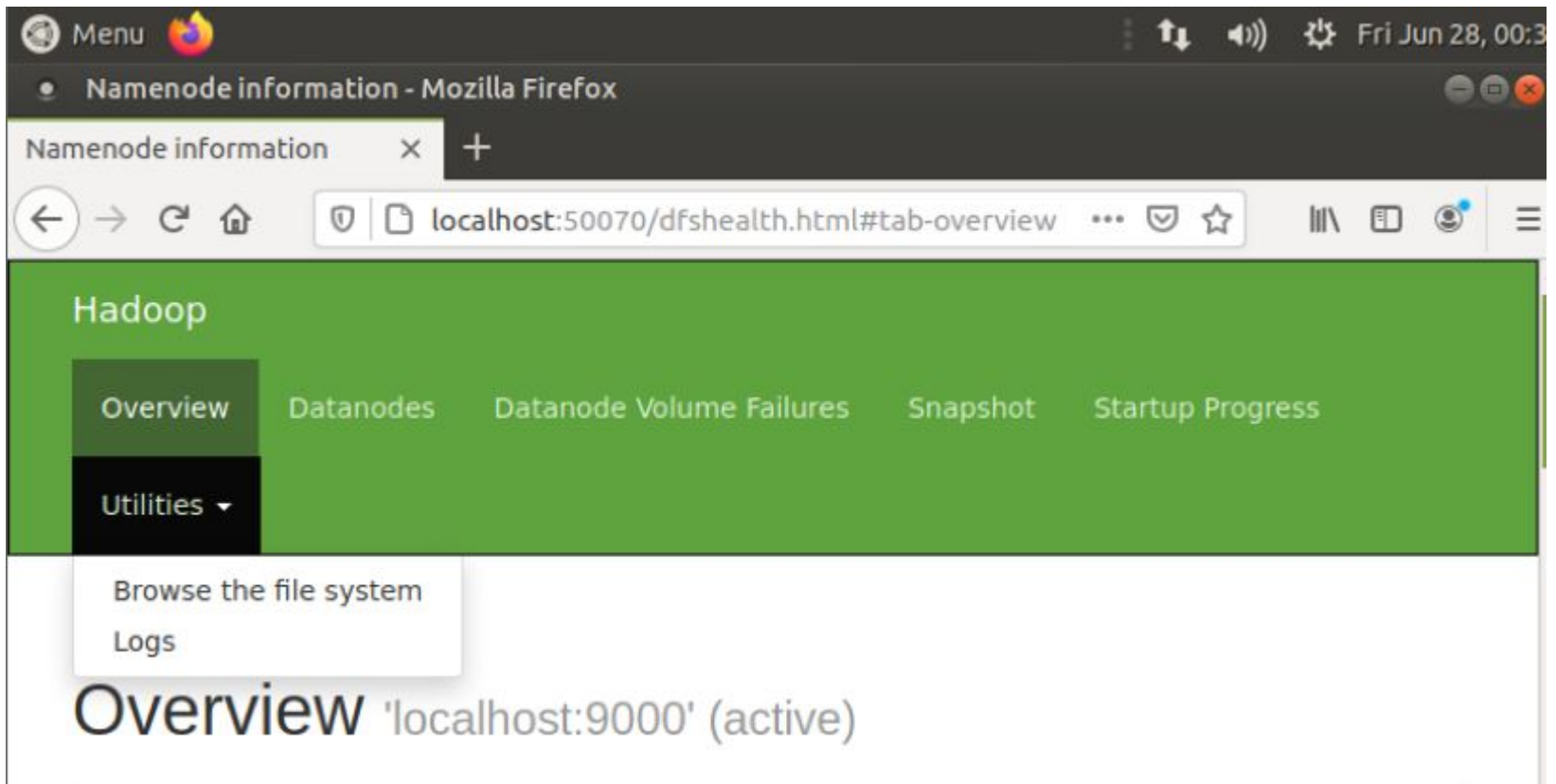
Click tw2

drwxr-xr-x	hduser	supergroup	0 B	7/9/2024, 4:50:45 AM	0	0 B	90
drwxr-xr-x	hduser	supergroup	0 B	6/25/2024, 3:02:27 AM	0	0 B	TERM2
drwxr-xr-x	hduser	supergroup	0 B	7/2/2024, 10:35:30 PM	0	0 B	TERM3
drwxr-xr-x	hduser	supergroup	0 B	6/18/2024, 3:16:15 AM	0	0 B	TW1
drwxr-xr-x	hduser	supergroup	0 B	6/24/2024, 3:16:43 AM	0	0 B	TW2

Click output

Click part-00000

Browse Directory

/tw1/8899   Go!

Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
-rw-r--r--	hduser	supergroup	0 B	6/28/2024, 12:30:52 AM	1	128 MB	_SUCCESS
-rw-r--r--	hduser	supergroup	28 B	6/28/2024, 12:30:51 AM	1	128 MB	part-00000

Click Download
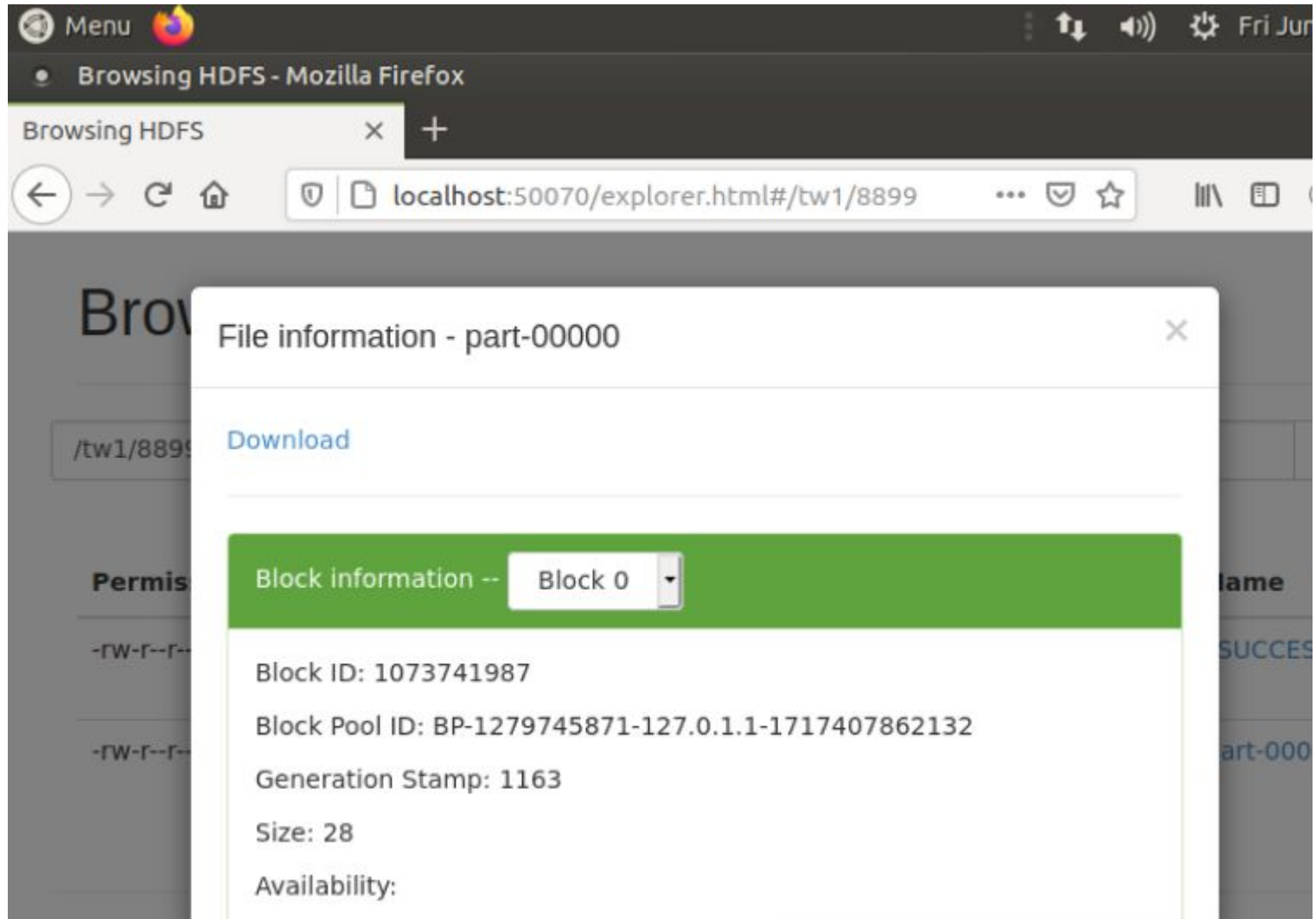
Click savefile
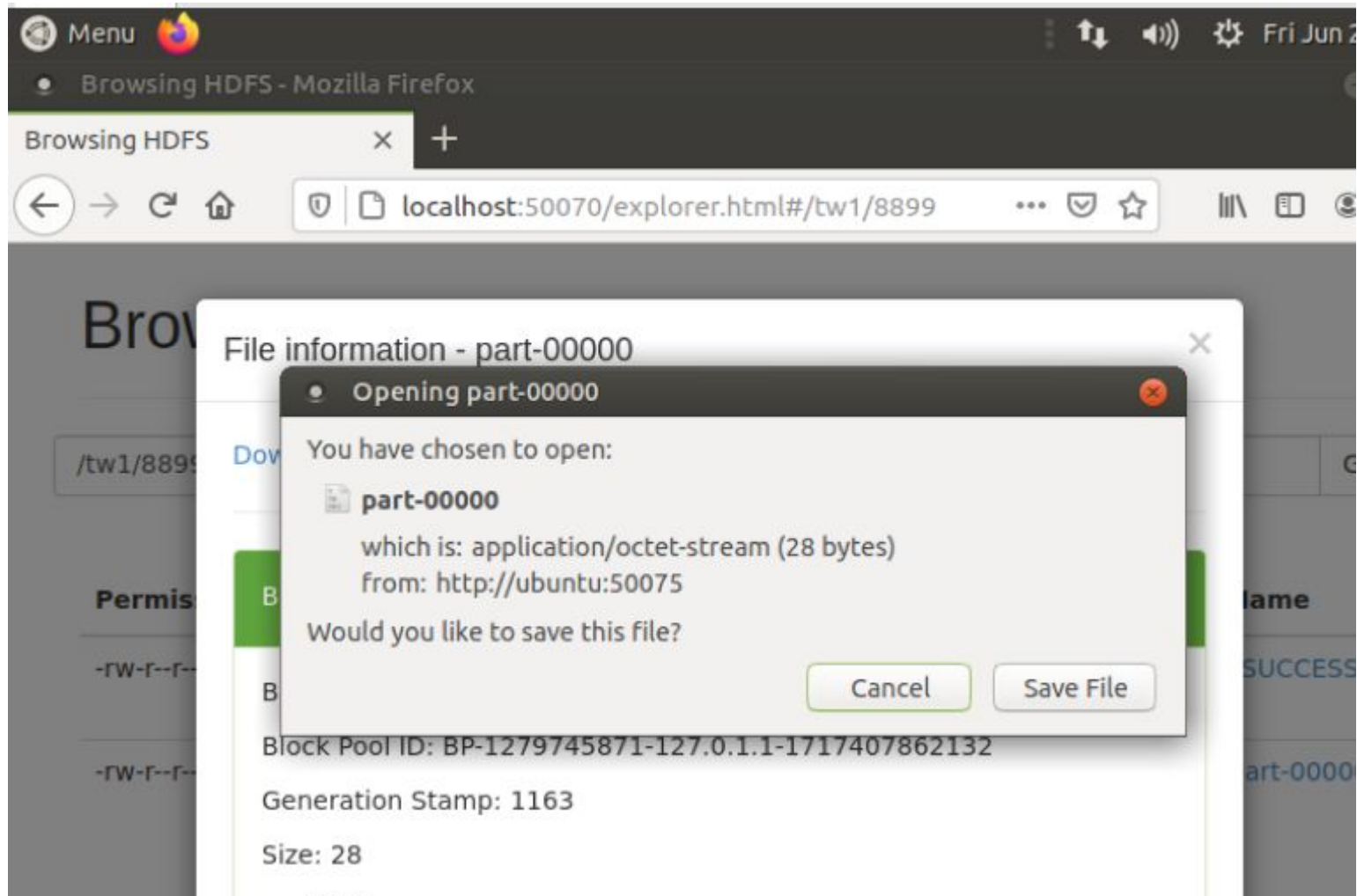
Go to download and open the file part-00000 to view the output