EX.NO. 2 **210701157**

IMPLEMENT WORD COUNT/FREQUENCY PROGRAMS USING MAPREDUCE

AIM:

To implement the python mapper and reducer programs using MapReduce to count the words in a text file using Hadoop.

PROCEDURE:

1. Open command prompt as administrator and start the Hadoop by using the command:

```
start-all.cmd
```

2. Create a new directory in the Hadoop file systems using the command:

```
hadoop fs -mkdir /wordCount
```

3. Upload the input text file into the wordCount directory using the command:

```
hadoop fs -put C:/Users/mercy/OneDrive/Documents/DataAnalytics/input.txt /wordcount
```

4. Create the mapper and reducer files.

5. To execute the files with Hadoop streaming run the following command:

```
hadoop jar C:/hadoop-3.3.6/share/hadoop/tools/lib/hadoop-streaming-3.3.6.jar ^  -file
C:/Users/mercy/Documents/DataAnalytics/mapper.py ^ -file
C:/Users/mercy/Documents/DataAnalytics/reducer.py ^ -input /wordCount/input.txt ^ -output
/user/output ^ -mapper "python mapper.py" ^ -reducer "python reducer.py"
```

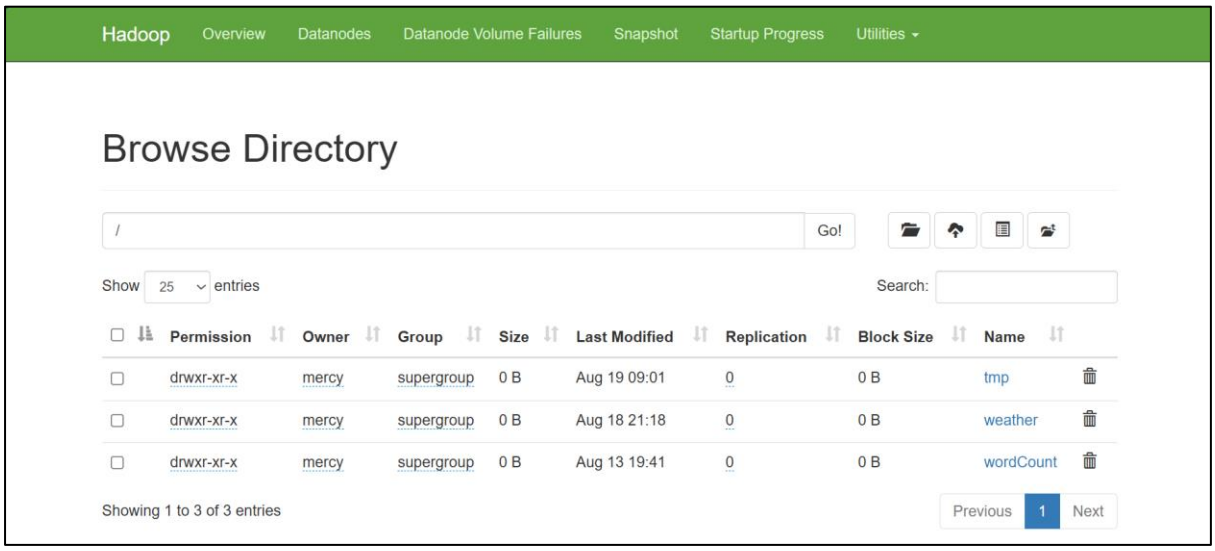
MAPPER.PY

```
#!C:/ProgramData/chocolatey/bin/python3.exe

import sys

for line in sys.stdin:

    line = line.strip()

    words = line.split()

    for word in words:

        print('%s\t%s' % (word, 1))
```

REDUCER.PY

```
#!C:/ProgramData/chocolatey/bin/python3.exe
import sys
prev_word = None
prev_count = 0
for line in sys.stdin:
    line = line.strip()
    word, count = line.split('\t')
    count = int(count)
    if(prev_word == word):
        prev_count += count
    else:
        if prev_word:
            print('%s\t%s' % (prev_word, prev_count))
        prev_count = count
        prev_word = word
if prev_word == word:
            print('%s\t%s' % (prev_word, prev_count))
```

OUTPUT:



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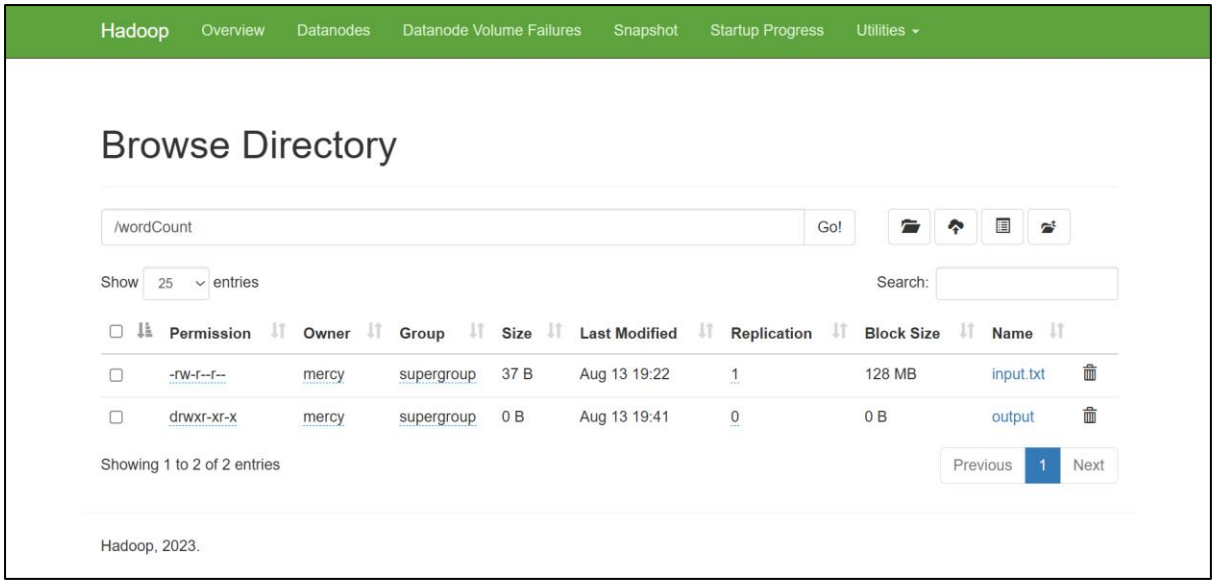

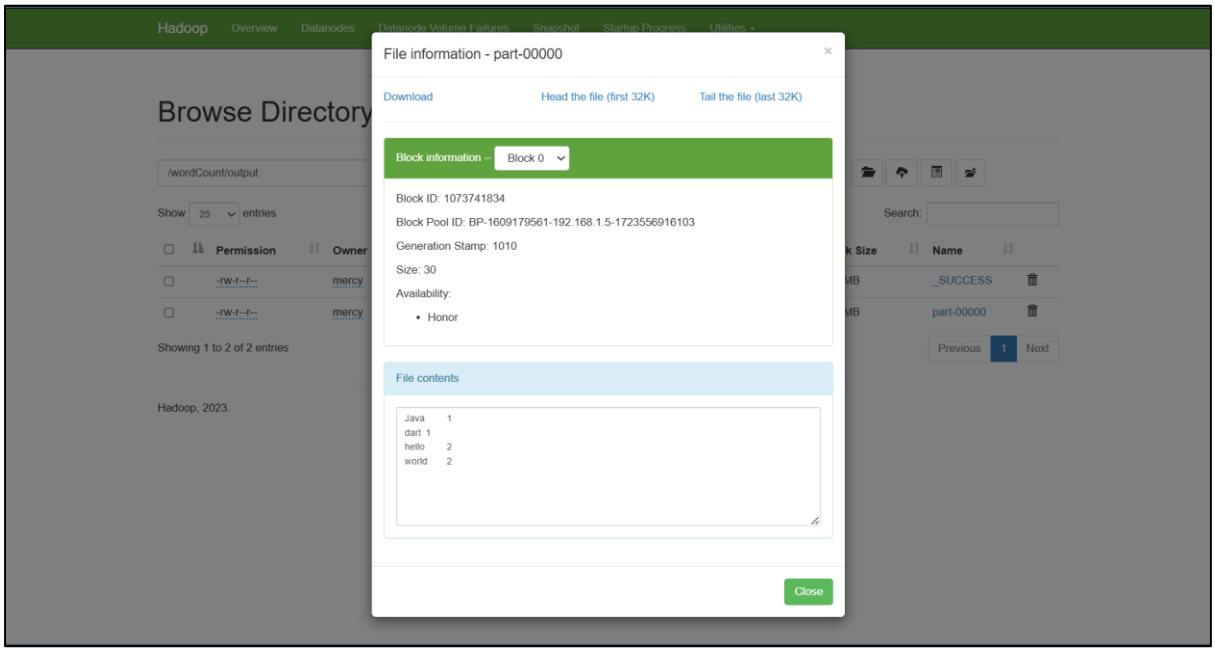

RESULT:

Thus the implementation of the python mapper and reducer programs using MapReduce to count the words in a text file using Hadoop is executed successfully.