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"
```

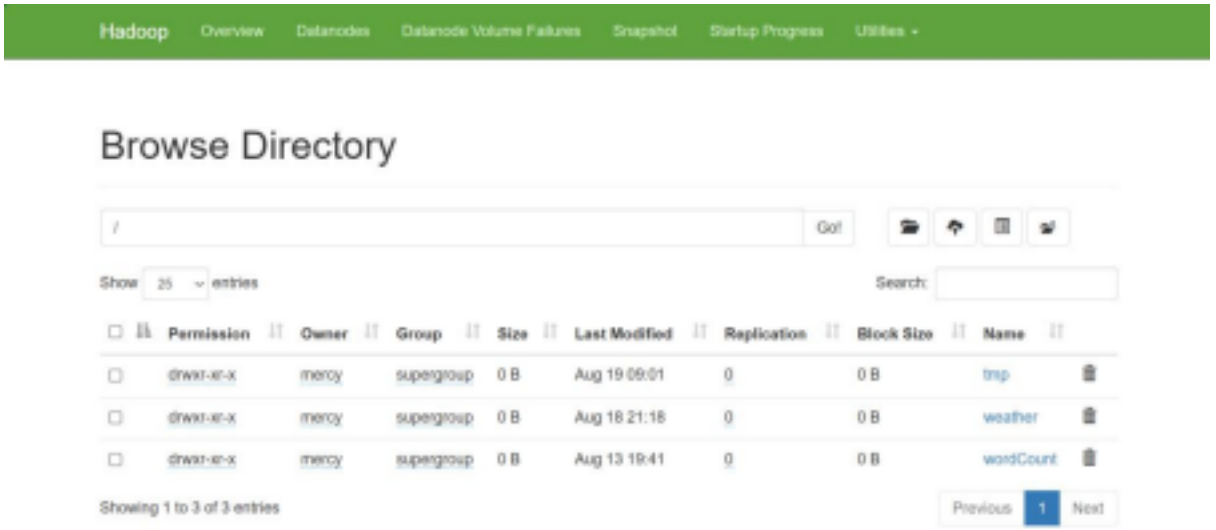
MAPPER.PY

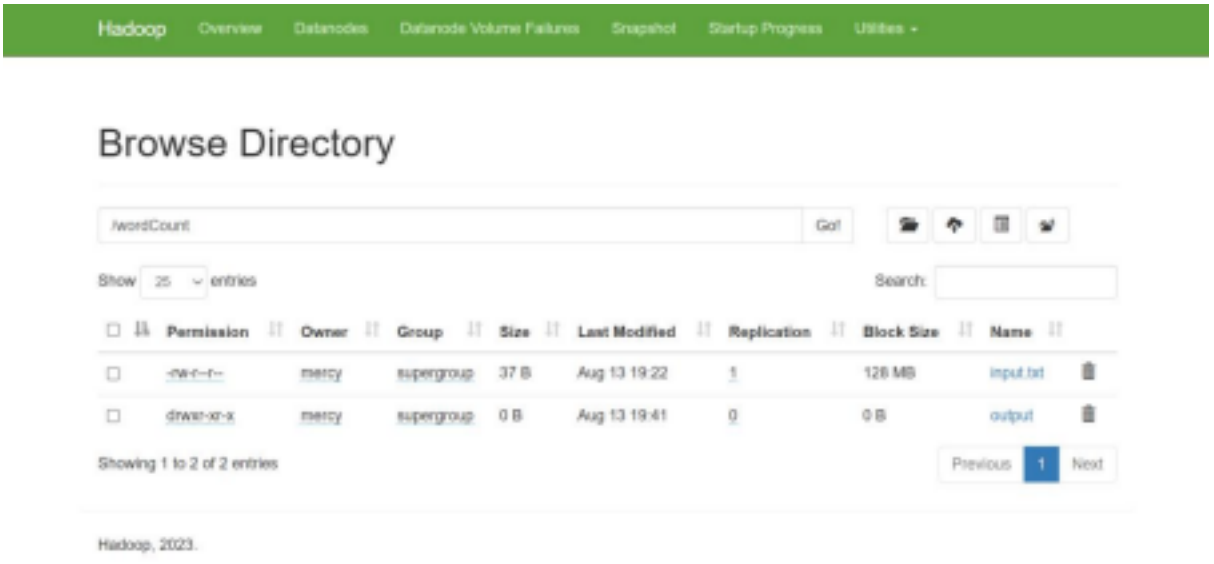
```
#!C:/ProgramData/chocolatey/bin/python3.exe

import sys

for line in sys.stdin:

    line = line.strip()

    words = line.split()

    for word in words:

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

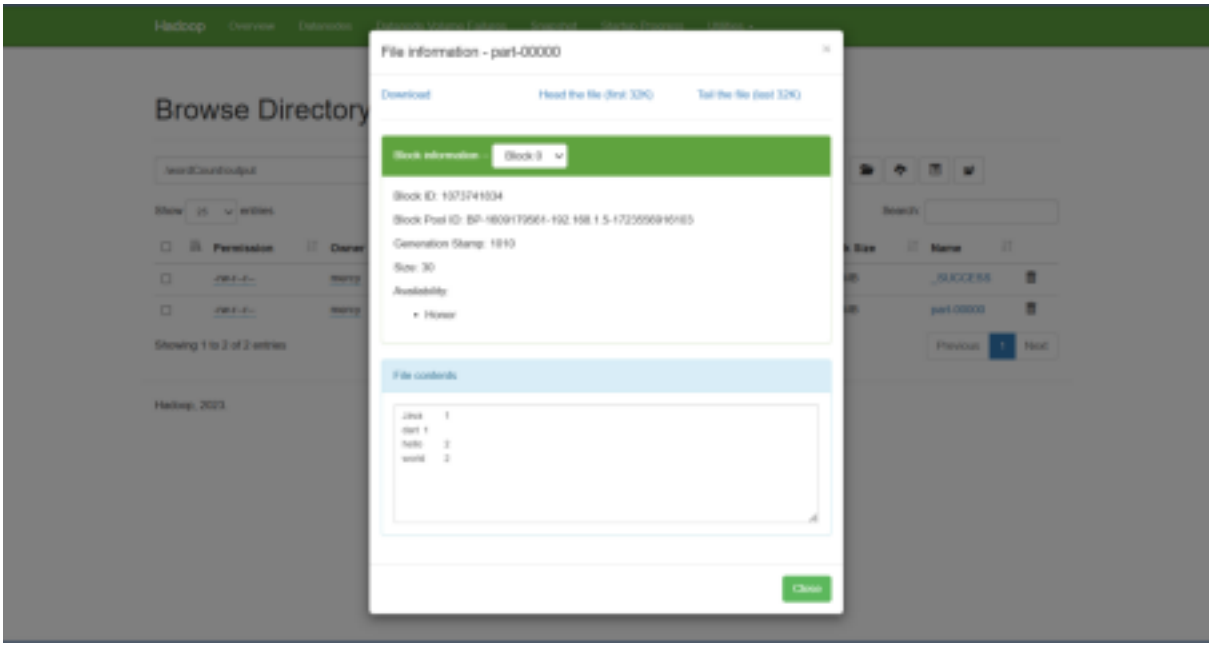
REDUCER.PY

```
#!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:


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 mercy supergroup 0 B Aug 19 09:01 0 0 B tmp
drwxr-xr-x mercy supergroup 0 B Aug 18 21:18 0 0 B weather
drwxr-xr-x mercy supergroup 0 B Aug 13 19:41 0 0 B wordCount
Showing 1 to 3 of 3 entries
Previous
1
Next


Hadoop
Overview
Datanodes
Datanode Volume Failures
Snapshot
Startup Progress
Utilities
Browse Directory
/wordCount
Go!
Show 25 entries
Search:
Permission
Owner
Group
Size
Last Modified
Replication
Block Size
Name
-rw-r--r-- mercy supergroup 37 B Aug 13 19:22 1 128 MB input.txt
drwxr-xr-x mercy supergroup 0 B Aug 13 19:41 0 0 B output
Showing 1 to 2 of 2 entries
Previous
1
Next
Hadoop, 2023.



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.