EXP 2 210701249

Run a basic Word Count Map Reduce program to understand MapReduce Paradigm.

Aim:

To run a basic Word Count MapReduce program.

Procedure:

Step1:CreateDataFile:

Create a file named "word_count_data.txt" and populate it with text data that you wish toanalyse.
Loginwith yourhadoop user.

nanoword_count.txt

Output: Typethebelowcontent in word_count.txt

Step2:MapperLogic - mapper.py:

Create a file named "mapper.py" to implement the logic for the mapper. The mapperwillreadinputdatafrom STDIN,splitlinesintowords,andoutputeachwordwithitscount.

```
nanomapper.py
#Copyand pastethemapper.pycode
```

```
#!/usr/bin/envpython3
# import sys because we need to read and write data to STDIN and
STDOUT#!/usr/bin/python3
importsys
forlinein sys.stdin:
    line=line.strip()      # remove leading and trailing
    whitespacewords= line.split()#split thelineinto words
    forwordinwords:
```

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

.

Step3:ReducerLogic-reducer.py:

Create a file named "reducer.py" to implement the logic for the reducer. The reducerwillaggregate theoccurrences of each word and generatethe final output.

```
nanoreducer.py

#Copyand pastethereducer.pycode
```

reducer.py

```
#!/usr/bin/python3
from operator import
itemgetterimport sys
current_word =
Nonecurrent_count =
0word=None
for line in
    sys.stdin:line=lin
    e.strip()
    word, count = line.split('\t',
    1)try:
        count =
    int(count)exceptVal
    ueError:
        continue
    if current_word ==
        word:current_count+=cou
        nt
    else:
        ifcurrent_word:
            print( '%s\t%s' % (current_word,
        current_count))current_count= count
        current_word =
wordifcurrent_word==wo
rd:
    print('%s\t%s'%(current_word,current_count))
```

Step4:PrepareHadoopEnvironment:

StarttheHadoop daemonsand createadirectory inHDFS tostoreyourdata.

```
start-all.sh
hdfsdfs-mkdir/word_count_in_python
hdfsdfs-copyFromLocal/path/to/word_count.txt/word_count_in_python
```

Step6:MakePythonFilesExecutable:

Giveexecutablepermissionstoyourmapper.py andreducer.pyfiles.

```
chmod777mapper.pyreducer.py
```

Step7:RunWordCountusingHadoopStreaming:

Downloadthelatest hadoop-streamingjarfileandplaceit inalocation youcaneasily
access.

ThenruntheWordCountprogramusingHadoopStreaming.

```
hadoopjar/path/to/hadoop-streaming-3.3.6.jar\
    -input/word_count_in_python/word_count_data.txt\
    -output/word_count_in_python/new_output \
    -mapper/path/to/mapper.py\
    -reducer/path/to/reducer.py
```

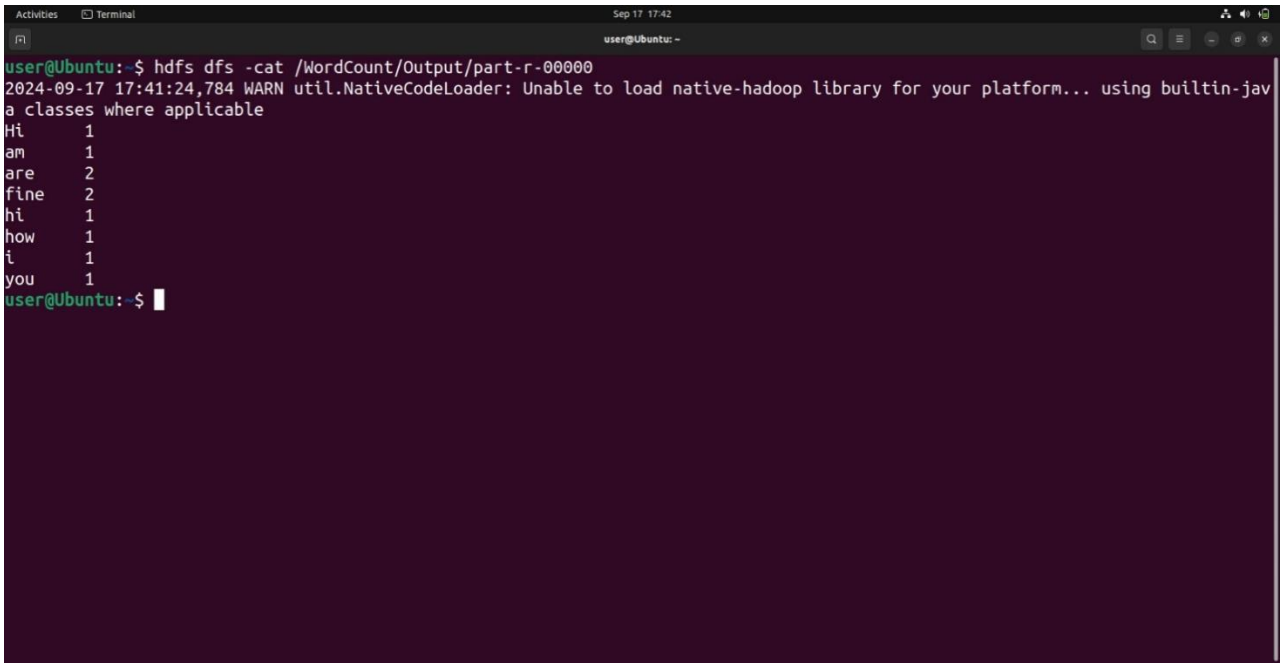
Step8:CheckOutput:

Check the output of the Word Count program in the specified HDFS

output directory

.hdfsdfs-cat /word_count_in_python/new_output/part-00000

OUTPUT:



Result:

Thus, the program for basic Word Count Map Reduce has been executed successfully.