Expt-2

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

AIM:

To run a basic Word Count MapReduce program using Hadoop.

PROCEDURE:

1. **Create Data File**:

   ```
   nano word_count_data.txt
   ```

   Example content for word_count_data.txt:

   Hadoop is a framework that allows for distributed processing of large data sets.

2. **Mapper Program (mapper.py)**:

   ```
   import sys
   for line in sys.stdin:
       line = line.strip()
       words = line.split()
       for word in words:
           print(f'{word}\t1')
   ```

3. **Reducer Program (reducer.py)**:

   ```
   import sys
   current_word = None
   current_count = 0
   word = None

   for line in sys.stdin:
       line = line.strip()
       word, count = line.split('\t', 1)

       try:
           count = int(count)
       except ValueError:
           continue
   ```

```
    if current_word == word:
        current_count += count
    else:
        if current_word:
            print(f'{current_word}\t{current_count}')
        current_count = count
        current_word = word


if current_word == word:
    print(f'{current_word}\t{current_count}')
```

4. **Set Hadoop Environment**:

```
hdfs dfs -mkdir /word_count_input
hdfs dfs -copyFromLocal word_count_data.txt /word_count_input
```

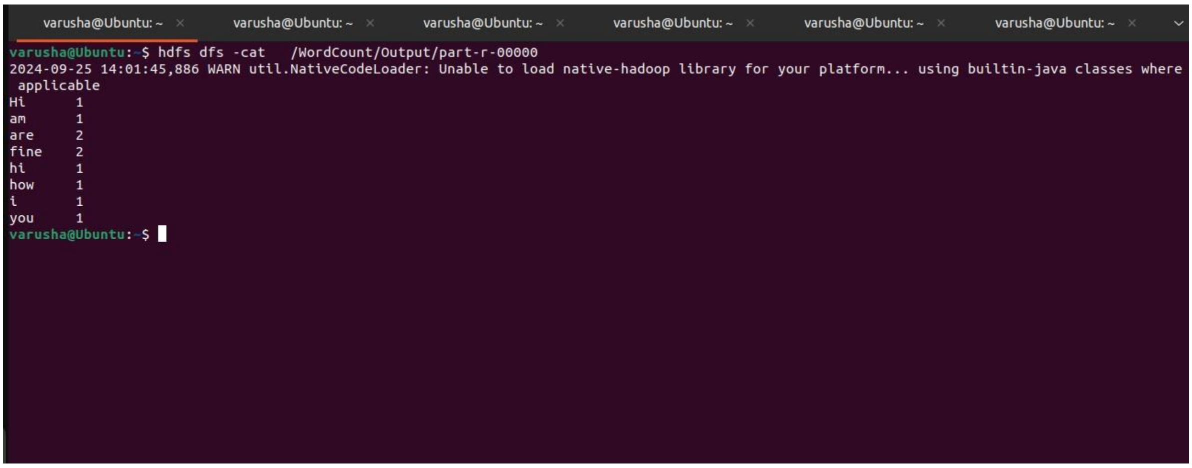
5. **Run Word Count Program**:

```
hadoop jar $HADOOP_HOME/share/hadoop/tools/lib/hadoop-streaming-*.jar \
-input /word_count_input/word_count_data.txt \
-output /word_count_output \
-mapper mapper.py \
-reducer reducer.py
```

6. **Check Output**:

```
hdfs dfs -cat /word_count_output/part-00000
```

OUTPUT:



```
varusha@Ubuntu:~$ hdfs dfs -cat   /WordCount/Output/part-r-00000
2024-09-25 14:01:45,886 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where
 applicable
Hi      1
am      1
are     2
fine    2
hi      1
how     1
i       1
you     1
varusha@Ubuntu:~$ 
```

RESULT:

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