

Lab 4

Execution of HDFS Commands for interaction with Hadoop Environment. (Minimum 10 commands to be executed)

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Activities Terminal Apr 15 15:09 hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses

hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: $ start-all sh
start-all: command not found
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: $ start-all sh
Command 'start' not found, did you mean:
  command 'stars' from snap stars (2.7jrc3)
  command 'start' from deb start (3.10-1build1)
  command 'restart' from deb x11-session-utils (7.7+4build2)
  command 'starts' from deb xinit (1.4.1-0ubuntu4)
  command 'ksstart' from deb kde-clip-tools (4:15.24.4-0ubuntu1)
  command 'start' from deb coreutils (8.32-4.1ubuntu1.2)
See 'snap info <snapname>' for additional versions.
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: $ start-all sh
WARNING: Attempting to start all Apache Hadoop daemons as hadoop in 10 seconds.
WARNING: Use CTRL-C to abort.
Starting namenodes on [localhost]
Starting datanodes
Starting secondary namenodes [bmscscse-HP-Elite-Tower-600-G9-Desktop-PC]
Starting resourceananager
Starting nodemanagers
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: $ jps
15632 NameNode
16595 NodeManager
15830 DataNode
17835 Jps
16125 SecondaryNameNode
16413 ResourceManager
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: $ su - hduser
su: user hduser does not exist or the user entry does not contain all the required fields
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: $ cd ~/Desktop
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ nano file1.txt
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ hadoop fs -ls /
Found 4 items
drwxr-xr-x - hadoop supergroup 0 2024-05-14 15:15 /FF
drwxr-xr-x - hadoop supergroup 0 2024-05-14 14:58 /FFF
drwxr-xr-x - hadoop supergroup 0 2023-09-07 12:26 /output
drwxr-xr-x - hadoop supergroup 0 2023-09-07 12:24 /rgs
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ hadoop fs -mkdir /rgs
mkdir: /rgs: File exists
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ hadoop fs -copyFromLocal /home/hadoop/Desktop/file1.txt /rgs/test.txt
copyFromLocal: /rgs/test.txt: File exists
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ hadoop fs -rm /rgs/test.txt
Deleted /rgs/test.txt
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ hadoop fs -copyFromLocal /home/hadoop/Desktop/file1.txt /rgs/test.txt
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ hadoop jar /home/hadoop/Desktop/WordCount.jar wordcount.WordCount /rgs/test.txt/output
JAR does not exist or is not a normal file: /home/hadoop/Desktop/WordCount.jar
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ ls -l /home/hadoop/Desktop/WordCount.jar
ls: cannot access '/home/hadoop/Desktop/WordCount.jar': No such file or directory
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ cd ~/WordCountProject/src/wordcount
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountProject/src/wordcount $ nano WordCount.java
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountProject/src/wordcount $ javac -classpath hadoop classpath -d ~/WordCountClasses ~/WordCountProject/src/wordcount/WordCount.java
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountProject/src/wordcount $ cd ~/WordCountClasses
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses $
```

```
Activities Terminal Apr 15 15:10 hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses

ls: cannot access '/home/hadoop/Desktop/WordCount.jar': No such file or directory
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ mkdir -p ~/WordCountProject/src/wordcount
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/Desktop $ cd ~/WordCountProject/src/wordcount
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountProject/src/wordcount $ nano WordCount.java
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountProject/src/wordcount $ mkdir -p ~/WordCountClasses
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountProject/src/wordcount $ javac -classpath hadoop classpath -d ~/WordCountClasses ~/WordCountProject/src/wordcount/WordCount.java
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountProject/src/wordcount $ cd ~/WordCountClasses
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses $ jar -cvf ~/Desktop/WordCount.jar wordcount
added manifest
adding: wordcount/(in = 0) (out= 0)(stored 0%)
adding: wordcount/WordCount.class (in = 1541) (out= 836)(deflated 45%)
adding: wordcount/WordCount$TokenMapper.class (in = 1821) (out= 797)(deflated 56%)
adding: wordcount/WordCount$IntSumReducer.class (in = 1775) (out= 756)(deflated 57%)
2025-04-15 14:45:14.514 INFO Impl.MetricsSystemImpl: JobTracker metrics system started
2025-04-15 14:45:14.550 INFO Impl.MetricsSystemImpl: Scheduled Metric snapshot period at 10 second(s).
Exception in thread "main" org.apache.hadoop.mapred.FileAlreadyExistsException: Output directory hdfs://localhost:9000/output already exists
    at org.apache.hadoop.mapreduce.lib.output.FileOutputFormat.checkOutputSpecs(FileOutputFormat.java:164)
    at org.apache.hadoop.mapreduce.JobSubmitter.checkSpecs(JobSubmitter.java:277)
    at org.apache.hadoop.mapreduce.JobSubmitter.submitJobInternal(JobSubmitter.java:143)
    at org.apache.hadoop.mapreduce.Job$11.run(Job.java:1568)
    at java.base/java.security.AccessController.doPrivileged(Native Method)
    at java.base/java.security.auth.Subject.doAs(Subject.java:423)
    at org.apache.hadoop.security.UserGroupInformation.doAs(UserGroupInformation.java:1878)
    at org.apache.hadoop.mapreduce.Job.submit(Job.java:1568)
    at org.apache.hadoop.mapreduce.Job.waitForCompletion(Job.java:1589)
    at wordcount.WordCount.main(WordCount.java:45)
    at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(Native Method)
    at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(Native Method)
    at java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.base/java.lang.reflect.Method.invoke(Method.java:566)
    at org.apache.hadoop.util.RunJar.run(RunJar.java:323)
    at org.apache.hadoop.util.RunJar.main(RunJar.java:236)
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses $ hadoop fs -rm -r /output
Deleted /output
hadoop@bmscscse-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses $ hadoop jar ~/Desktop/WordCount.jar wordcount.WordCount /rgs/test.txt /output
2025-04-15 14:46:26.905 INFO Impl.MetricsConfig: Loaded properties from hadoop-metrics2.properties
2025-04-15 14:46:26.941 INFO Impl.MetricsSystemImpl: Scheduled Metric snapshot period at 10 second(s).
2025-04-15 14:46:26.942 INFO Impl.MetricsSystemImpl: JobTracker metrics system started
2025-04-15 14:46:26.996 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the Tool interface and execute your application with ToolRunner to remedy this.
2025-04-15 14:46:27.028 INFO Input.FileInputFormat: Total input files to process : 1
2025-04-15 14:46:27.073 INFO mapreduce.JobSubmitter: number of splits:1
2025-04-15 14:46:27.126 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_local1212755788_0001
2025-04-15 14:46:27.126 INFO mapreduce.JobSubmitter: Executing with tokens: []
2025-04-15 14:46:27.179 INFO mapreduce.Job: The url to track the job: http://localhost:8080/
2025-04-15 14:46:27.179 INFO mapreduce.Job: Running Job: job_local1212755788_0001
2025-04-15 14:46:27.180 INFO mapreduce.LocalJobRunner: OutputCommitter set in config null
2025-04-15 14:46:27.186 INFO output.FileOutputCommitter: File Output Committer Algorithm version is 2
2025-04-15 14:46:27.186 INFO output.FileOutputCommitter: skip cleanup temporary folders under output directory:false, ignore cleanup failures: false
2025-04-15 14:46:27.187 INFO mapreduce.LocalJobRunner: OutputCommitter is org.apache.hadoop.mapreduce.lib.output.FileOutputCommitter
2025-04-15 14:46:27.227 INFO mapreduce.LocalJobRunner: Waiting for map tasks
2025-04-15 14:46:27.227 INFO mapreduce.LocalJobRunner: Starting task: attempt_local1212755788_0001_n_000000_0
2025-04-15 14:46:27.237 INFO output.FileOutputCommitter: File Output Committer Algorithm version is 2
2025-04-15 14:46:27.242 INFO output.FileOutputCommitter: skip cleanup temporary folders under output directory:false, ignore cleanup failures: false
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Activities Terminal Apr 15 15:10 hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses

2025-04-15 14:46:27,333 INFO mapred.Task: Task 'attempt_local1212755788_0001_m_000000_0' done.
2025-04-15 14:46:27,333 INFO mapred.Task: Final Counters for attempt_local1212755788_0001_m_000000_0: Counters: 24
File System Counters
  FILE: Number of bytes read=3484
  FILE: Number of bytes written=643788
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0
  HDFS: Number of bytes read=89
  HDFS: Number of bytes written=0
  HDFS: Number of read operations=5
  HDFS: Number of large read operations=0
  HDFS: Number of write operations=1
  HDFS: Number of bytes read erasure-coded=0
Map-Reduce Framework
  Map input records=5
  Map output records=20
  Map output bytes=169
  Map output materialized bytes=115
  Input split bytes=89
  Combine input records=20
  Combine output records=10
  Spilled Records=10
  Failed Shuffles=0
  Merged Map outputs=0
  GC time elapsed (ms)=0
  Total committed heap usage (bytes)=526385152
File Input Format Counters
  Bytes Read=89
2025-04-15 14:46:27,333 INFO mapred.LocalJobRunner: Finishing task: attempt_local1212755788_0001_m_000000_0
2025-04-15 14:46:27,340 INFO mapred.LocalJobRunner: map task executor complete.
2025-04-15 14:46:27,336 INFO mapred.LocalJobRunner: waiting for reduce tasks
2025-04-15 14:46:27,339 INFO mapred.LocalJobRunner: Starting task: attempt_local1212755788_0001_r_000000_0
2025-04-15 14:46:27,339 INFO output.FileOutputCommitter: File Output Committer Algorithm version is 2
2025-04-15 14:46:27,339 INFO output.FileOutputCommitter: FileOutputCommitter skip cleanup _temporary folders under output directory:false, ignore cleanup failures: false
2025-04-15 14:46:27,340 INFO mapred.ReduceTask: Using ReduceCalculatorProcessTree: [ ]
2025-04-15 14:46:27,340 INFO mapred.ReduceTask: Using ShuffleConsumerPlugin: org.apache.hadoop.mapreduce.task.reduce.Shuffle40c31898
2025-04-15 14:46:27,341 WARN ImplMetricsSystemImpl: JobTracker metrics system already initialized!
2025-04-15 14:46:27,340 INFO reduce.MergeManagerImpl: MergeManager: memoryLimit=887901408, maxSingleShuffleLimit=1456996352, mergeThreshold=1846476400, ioSortFactor=10, memToMemMergeOutputsThreshold=10
2025-04-15 14:46:27,349 INFO reduce.EventFetcher: attempt_local1212755788_0001_r_000000_0 Thread started: EventFetcher for fetching Map completion Events
2025-04-15 14:46:27,361 INFO reduce.LocalFetcher: LocalFetcher: About to shuffle output of map attempt_local1212755788_0001_m_000000_0 decom: 111 len: 115 to MEMORY
2025-04-15 14:46:27,362 INFO reduce.InMemoryMapOutput: Read 111 bytes from map-output for attempt_local1212755788_0001_m_000000_0
2025-04-15 14:46:27,363 INFO reduce.MergeManagerImpl: closeInMemoryFile -> map-output of size: 111, inMemoryMapOutputs.size() -> 1, commMemory -> 0, useMemory -> 111
2025-04-15 14:46:27,363 INFO reduce.EventFetcher: EventFetcher is interrupted.. Returning
2025-04-15 14:46:27,364 INFO mapred.LocalJobRunner: 1 / 1 copied.
2025-04-15 14:46:27,364 INFO reduce.MergeManagerImpl: finalMerge called with 1 in-memory map-outputs and 0 on-disk map-outputs
2025-04-15 14:46:27,366 INFO mapred.Merger: Merging 1 sorted segments
2025-04-15 14:46:27,366 INFO mapred.Merger: Down to the last merge-pass, with 1 segments left of total size: 105 bytes
2025-04-15 14:46:27,367 INFO reduce.MergeManagerImpl: Merged 1 segments, 111 bytes to disk to satisfy reduce memory limit
2025-04-15 14:46:27,367 INFO reduce.MergeManagerImpl: Merging 1 files, 115 bytes from disk
2025-04-15 14:46:27,367 INFO reduce.MergeManagerImpl: Merging 0 segments, 0 bytes from memory into reduce
2025-04-15 14:46:27,367 INFO mapred.Merger: Merging 1 sorted segments
2025-04-15 14:46:27,367 INFO mapred.Merger: Down to the last merge-pass, with 1 segments left of total size: 105 bytes
2025-04-15 14:46:27,368 INFO mapred.LocalJobRunner: 1 / 1 copied.
2025-04-15 14:46:27,369 INFO mapred.LocalJobRunner: Task attempt_local1212755788_0001_r_000000_0 is done. And is in the process of committing
2025-04-15 14:46:27,369 INFO mapred.Task: Task attempt_local1212755788_0001_r_000000_0 is done. And is in the process of committing
```

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Activities Terminal Apr 15 15:10 hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses

Deleted /output
hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses$ hadoop jar -/Desktop/WordCount.jar wordcount.WordCount /rgs/test.txt /output
2025-04-15 14:46:26,905 INFO ImplMetricsConfig: Loaded properties from hadoop-metrics2.properties
2025-04-15 14:46:26,941 INFO ImplMetricsSystemImpl: Scheduled Metric Snapshot period at 10 second(s).
2025-04-15 14:46:26,942 INFO ImplMetricsSystemImpl: JobTracker metrics system started
2025-04-15 14:46:26,996 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the Tool Interface and execute your application with ToolRunner to remedy this.
2025-04-15 14:46:27,073 INFO mapreduce.JobSubmitter: number of splits:1
2025-04-15 14:46:27,126 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_local1212755788_0001
2025-04-15 14:46:27,126 INFO mapreduce.JobSubmitter: Executing with tokens:1
2025-04-15 14:46:27,179 INFO mapreduce.Job: The url to track the job: http://localhost:8080/
2025-04-15 14:46:27,180 INFO mapred.LocalJobRunner: OutputCommitter set in config null
2025-04-15 14:46:27,186 INFO output.FileOutputCommitter: File Output Committer Algorithm version is 2
2025-04-15 14:46:27,186 INFO output.FileOutputCommitter: FileOutputCommitter skip cleanup _temporary folders under output directory:false, ignore cleanup failures: false
2025-04-15 14:46:27,187 INFO mapred.LocalJobRunner: OutputCommitter is org.apache.hadoop.mapreduce.lib.output.FileOutputCommitter
2025-04-15 14:46:27,227 INFO mapred.LocalJobRunner: Waiting for map tasks
2025-04-15 14:46:27,227 INFO mapred.LocalJobRunner: Starting task: attempt_local1212755788_0001_m_000000_0
2025-04-15 14:46:27,237 INFO output.FileOutputCommitter: FileOutputCommitter skip cleanup _temporary folders under output directory:false, ignore cleanup failures: false
2025-04-15 14:46:27,237 INFO output.FileOutputCommitter: FileOutputCommitter Algorithm version is 2
2025-04-15 14:46:27,244 INFO mapred.Task: Using ResourceCalculatorProcessTree: [ ]
2025-04-15 14:46:27,246 INFO mapred.MapTask: Processing split: hdfs://localhost:9000/rgs/test.txt:0+89
2025-04-15 14:46:27,277 INFO mapred.MapTask: (EQUATOR) 0 kv: 26214396(104857584)
2025-04-15 14:46:27,277 INFO mapred.MapTask: mapreduce.task.io.sort.mb: 100
2025-04-15 14:46:27,277 INFO mapred.MapTask: soft limit at 83886080
2025-04-15 14:46:27,277 INFO mapred.MapTask: bufstart = 0, bufvoid = 104857600
2025-04-15 14:46:27,277 INFO mapred.MapTask: kvstart = 26214396, length = 6553600
2025-04-15 14:46:27,279 INFO mapred.MapTask: Map output collector class = org.apache.hadoop.mapred.MapTask$MapOutputBuffer
2025-04-15 14:46:27,319 INFO mapred.LocalJobRunner:
2025-04-15 14:46:27,320 INFO mapred.MapTask: Starting flush of map output
2025-04-15 14:46:27,320 INFO mapred.MapTask: Spilling map output
2025-04-15 14:46:27,320 INFO mapred.MapTask: bufstart = 0, bufvoid = 104857600
2025-04-15 14:46:27,320 INFO mapred.MapTask: kvstart = 26214396(104857584); kvend = 26214320(104857280); length = 77/6553600
2025-04-15 14:46:27,325 INFO mapred.MapTask: Finished spill
2025-04-15 14:46:27,329 INFO mapred.Task: Task attempt_local1212755788_0001_m_000000_0 is done. And is in the process of committing
2025-04-15 14:46:27,331 INFO mapred.LocalJobRunner: map
2025-04-15 14:46:27,331 INFO mapred.Task: Task attempt_local1212755788_0001_m_000000_0 done.
2025-04-15 14:46:27,333 INFO mapred.Task: Final Counters for attempt_local1212755788_0001_m_000000_0: Counters: 24
File System Counters
  FILE: Number of bytes read=3484
  FILE: Number of bytes written=643788
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0
  HDFS: Number of bytes read=89
  HDFS: Number of bytes written=0
  HDFS: Number of read operations=5
  HDFS: Number of large read operations=0
  HDFS: Number of write operations=1
  HDFS: Number of bytes read erasure-coded=0
Map-Reduce Framework
  Map input records=5
  Map output records=20
  Map output bytes=169
  Map output materialized bytes=115
  Input split bytes=89
  Combine input records=20
  Combine output records=10
  Spilled Records=10
  Failed Shuffles=0
  Merged Map outputs=0
  GC time elapsed (ms)=0
  Total committed heap usage (bytes)=1052778304
File Input Format Counters
  Bytes Read=89
File Output Format Counters
  Bytes Written=0
hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses$ hadoop fs -cat /output/part-00000
cat: '/output/part-00000': No such file or directory
hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses$ hadoop fs -ls /output
Found 2 items
-rw-r--r-- 1 hadoop supergroup 0 2025-04-15 14:46 /output/SUCCESS
-rw-r--r-- 1 hadoop supergroup 0 2025-04-15 14:46 /output/part-r-00000
hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses$ hadoop fs -cat /output/part-r-00000
are 1
```

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Activities Terminal Apr 15 15:11 hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses

2025-04-15 14:46:27,447 INFO mapred.LocalJobRunner: Finishing task: attempt_local1212755788_0001_r_000000_0
2025-04-15 14:46:27,447 INFO mapred.LocalJobRunner: reduce task executor complete.
2025-04-15 14:46:28,182 INFO mapreduce.Job: Job job_local1212755788_0001 running in user mode : false
2025-04-15 14:46:28,182 INFO mapreduce.Job: Job job_local1212755788_0001 running in user mode : false
2025-04-15 14:46:28,183 INFO mapreduce.Job: Job job_local1212755788_0001 completed successfully
2025-04-15 14:46:28,185 INFO mapreduce.Job: Counters: 36
File System Counters
  FILE: Number of bytes read=7230
  FILE: Number of bytes written=1287091
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0
  HDFS: Number of bytes read=178
  HDFS: Number of bytes written=89
  HDFS: Number of read operations=15
  HDFS: Number of large read operations=0
  HDFS: Number of write operations=4
  HDFS: Number of bytes read erasure-coded=0
Map-Reduce Framework
  Map input records=5
  Map output records=20
  Map output bytes=169
  Map output materialized bytes=115
  Input split bytes=89
  Combine input records=20
  Reduce input groups=10
  Reduce shuffle bytes=115
  Reduce input records=10
  Reduce output records=10
  Spilled Records=20
  Shuffled Maps=1
  Failed Shuffles=0
  Merged Map outputs=1
  GC time elapsed (ms)=0
  Total committed heap usage (bytes)=1052778304
File Input Format Counters
  Bytes Read=89
File Output Format Counters
  Bytes Written=0
hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses$ hadoop fs -cat /output/part-00000
cat: '/output/part-00000': No such file or directory
hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses$ hadoop fs -ls /output
Found 2 items
-rw-r--r-- 1 hadoop supergroup 0 2025-04-15 14:46 /output/SUCCESS
-rw-r--r-- 1 hadoop supergroup 0 2025-04-15 14:46 /output/part-r-00000
hadoop@bmsccee-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses$ hadoop fs -cat /output/part-r-00000
are 1
```

```
Activities Terminal Apr 15 15:11 hadoop@bmsciece-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses

FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=178
HDFS: Number of bytes written=69
HDFS: Number of read operations=15
HDFS: Number of large read operations=0
HDFS: Number of write operations=4
HDFS: Number of bytes read erasure-coded=0
Map-Reduce Framework
  Map Input records=5
  Map output records=20
  Map output bytes=169
  Map output materialized bytes=115
  Input split bytes=99
  Combine input records=20
  Combine output records=10
  Reduce input groups=10
  Reduce shuffle bytes=115
  Reduce input records=10
  Reduce output records=10
  Spilled Records=20
  Shuffled Maps =1
  Failed Shuffles=0
  Merged Map outputs=1
  GC time elapsed (ms)=0
  Total committed heap usage (bytes)=1052770304
Shuffle Errors
  BAD_ID=0
  CONNECTION=0
  IO_ERROR=0
  WRONG_LENGTH=0
  WRONG_MAP=0
  WRONG_REDUCE=0
File Input Format Counters
  Bytes Read=0
File Output Format Counters
  Bytes Written=69
hadoop@bmsciece-HP-Elite-Tower-600-G9-Desktop-PC:~/WordCountClasses$ hadoop fs -cat /output/part-00000
cat: /output/part-00000: No such file or directory
hadoop@bmsciece-HP-Elite-Tower-600-G9-Desktop-PC:~/WordCountClasses$ hadoop fs -ls /output
Found 2 items
-rw-r--r-- 1 hadoop supergroup 0 2025-04-15 14:46 /output/_SUCCESS
-rw-r--r-- 1 hadoop supergroup 69 2025-04-15 14:46 /output/part-r-00000
hadoop@bmsciece-HP-Elite-Tower-600-G9-Desktop-PC:~/WordCountClasses$ hadoop fs -cat /output/part-r-00000
are 1
brother 1
family 1
hi 1
how 5
is 4
job 1
sister 1
you 1
your 4
hadoop@bmsciece-HP-Elite-Tower-600-G9-Desktop-PC:~/WordCountClasses$
```

```
Activities Terminal Apr 15 15:11 hadoop@bmsciece-HP-Elite-Tower-600-G9-Desktop-PC: ~/WordCountClasses

2025-04-15 14:46:27,367 INFO reduce.MergeManagerImpl: Merged 1 segments, 111 bytes to disk to satisfy reduce memory limit
2025-04-15 14:46:27,367 INFO reduce.MergeManagerImpl: Merging 1 files, 115 bytes from disk
2025-04-15 14:46:27,367 INFO reduce.MergeManagerImpl: Merging 0 segments, 0 bytes from memory into reduce
2025-04-15 14:46:27,367 INFO mapred.Merger: Merging 1 sorted segments
2025-04-15 14:46:27,367 INFO mapred.Merger: Down to the last merge-pass, with 1 segments left of total size: 105 bytes
2025-04-15 14:46:27,368 INFO mapred.LocalJobRunner: 1 / 1 copied
2025-04-15 14:46:27,393 INFO Configuration.deprecation: mapred.skip.on is deprecated. Instead, use mapreduce.job.skiprecords
2025-04-15 14:46:27,430 INFO mapred.Task: Task:attempt_local1212755788_0001_r_000000_0 is done. And is in the process of committing
2025-04-15 14:46:27,432 INFO mapred.LocalJobRunner: 1 / 1 copied
2025-04-15 14:46:27,432 INFO mapred.Task: Task attempt_local1212755788_0001_r_000000_0 is allowed to commit now
2025-04-15 14:46:27,446 INFO output.PipelineCommitter: Saved output of task 'attempt_local1212755788_0001_r_000000_0' to hdfs://localhost:9000/output
2025-04-15 14:46:27,447 INFO mapred.LocalJobRunner: reduce > reduce
2025-04-15 14:46:27,447 INFO mapred.Task: Task 'attempt_local1212755788_0001_r_000000_0' done.
2025-04-15 14:46:27,447 INFO mapred.Task: Final Counters for attempt_local1212755788_0001_r_000000_0: Counters: 30
File System Counters
  FILE: Number of bytes read=3746
  FILE: Number of bytes written=642003
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0
  HDFS: Number of bytes read=489
  HDFS: Number of bytes written=69
  HDFS: Number of read operations=10
  HDFS: Number of large read operations=0
  HDFS: Number of write operations=3
  HDFS: Number of bytes read erasure-coded=0
Map-Reduce Framework
  Combine input records=0
  Combine output records=0
  Reduce input groups=10
  Reduce shuffle bytes=115
  Reduce input records=10
  Reduce output records=10
  Spilled Records=10
  Shuffled Maps =1
  Failed Shuffles=0
  Merged Map outputs=1
  GC time elapsed (ms)=0
  Total committed heap usage (bytes)=526385152
Shuffle Errors
  BAD_ID=0
  CONNECTION=0
  IO_ERROR=0
  WRONG_LENGTH=0
  WRONG_MAP=0
  WRONG_REDUCE=0
File Output Format Counters
  Bytes Written=69
2025-04-15 14:46:27,447 INFO mapred.LocalJobRunner: Finishing task: attempt_local1212755788_0001_r_000000_0
2025-04-15 14:46:27,447 INFO mapred.LocalJobRunner: reduce task executor complete.
2025-04-15 14:46:28,182 INFO mapreduce.Job: Job job_local1212755788_0001 running in uber mode : false
2025-04-15 14:46:28,182 INFO mapreduce.Job: map 100% reduce 100%
2025-04-15 14:46:28,183 INFO mapreduce.Job: Job job_local1212755788_0001 completed successfully
2025-04-15 14:46:28,186 INFO mapreduce.Job: Counters: 30
File System Counters
  FILE: Number of bytes read=2210
```