

# Assignment Day 3

## Task 1:

Execute WordMedian , WordMean , WordStandardDeviation programs using hadoop-mapreduce-examples-2.9.0.jar file present in your AcadGild VM.

## Ans:

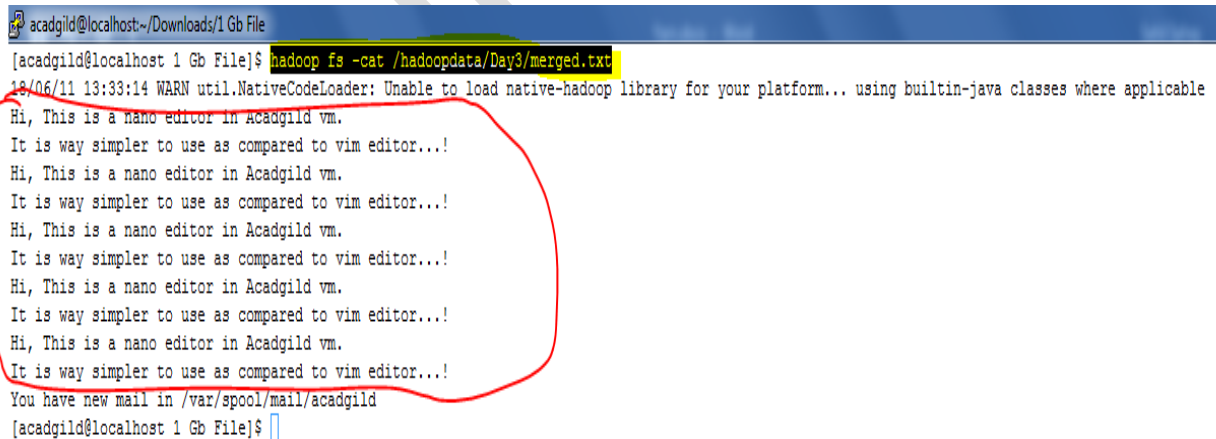
Input file contents(**Normal + 1GB FILE at Page 7**) before running each of above commands:

**hadoop fs -cat /hadoopdata/Day3/merged.txt**

(Displays the complete content of the file passed onto terminal)

## ScreenShot(s):

### Input File(Normal File):



```
acadgild@localhost:~/Downloads/1 Gb File
[acadgild@localhost 1 Gb File]$ hadoop fs -cat /hadoopdata/Day3/merged.txt
18/06/11 13:33:14 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Hi, This is a nano editor in Acadgild vm.
It is way simpler to use as compared to vim editor...!
Hi, This is a nano editor in Acadgild vm.
It is way simpler to use as compared to vim editor...!
Hi, This is a nano editor in Acadgild vm.
It is way simpler to use as compared to vim editor...!
Hi, This is a nano editor in Acadgild vm.
It is way simpler to use as compared to vim editor...!
Hi, This is a nano editor in Acadgild vm.
It is way simpler to use as compared to vim editor...!
Hi, This is a nano editor in Acadgild vm.
It is way simpler to use as compared to vim editor...!
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost 1 Gb File]$
```

# 1: WordMedian

**hadoop jar** hadoop-mapreduce-examples-2.6.5.jar **wordmedian**  
/hadoopdata/Day3/merged.txt  
/hadoopdata/hdfs/out/Day3\_out/Median

(A map/reduce program that counts the median length of the words in the input file(s).)

```
acadmild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
[acadmild@localhost mapreduce]$ ls
hadoop-mapreduce-client-app-2.6.5.jar      hadoop-mapreduce-client-hs-2.6.5.jar      hadoop-mapreduce-client-jobclient-2.6.5-tests.jar  lib
hadoop-mapreduce-client-common-2.6.5.jar  hadoop-mapreduce-client-hs-plugins-2.6.5.jar  hadoop-mapreduce-client-shuffle-2.6.5.jar          lib-examples
hadoop-mapreduce-client-core-2.6.5.jar    hadoop-mapreduce-client-jobclient-2.6.5.jar  hadoop-mapreduce-examples-2.6.5.jar              sources
[acadmild@localhost mapreduce]$ hadoop jar hadoop-mapreduce-examples-2.6.5.jar wordmedian /hadoopdata/Day3/merged.txt /hadoopdata/hdfs/out/Day3_out/Median
18/06/11 13:55:49 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/06/11 13:55:51 INFO client.RMProxy: Connecting to ResourceManager at localhost:127.0.0.1:8032
18/06/11 13:55:52 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the Tool interface and execute your application with T
oolRunner to remedy this.
18/06/11 13:55:53 INFO input.FileInputFormat: Total input paths to process : 1
18/06/11 13:55:53 INFO mapreduce.JobSubmitter: number of splits:1
18/06/11 13:55:54 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1528696653859_0001
18/06/11 13:55:55 INFO impl.YarnClientImpl: Submitted application application_1528696653859_0001
18/06/11 13:55:55 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/application_1528696653859_0001/
18/06/11 13:55:55 INFO mapreduce.Job: Running job: job_1528696653859_0001
18/06/11 13:56:13 INFO mapreduce.Job: Job job_1528696653859_0001 running in uber mode : false
18/06/11 13:56:13 INFO mapreduce.Job:  map 0% reduce 0%
18/06/11 13:56:26 INFO mapreduce.Job:  map 100% reduce 0%
18/06/11 13:56:44 INFO mapreduce.Job:  map 100% reduce 100%
18/06/11 13:56:45 INFO mapreduce.Job: Job job_1528696653859_0001 completed successfully
18/06/11 13:56:45 INFO mapreduce.Job: Counters: 49
    File System Counters
        FILE: Number of bytes read=86
        FILE: Number of bytes written=215303
        FILE: Number of read operations=0
        FILE: Number of large read operations=0
        FILE: Number of write operations=0
        HDFS: Number of bytes read=598
        HDFS: Number of bytes written=37
        HDFS: Number of read operations=6
        HDFS: Number of large read operations=0
        HDFS: Number of write operations=2
    Job Counters
        Launched map tasks=1
        Launched reduce tasks=1
        Data-local map tasks=1
        Total time spent by all maps in occupied slots (ms)=10881
        Total time spent by all reduces in occupied slots (ms)=14427
        Total time spent by all map tasks (ms)=10881
        Total time spent by all reduce tasks (ms)=14427
        Total vcore-milliseconds taken by all map tasks=10881
        Total vcore-milliseconds taken by all reduce tasks=14427
        Total megabyte-milliseconds taken by all map tasks=11142144
        Total megabyte-milliseconds taken by all reduce tasks=14773248
```

## Output:

```
acadgild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce$
Total megabyte-milliseconds taken by all map tasks=11142144
Total megabyte-milliseconds taken by all reduce tasks=14773248
Map-Reduce Framework
  Map input records=10
  Map output records=100
  Map output bytes=800
  Map output materialized bytes=86
  Input split bytes=113
  Combine input records=100
  Combine output records=8
  Reduce input groups=8
  Reduce shuffle bytes=86
  Reduce input records=8
  Reduce output records=8
  Spilled Records=16
  Shuffled Maps =1
  Failed Shuffles=0
  Merged Map outputs=1
  GC time elapsed (ms)=201
  CPU time spent (ms)=2310
  Physical memory (bytes) snapshot=296906752
  Virtual memory (bytes) snapshot=4123201536
  Total committed heap usage (bytes)=170004480
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=485
File Output Format Counters
  Bytes Written=37
The median is: 3
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$ hadoop fs -ls /hadoopdata/hdfs/out/Day3_out/Median
18/06/11 14:00:36 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r--  1 acadgild supergroup          0 2018-06-11 13:56 /hadoopdata/hdfs/out/Day3_out/Median/_SUCCESS
-rw-r--r--  1 acadgild supergroup        37 2018-06-11 13:56 /hadoopdata/hdfs/out/Day3_out/Median/part-r-00000
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$
[acadgild@localhost mapreduce]$
```

## Out-File:

```
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$ hadoop fs -cat /hadoopdata/hdfs/out/Day3_out/Median/part-r-00000
18/06/11 14:02:49 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
1      5
2     35
3     25
4     10
6      5
7      5
8     10
10     5
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$
```

## 2: WordMean

**hadoop jar** hadoop-mapreduce-examples-2.6.5.jar **wordmean**  
/hadoopdata/Day3/merged.txt /hadoopdata/hdfs/out/Day3\_out/Mean

(A map/reduce program that counts the average length of the words in the input files.)

## ScreenShot(s):

```
[acadgild@localhost ~]$ cd /install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
[acadgild@localhost mapreduce]$ hadoop jar hadoop-mapreduce-examples-2.6.5.jar wordmean /hadoopdata/Day3/merged.txt /hadoopdata/hdfs/out/Day3_out/Mean
18/06/11 15:18:44 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/06/11 15:18:45 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032
18/06/11 15:18:47 INFO input.FileInputFormat: Total input paths to process : 1
18/06/11 15:18:48 INFO mapreduce.JobSubmitter: number of splits:1
18/06/11 15:18:48 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1528696653859_0002
18/06/11 15:18:48 INFO impl.YarnClientImpl: Submitted application application_1528696653859_0002
18/06/11 15:18:49 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/application_1528696653859_0002/
18/06/11 15:18:49 INFO mapreduce.Job: Running job: job_1528696653859_0002
18/06/11 15:19:03 INFO mapreduce.Job: Job job_1528696653859_0002 running in uber mode : false
18/06/11 15:19:03 INFO mapreduce.Job: map 0% reduce 0%
18/06/11 15:19:14 INFO mapreduce.Job: map 100% reduce 0%
18/06/11 15:19:30 INFO mapreduce.Job: map 100% reduce 100%
18/06/11 15:19:31 INFO mapreduce.Job: Job job_1528696653859_0002 completed successfully
18/06/11 15:19:31 INFO mapreduce.Job: Counters: 49
  File System Counters
    FILE: Number of bytes read=39
    FILE: Number of bytes written=215469
    FILE: Number of read operations=0
    FILE: Number of large read operations=0
    FILE: Number of write operations=0
    HDFS: Number of bytes read=598
    HDFS: Number of bytes written=21
    HDFS: Number of read operations=6
    HDFS: Number of large read operations=0
    HDFS: Number of write operations=2
  Job Counters
    Launched map tasks=1
    Launched reduce tasks=1
    Data-local map tasks=1
    Total time spent by all maps in occupied slots (ms)=8385
    Total time spent by all reduces in occupied slots (ms)=13390
    Total time spent by all map tasks (ms)=8385
    Total time spent by all reduce tasks (ms)=13390
    Total vcore-milliseconds taken by all map tasks=8385
    Total vcore-milliseconds taken by all reduce tasks=13390
    Total megabyte-milliseconds taken by all map tasks=8586240
    Total megabyte-milliseconds taken by all reduce tasks=13711360
  Map-Reduce Framework
    Map input records=10
    Map output records=200
    Map output bytes=2900
    Map output materialized bytes=39
    Input split bytes=113
    Combine input records=200
    Combine output records=2
    Reduce input groups=2
    Reduce shuffle bytes=39
    Reduce input records=2
    Reduce output records=2
    Spilled Records=4
    Shuffled Maps=1
    Failed Shuffles=0
    Merged Map outputs=1
    GC time elapsed (ms)=248
    CPU time spent (ms)=2290
    Physical memory (bytes) snapshot=294764544
    Virtual memory (bytes) snapshot=4118224896
    Total committed heap usage (bytes)=170004480
  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=485
  File Output Format Counters
    Bytes Written=21
  The mean is: 3.85
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$ hadoop fs -ls /hadoopdata/hdfs/out/Day3_out/Mean
18/06/11 15:23:12 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r-- 1 acadgild supergroup          0 2018-06-11 15:19 /hadoopdata/hdfs/out/Day3_out/Mean/_SUCCESS
-rw-r--r-- 1 acadgild supergroup        21 2018-06-11 15:19 /hadoopdata/hdfs/out/Day3_out/Mean/part-r-000000
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$
```

## Output:

```
Total megabyte-milliseconds taken by all map tasks=8586240
Total megabyte-milliseconds taken by all reduce tasks=13711360
Map-Reduce Framework
  Map input records=10
  Map output records=200
  Map output bytes=2900
  Map output materialized bytes=39
  Input split bytes=113
  Combine input records=200
  Combine output records=2
  Reduce input groups=2
  Reduce shuffle bytes=39
  Reduce input records=2
  Reduce output records=2
  Spilled Records=4
  Shuffled Maps=1
  Failed Shuffles=0
  Merged Map outputs=1
  GC time elapsed (ms)=248
  CPU time spent (ms)=2290
  Physical memory (bytes) snapshot=294764544
  Virtual memory (bytes) snapshot=4118224896
  Total committed heap usage (bytes)=170004480
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=485
File Output Format Counters
  Bytes Written=21
The mean is: 3.85
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$ hadoop fs -ls /hadoopdata/hdfs/out/Day3_out/Mean
18/06/11 15:23:12 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r-- 1 acadgild supergroup          0 2018-06-11 15:19 /hadoopdata/hdfs/out/Day3_out/Mean/_SUCCESS
-rw-r--r-- 1 acadgild supergroup        21 2018-06-11 15:19 /hadoopdata/hdfs/out/Day3_out/Mean/part-r-000000
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$
```

## Out-File:

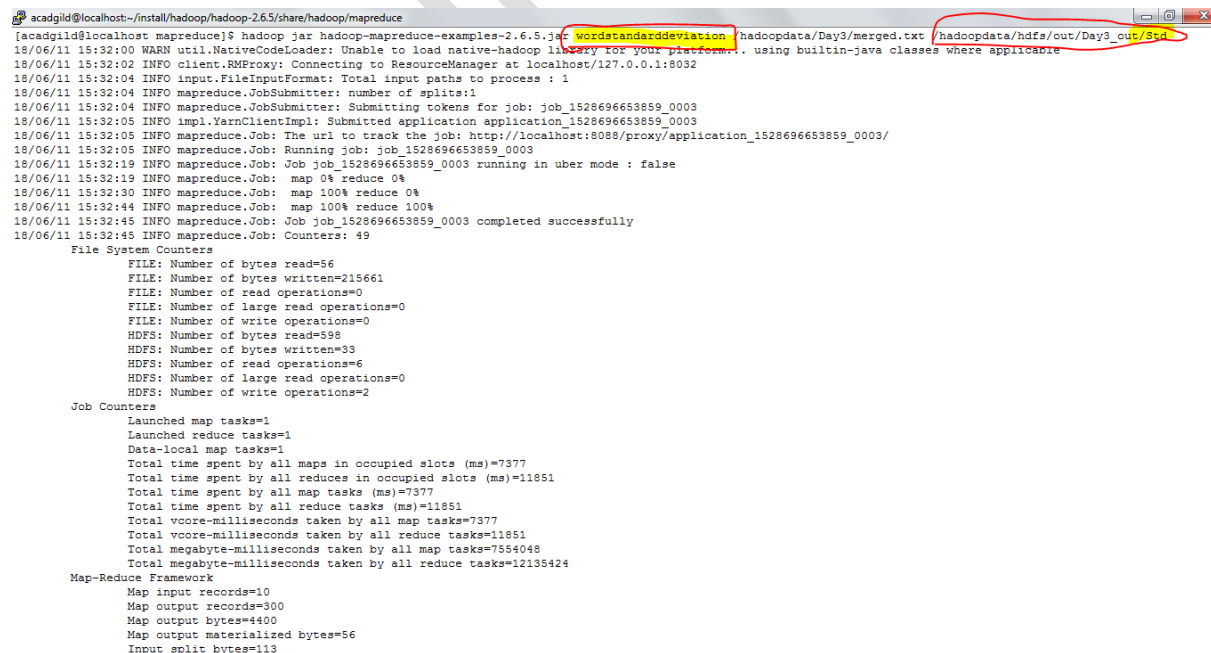
```
[acadgild@localhost mapreduce]$ hadoop fs -ls /hadoopdata/hdfs/out/Day3_out/Mean
18/06/11 15:23:12 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r-- 1 acadgild supergroup          0 2018-06-11 15:19 /hadoopdata/hdfs/out/Day3_out/Mean/_SUCCESS
-rw-r--r-- 1 acadgild supergroup        21 2018-06-11 15:19 /hadoopdata/hdfs/out/Day3_out/Mean/part-r-00000
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$ hadoop fs -cat /hadoopdata/hdfs/out/Day3_out/Mean/part-r-00000
18/06/11 15:25:16 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
count    100
length   385
```

## 3: WordStandardDeviation

**`hadoop jar hadoop-mapreduce-examples-2.6.5.jar wordstandarddeviation /hadoopdata/Day3/merged.txt /hadoopdata/hdfs/out/Day3_out/Std`**

(A map/reduce program that counts the standard deviation of the length of the words in the input file(s))

## ScreenShot(s):



```
acadgild@localhost: ~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
[acadgild@localhost mapreduce]$ hadoop jar hadoop-mapreduce-examples-2.6.5.jar wordstandarddeviation /hadoopdata/Day3/merged.txt /hadoopdata/hdfs/out/Day3_out/Std
18/06/11 15:32:00 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/06/11 15:32:02 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032
18/06/11 15:32:04 INFO input.FileInputFormat: Total input paths to process : 1
18/06/11 15:32:04 INFO mapreduce.JobSubmitter: number of splits:1
18/06/11 15:32:04 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1528696653859_0003
18/06/11 15:32:05 INFO impl.YarnClientImpl: Submitted application application_1528696653859_0003
18/06/11 15:32:05 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/application_1528696653859_0003/
18/06/11 15:32:05 INFO mapreduce.Job: Running job: job_1528696653859_0003
18/06/11 15:32:19 INFO mapreduce.Job: Job job_1528696653859_0003 running in uber mode : false
18/06/11 15:32:19 INFO mapreduce.Job:  map 0% reduce 0%
18/06/11 15:32:30 INFO mapreduce.Job:  map 100% reduce 0%
18/06/11 15:32:44 INFO mapreduce.Job:  map 100% reduce 100%
18/06/11 15:32:45 INFO mapreduce.Job: Job job_1528696653859_0003 completed successfully
18/06/11 15:32:45 INFO mapreduce.Job: Counters: 49
    File System Counters
      FILE: Number of bytes read=56
      FILE: Number of bytes written=215661
      FILE: Number of read operations=0
      FILE: Number of large read operations=0
      FILE: Number of write operations=0
      HDFS: Number of bytes read=598
      HDFS: Number of bytes written=33
      HDFS: Number of read operations=6
      HDFS: Number of large read operations=0
      HDFS: Number of write operations=2
    Job Counters
      Launched map tasks=1
      Launched reduce tasks=1
      Data-local map tasks=1
      Total time spent by all maps in occupied slots (ms)=7377
      Total time spent by all reduces in occupied slots (ms)=11851
      Total time spent by all map tasks (ms)=7377
      Total time spent by all reduce tasks (ms)=11851
      Total vcore-milliseconds taken by all map tasks=7377
      Total vcore-milliseconds taken by all reduce tasks=11851
      Total megabyte-milliseconds taken by all map tasks=7554048
      Total megabyte-milliseconds taken by all reduce tasks=12135424
    Map-Reduce Framework
      Map input records=10
      Map output records=300
      Map output bytes=4400
      Map output materialized bytes=56
      Input split bytes=113
```

## Output:

```
Combine input records=300
Combine output records=3
Reduce input groups=3
Reduce shuffle bytes=56
Reduce input records=3
Reduce output records=3
Spilled Records=6
Shuffled Maps =1
Failed Shuffles=0
Merged Map outputs=1
GC time elapsed (ms)=236
CPU time spent (ms)=2370
Physical memory (bytes) snapshot=298098688
Virtual memory (bytes) snapshot=4118224896
Total committed heap usage (bytes)=170004480

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=485
  File Output Format Counters
    Bytes Written=33
```

The standard deviation is: 2.475378758897312

## Out-File:

```
[acadgild@localhost mapreduce]$ hadoop fs -ls /hadoopdata/hdfs/out/Day3_out/Std
18/06/11 15:35:02 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r-- 1 acadgild supergroup 0 2018-06-11 15:32 /hadoopdata/hdfs/out/Day3_out/Std/ SUCCESS
-rw-r--r-- 1 acadgild supergroup 33 2018-06-11 15:32 /hadoopdata/hdfs/out/Day3_out/Std/part-r-00000
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost mapreduce]$ hadoop fs -cat /hadoopdata/hdfs/out/Day3_out/Std/part-r-00000
18/06/11 15:36:50 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
count 100
length 385
square 2095
```

## Sample Run on 1GB-FILE:

```
acagild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
[acagild@localhost mapreduce]$ hadoop fs -ls -h /hadoopdata/hdfs
18/06/11 15:49:09 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 8 items
-rwxrwxrwx 1 acagild supergroup 1007.9 M 2018-06-03 05:25 /hadoopdata/hdfs/file.txt
drwxr-xr-x 1 acagild supergroup 0 2018-06-11 13:44 /hadoopdata/hdfs/out
-rwxrwxrwx 1 acagild supergroup 97 2018-06-03 06:23 /hadoopdata/hdfs/test.txt
-rwxrwxrwx 1 acagild supergroup 227 2018-06-03 06:56 /hadoopdata/hdfs/test1.txt
-rwxrwxrwx 3 acagild supergroup 97 2018-06-03 06:24 /hadoopdata/hdfs/test2.txt
-rwxrwxrwx 1 acagild supergroup 97 2018-06-03 06:24 /hadoopdata/hdfs/test3.txt
-rwxrwxrwx 1 acagild supergroup 97 2018-06-03 05:31 /hadoopdata/hdfs/test_copy.txt
-rwxrwxrwx 1 acagild supergroup 0 2018-06-03 06:43 /hadoopdata/hdfs/touchztest.txt
[acagild@localhost mapreduce]$
```

## 1: WordMedian(1GB-FILE)

**hadoop jar hadoop-mapreduce-examples-2.6.5.jar**  
**wordmedian /hadoopdata/hdfs/file.txt**  
**/hadoopdata/hdfs/out/Day3 out/Median 1GB**

(Explanation already provided above)

```
acagild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
[acagild@localhost mapreduce]$
[acagild@localhost mapreduce]$ hadoop jar hadoop-mapreduce-examples-2.6.5.jar wordmedian /hadoopdata/hdfs/file.txt /hadoopdata/hdfs/out/Day3_out/Median_1GB
18/06/11 15:52:13 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/06/11 15:52:15 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032
18/06/11 15:52:17 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the Tool interface and execute your application with ToolRunner to remedy this.
18/06/11 15:52:17 INFO input.FileInputFormat: Total input paths to process : 1
18/06/11 15:52:17 INFO mapreduce.JobSubmitter: number of splits:8
18/06/11 15:52:18 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1528696653859_0004
18/06/11 15:52:18 INFO impl.YarnClientImpl: Submitted application application_1528696653859_0004
18/06/11 15:52:18 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/application_1528696653859_0004/
18/06/11 15:52:18 INFO mapreduce.Job: Running job: job_1528696653859_0004
18/06/11 15:52:38 INFO mapreduce.Job: Job job_1528696653859_0004 running in uber mode : false
18/06/11 15:52:38 INFO mapreduce.Job: map 0% reduce 0%
18/06/11 15:54:19 INFO mapreduce.Job: map 2% reduce 0%
18/06/11 15:54:22 INFO mapreduce.Job: map 5% reduce 0%
18/06/11 15:54:25 INFO mapreduce.Job: map 6% reduce 0%
18/06/11 15:54:26 INFO mapreduce.Job: map 7% reduce 0%
18/06/11 15:54:29 INFO mapreduce.Job: map 8% reduce 0%
18/06/11 15:54:32 INFO mapreduce.Job: map 9% reduce 0%
18/06/11 15:54:33 INFO mapreduce.Job: map 10% reduce 0%
18/06/11 15:54:36 INFO mapreduce.Job: map 11% reduce 0%
18/06/11 15:54:40 INFO mapreduce.Job: map 12% reduce 0%
18/06/11 15:54:41 INFO mapreduce.Job: map 14% reduce 0%
18/06/11 15:54:44 INFO mapreduce.Job: map 16% reduce 0%
18/06/11 15:55:07 INFO mapreduce.Job: map 17% reduce 0%
18/06/11 15:55:08 INFO mapreduce.Job: map 18% reduce 0%
18/06/11 15:55:11 INFO mapreduce.Job: map 20% reduce 0%
18/06/11 15:55:14 INFO mapreduce.Job: map 21% reduce 0%
18/06/11 15:55:15 INFO mapreduce.Job: map 22% reduce 0%
18/06/11 15:55:18 INFO mapreduce.Job: map 23% reduce 0%
18/06/11 15:55:20 INFO mapreduce.Job: map 24% reduce 0%
18/06/11 15:55:22 INFO mapreduce.Job: map 25% reduce 0%
18/06/11 15:55:25 INFO mapreduce.Job: map 26% reduce 0%
18/06/11 15:55:28 INFO mapreduce.Job: map 27% reduce 0%
18/06/11 15:55:29 INFO mapreduce.Job: map 28% reduce 0%
18/06/11 15:55:32 INFO mapreduce.Job: map 29% reduce 0%
18/06/11 15:55:36 INFO mapreduce.Job: map 30% reduce 0%
18/06/11 15:55:54 INFO mapreduce.Job: map 31% reduce 0%
18/06/11 15:55:55 INFO mapreduce.Job: map 33% reduce 0%
18/06/11 15:55:56 INFO mapreduce.Job: map 34% reduce 0%
18/06/11 15:55:57 INFO mapreduce.Job: map 35% reduce 0%
18/06/11 15:55:58 INFO mapreduce.Job: map 36% reduce 0%
18/06/11 15:55:59 INFO mapreduce.Job: map 38% reduce 0%
```

```
acagdild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
18/06/11 15:55:55 INFO mapreduce.Job: map 33% reduce 0%
18/06/11 15:55:56 INFO mapreduce.Job: map 34% reduce 0%
18/06/11 15:55:57 INFO mapreduce.Job: map 35% reduce 0%
18/06/11 15:55:58 INFO mapreduce.Job: map 36% reduce 0%
18/06/11 15:55:59 INFO mapreduce.Job: map 38% reduce 0%
18/06/11 15:56:01 INFO mapreduce.Job: map 40% reduce 0%
18/06/11 15:56:02 INFO mapreduce.Job: map 40% reduce 0%
18/06/11 15:56:03 INFO mapreduce.Job: map 41% reduce 0%
18/06/11 15:56:05 INFO mapreduce.Job: map 42% reduce 0%
18/06/11 15:56:06 INFO mapreduce.Job: map 43% reduce 0%
18/06/11 15:56:12 INFO mapreduce.Job: map 44% reduce 0%
18/06/11 15:56:27 INFO mapreduce.Job: map 45% reduce 0%
18/06/11 15:56:28 INFO mapreduce.Job: map 46% reduce 0%
18/06/11 15:56:31 INFO mapreduce.Job: map 49% reduce 0%
18/06/11 15:56:35 INFO mapreduce.Job: map 50% reduce 0%
18/06/11 15:56:40 INFO mapreduce.Job: map 52% reduce 0%
18/06/11 15:56:41 INFO mapreduce.Job: map 63% reduce 0%
18/06/11 15:56:43 INFO mapreduce.Job: map 71% reduce 0%
18/06/11 15:56:45 INFO mapreduce.Job: map 75% reduce 0%
18/06/11 15:57:22 INFO mapreduce.Job: map 75% reduce 25%
18/06/11 15:57:26 INFO mapreduce.Job: map 76% reduce 25%
18/06/11 15:57:29 INFO mapreduce.Job: map 78% reduce 25%
18/06/11 15:57:33 INFO mapreduce.Job: map 79% reduce 25%
18/06/11 15:57:36 INFO mapreduce.Job: map 80% reduce 25%
18/06/11 15:57:39 INFO mapreduce.Job: map 81% reduce 25%
18/06/11 15:57:55 INFO mapreduce.Job: map 84% reduce 25%
18/06/11 15:57:58 INFO mapreduce.Job: map 85% reduce 25%
18/06/11 15:58:01 INFO mapreduce.Job: map 86% reduce 25%
18/06/11 15:58:14 INFO mapreduce.Job: map 87% reduce 25%
18/06/11 15:58:18 INFO mapreduce.Job: map 88% reduce 25%
18/06/11 15:58:21 INFO mapreduce.Job: map 89% reduce 25%
18/06/11 15:58:24 INFO mapreduce.Job: map 90% reduce 25%
18/06/11 15:58:27 INFO mapreduce.Job: map 91% reduce 25%
18/06/11 15:58:36 INFO mapreduce.Job: map 95% reduce 25%
18/06/11 15:58:37 INFO mapreduce.Job: map 96% reduce 25%
18/06/11 15:58:39 INFO mapreduce.Job: map 96% reduce 29%
18/06/11 15:58:40 INFO mapreduce.Job: map 100% reduce 29%
18/06/11 15:58:42 INFO mapreduce.Job: map 100% reduce 100%
18/06/11 15:58:42 INFO mapreduce.Job: Job job_1528696653859_0004 completed successfully
18/06/11 15:58:43 INFO mapreduce.Job: Counters: 50
File System Counters
FILE: Number of bytes read=9798
FILE: Number of bytes written=980066
FILE: Number of read operations=0
```

## Output:

```
acagdild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
Launched map tasks=10
Launched reduce tasks=1
Data-local map tasks=10
Total time spent by all maps in occupied slots (ms)=1873283
Total time spent by all reduces in occupied slots (ms)=115725
Total time spent by all map tasks (ms)=1873283
Total time spent by all reduce tasks (ms)=115725
Total vcore-milliseconds taken by all map tasks=1873283
Total vcore-milliseconds taken by all reduce tasks=115725
Total megabyte-milliseconds taken by all map tasks=1918241792
Total megabyte-milliseconds taken by all reduce tasks=118502400
Map-Reduce Framework
Map input records=100000
Map output records=1000000000
Map output bytes=800000000
Map output materialized bytes=1968
Input split bytes=888
Combine input records=100000768
Combine output records=960
Reduce input groups=24
Reduce shuffle bytes=1968
Reduce input records=192
Reduce output records=24
Spilled Records=1152
Shuffled Maps =8
Failed Shuffles=0
Merged Map outputs=8
GC time elapsed (ms)=9954
CPU time spent (ms)=168580
Physical memory (bytes) snapshot=1648611328
Virtual memory (bytes) snapshot=18500616192
Total committed heap usage (bytes)=1132036096
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=1056959433
File Output Format Counters
Bytes Written=240
The median is: 9
```



## Out-File:

```
acagild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
CONNECTION=0
IO_ERROR=0
WRONG_LENGTH=0
WRONG_MAP=0
WRONG_REDUCE=0
File Input Format Counters
  Bytes Read=1056959433
File Output Format Counters
  Bytes Written=240
The median is: 5
You have new mail in /var/spool/mail/acagild
[acagild@localhost mapreduce]$ hadoop fs -ls -h /hadoopdata/hdfs/out/Day3_out/Median_1GB
18/06/11 15:59:15 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r-- 1 acagild supergroup 0 2018-06-11 15:58 /hadoopdata/hdfs/out/Day3_out/Median_1GB/_SUCCESS
-rw-r--r-- 1 acagild supergroup 240 2018-06-11 15:58 /hadoopdata/hdfs/out/Day3_out/Median_1GB/part-r-00000
[acagild@localhost mapreduce]$ hadoop fs -cat /hadoopdata/hdfs/out/Day3_out/Median_1GB/part-r-00000
18/06/11 15:58:41 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
1      21848
2      67736
3      601167
4      2234987
5      4341158
6      7509436
7      10117240
8      12705832
9      13734681
10     13093949
11     11029502
12     8677806
13     6330962
14     4139895
15     2508074
16     1431993
17     768293
18     357939
19     181743
20     84195
21     94870
22     17393
23     7213
24     2088
You have new mail in /var/spool/mail/acagild
```

## 2: WordMean(1GB-FILE)

**hadoop jar hadoop-mapreduce-examples-2.6.5.jar**

**wordmean /hadoopdata/hdfs/file.txt**

**/hadoopdata/hdfs/out/Day3\_out/Mean\_1GB**

**(Explanation already provided above)**

```
[acagild@localhost mapreduce]$
[acagild@localhost mapreduce]$ hadoop jar hadoop-mapreduce-examples-2.6.5.jar wordmean /hadoopdata/hdfs/file.txt /hadoopdata/hdfs/out/Day3_out/Mean_1GB
18/06/11 16:07:06 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/06/11 16:07:08 INFO client.RMProxy: Connecting to ResourceManager at localhost:8088/proxy/application_1528696653859_0005
18/06/11 16:07:10 INFO input.FileInputFormat: Total input paths to process : 1
18/06/11 16:07:11 INFO mapreduce.JobSubmitter: number of splits:8
18/06/11 16:07:11 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1528696653859_0005
18/06/11 16:07:12 INFO impl.YarnClientImpl: Submitted application application_1528696653859_0005
18/06/11 16:07:12 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/application_1528696653859_0005/
18/06/11 16:07:12 INFO mapreduce.Job: Running job: job_1528696653859_0005
18/06/11 16:07:29 INFO mapreduce.Job: Job job_1528696653859_0005 running in uber mode : false
18/06/11 16:07:29 INFO mapreduce.Job:  map 0% reduce 0%
18/06/11 16:08:22 INFO mapreduce.Job:  map 2% reduce 0%
18/06/11 16:08:26 INFO mapreduce.Job:  map 5% reduce 0%
18/06/11 16:08:29 INFO mapreduce.Job:  map 6% reduce 0%
18/06/11 16:08:33 INFO mapreduce.Job:  map 7% reduce 0%
18/06/11 16:08:49 INFO mapreduce.Job:  map 8% reduce 0%
18/06/11 16:08:52 INFO mapreduce.Job:  map 10% reduce 0%
18/06/11 16:08:53 INFO mapreduce.Job:  map 11% reduce 0%
18/06/11 16:08:56 INFO mapreduce.Job:  map 12% reduce 0%
18/06/11 16:09:11 INFO mapreduce.Job:  map 13% reduce 0%
18/06/11 16:09:12 INFO mapreduce.Job:  map 16% reduce 0%
18/06/11 16:09:15 INFO mapreduce.Job:  map 17% reduce 0%
18/06/11 16:09:18 INFO mapreduce.Job:  map 18% reduce 0%
18/06/11 16:09:29 INFO mapreduce.Job:  map 19% reduce 0%
18/06/11 16:09:30 INFO mapreduce.Job:  map 22% reduce 0%
18/06/11 16:09:33 INFO mapreduce.Job:  map 23% reduce 0%
18/06/11 16:09:44 INFO mapreduce.Job:  map 24% reduce 0%
18/06/11 16:09:47 INFO mapreduce.Job:  map 27% reduce 0%
18/06/11 16:09:50 INFO mapreduce.Job:  map 28% reduce 0%
18/06/11 16:10:00 INFO mapreduce.Job:  map 29% reduce 0%
18/06/11 16:10:02 INFO mapreduce.Job:  map 30% reduce 0%
18/06/11 16:10:03 INFO mapreduce.Job:  map 32% reduce 0%
18/06/11 16:10:04 INFO mapreduce.Job:  map 33% reduce 0%
18/06/11 16:10:07 INFO mapreduce.Job:  map 34% reduce 0%
18/06/11 16:10:16 INFO mapreduce.Job:  map 35% reduce 0%
18/06/11 16:10:19 INFO mapreduce.Job:  map 38% reduce 0%
18/06/11 16:10:20 INFO mapreduce.Job:  map 39% reduce 0%
18/06/11 16:10:28 INFO mapreduce.Job:  map 40% reduce 0%
18/06/11 16:10:29 INFO mapreduce.Job:  map 41% reduce 0%
18/06/11 16:10:31 INFO mapreduce.Job:  map 42% reduce 0%
18/06/11 16:10:32 INFO mapreduce.Job:  map 44% reduce 0%
18/06/11 16:10:35 INFO mapreduce.Job:  map 45% reduce 0%
```

```

acadgild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
18/06/11 16:10:48 INFO mapreduce.Job: map 50% reduce 0%
18/06/11 16:10:58 INFO mapreduce.Job: map 54% reduce 0%
18/06/11 16:11:00 INFO mapreduce.Job: map 58% reduce 0%
18/06/11 16:11:01 INFO mapreduce.Job: map 67% reduce 0%
18/06/11 16:11:02 INFO mapreduce.Job: map 75% reduce 0%
18/06/11 16:11:33 INFO mapreduce.Job: map 75% reduce 25%
18/06/11 16:11:36 INFO mapreduce.Job: map 76% reduce 25%
18/06/11 16:11:39 INFO mapreduce.Job: map 77% reduce 25%
18/06/11 16:11:55 INFO mapreduce.Job: map 79% reduce 25%
18/06/11 16:12:08 INFO mapreduce.Job: map 81% reduce 25%
18/06/11 16:12:21 INFO mapreduce.Job: map 82% reduce 25%
18/06/11 16:12:25 INFO mapreduce.Job: map 83% reduce 25%
18/06/11 16:12:34 INFO mapreduce.Job: map 84% reduce 25%
18/06/11 16:12:37 INFO mapreduce.Job: map 85% reduce 25%
18/06/11 16:12:44 INFO mapreduce.Job: map 86% reduce 25%
18/06/11 16:12:47 INFO mapreduce.Job: map 87% reduce 25%
18/06/11 16:12:53 INFO mapreduce.Job: map 88% reduce 25%
18/06/11 16:12:56 INFO mapreduce.Job: map 89% reduce 25%
18/06/11 16:13:03 INFO mapreduce.Job: map 90% reduce 25%
18/06/11 16:13:05 INFO mapreduce.Job: map 91% reduce 25%
18/06/11 16:13:10 INFO mapreduce.Job: map 95% reduce 25%
18/06/11 16:13:11 INFO mapreduce.Job: map 96% reduce 25%
18/06/11 16:13:12 INFO mapreduce.Job: map 96% reduce 29%
18/06/11 16:13:17 INFO mapreduce.Job: map 100% reduce 29%
18/06/11 16:13:18 INFO mapreduce.Job: map 100% reduce 33%
18/06/11 16:13:20 INFO mapreduce.Job: map 100% reduce 100%
18/06/11 16:13:21 INFO mapreduce.Job: Job job_1528696653859_0005 completed successfully
18/06/11 16:13:22 INFO mapreduce.Job: Counters: 50

File System Counters
  FILE: Number of bytes read=3351
  FILE: Number of bytes written=973133
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0
  HDFS: Number of bytes read=1056960321
  HDFS: Number of bytes written=33
  HDFS: Number of read operations=27
  HDFS: Number of large read operations=0
  HDFS: Number of write operations=2

Job Counters
  Killed map tasks=2
  Launched map tasks=10
  Launched reduce tasks=1
  Data-local map tasks=10

```

## Output:

```

acadgild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
Launched reduce tasks=1
Data-local map tasks=10
Total time spent by all maps in occupied slots (ms)=1749977
Total time spent by all reduces in occupied slots (ms)=136320
Total time spent by all map tasks (ms)=1749977
Total time spent by all reduce tasks (ms)=136320
Total vcore-milliseconds taken by all map tasks=1749977
Total vcore-milliseconds taken by all reduce tasks=136320
Total megabyte-milliseconds taken by all map tasks=1791976448
Total megabyte-milliseconds taken by all reduce tasks=139591680

Map-Reduce Framework
  Map input records=100000
  Map output records=200000000
  Map output bytes=2900000000
  Map output materialized bytes=312
  Input split bytes=888
  Combine input records=200000158
  Combine output records=174
  Reduce input groups=2
  Reduce shuffle bytes=312
  Reduce input records=16
  Reduce output records=2
  Spilled Records=190
  Shuffled Maps=8
  Failed Shuffles=0
  Merged Map outputs=8
  GC time elapsed (ms)=9632
  CPU time spent (ms)=201450
  Physical memory (bytes) snapshot=1650659328
  Virtual memory (bytes) snapshot=18500616192
  Total committed heap usage (bytes)=1132036096

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=1056959433
File Output Format Counters
  Bytes Written=33
The mean is: 3.56906185
You have new mail in /var/spool/mail/acadgild

```

## Out-File:

```
##### Output #####
Bytes-Written=33
The mean is: 9.56906185
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ hadoop fs -ls -h /hadoopdata/hdfs/out/Day3_out/Mean_1GB
18/06/11 16:15:14 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r-- 1 acadgild supergroup 0 2018-06-11 16:13 /hadoopdata/hdfs/out/Day3_out/Mean_1GB/_SUCCESS
-rw-r--r-- 1 acadgild supergroup 33 2018-06-11 16:13 /hadoopdata/hdfs/out/Day3_out/Mean_1GB/part-r-000000
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ hadoop fs -cat /hadoopdata/hdfs/out/Day3_out/Mean_1GB/part-r-000000
18/06/11 16:15:29 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
count 1000000000
length 956906185
```

## 3: WordStandardDeviation(1GB-FILE)

**hadoop jar hadoop-mapreduce-examples-2.6.5.jar**  
**wordstandarddeviation** /hadoopdata/hdfs/file.txt  
/hadoopdata/hdfs/out/Day3\_out/wordstandarddeviation\_1GB

(Explanation already provided above)

```
acadgild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
[acadgild@localhost mapreduce]$
[acadgild@localhost mapreduce]$ hadoop jar hadoop-mapreduce-examples-2.6.5.jar wordstandarddeviation /hadoopdata/hdfs/file.txt /hadoopdata/hdfs/out/Day3_out/wordstandarddeviation_1GB
18/06/11 16:16:38 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/06/11 16:16:39 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032
18/06/11 16:16:42 INFO input.FileInputFormat: Total input paths to process : 1
18/06/11 16:16:42 INFO mapreduce.JobSubmitter: number of splits:8
18/06/11 16:16:42 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1528696653859_0006
18/06/11 16:16:43 INFO impl.YarnClientImpl: Submitted application application_1528696653859_0006
18/06/11 16:16:43 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/application_1528696653859_0006/
18/06/11 16:16:43 INFO mapreduce.Job: Running job: job_1528696653859_0006
18/06/11 16:16:57 INFO mapreduce.Job: Job job_1528696653859_0006 running in uber mode : false
18/06/11 16:16:57 INFO mapreduce.Job: map 0% reduce 0%
18/06/11 16:17:54 INFO mapreduce.Job: map 1% reduce 0%
18/06/11 16:17:58 INFO mapreduce.Job: map 3% reduce 0%
18/06/11 16:18:00 INFO mapreduce.Job: map 4% reduce 0%
18/06/11 16:18:21 INFO mapreduce.Job: map 5% reduce 0%
18/06/11 16:18:22 INFO mapreduce.Job: map 7% reduce 0%
18/06/11 16:18:26 INFO mapreduce.Job: map 8% reduce 0%
18/06/11 16:18:42 INFO mapreduce.Job: map 9% reduce 0%
18/06/11 16:18:45 INFO mapreduce.Job: map 11% reduce 0%
18/06/11 16:18:49 INFO mapreduce.Job: map 12% reduce 0%
18/06/11 16:19:01 INFO mapreduce.Job: map 13% reduce 0%
18/06/11 16:19:02 INFO mapreduce.Job: map 14% reduce 0%
18/06/11 16:19:05 INFO mapreduce.Job: map 15% reduce 0%
18/06/11 16:19:14 INFO mapreduce.Job: map 16% reduce 0%
18/06/11 16:19:17 INFO mapreduce.Job: map 19% reduce 0%
18/06/11 16:19:31 INFO mapreduce.Job: map 20% reduce 0%
18/06/11 16:19:32 INFO mapreduce.Job: map 21% reduce 0%
18/06/11 16:19:34 INFO mapreduce.Job: map 22% reduce 0%
18/06/11 16:19:48 INFO mapreduce.Job: map 23% reduce 0%
18/06/11 16:19:49 INFO mapreduce.Job: map 24% reduce 0%
18/06/11 16:19:50 INFO mapreduce.Job: map 25% reduce 0%
18/06/11 16:19:53 INFO mapreduce.Job: map 26% reduce 0%
18/06/11 16:20:04 INFO mapreduce.Job: map 27% reduce 0%
18/06/11 16:20:05 INFO mapreduce.Job: map 28% reduce 0%
18/06/11 16:20:06 INFO mapreduce.Job: map 29% reduce 0%
18/06/11 16:20:09 INFO mapreduce.Job: map 30% reduce 0%
18/06/11 16:20:17 INFO mapreduce.Job: map 31% reduce 0%
18/06/11 16:20:19 INFO mapreduce.Job: map 32% reduce 0%
18/06/11 16:20:20 INFO mapreduce.Job: map 33% reduce 0%
18/06/11 16:20:29 INFO mapreduce.Job: map 34% reduce 0%
18/06/11 16:20:31 INFO mapreduce.Job: map 35% reduce 0%
18/06/11 16:20:32 INFO mapreduce.Job: map 36% reduce 0%
```

```
acagild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
18/06/11 16:21:32 INFO mapreduce.Job: map 54% reduce 0%
18/06/11 16:21:33 INFO mapreduce.Job: map 58% reduce 0%
18/06/11 16:21:34 INFO mapreduce.Job: map 71% reduce 0%
18/06/11 16:21:35 INFO mapreduce.Job: map 75% reduce 0%
18/06/11 16:22:04 INFO mapreduce.Job: map 75% reduce 25%
18/06/11 16:22:07 INFO mapreduce.Job: map 76% reduce 25%
18/06/11 16:22:10 INFO mapreduce.Job: map 77% reduce 25%
18/06/11 16:22:24 INFO mapreduce.Job: map 78% reduce 25%
18/06/11 16:22:37 INFO mapreduce.Job: map 79% reduce 25%
18/06/11 16:22:50 INFO mapreduce.Job: map 80% reduce 25%
18/06/11 16:22:59 INFO mapreduce.Job: map 81% reduce 25%
18/06/11 16:23:03 INFO mapreduce.Job: map 82% reduce 25%
18/06/11 16:23:09 INFO mapreduce.Job: map 83% reduce 25%
18/06/11 16:23:18 INFO mapreduce.Job: map 84% reduce 25%
18/06/11 16:23:25 INFO mapreduce.Job: map 85% reduce 25%
18/06/11 16:23:28 INFO mapreduce.Job: map 86% reduce 25%
18/06/11 16:23:41 INFO mapreduce.Job: map 87% reduce 25%
18/06/11 16:23:47 INFO mapreduce.Job: map 88% reduce 25%
18/06/11 16:23:59 INFO mapreduce.Job: map 89% reduce 25%
18/06/11 16:24:06 INFO mapreduce.Job: map 90% reduce 25%
18/06/11 16:24:12 INFO mapreduce.Job: map 91% reduce 25%
18/06/11 16:24:19 INFO mapreduce.Job: map 95% reduce 25%
18/06/11 16:24:21 INFO mapreduce.Job: map 96% reduce 25%
18/06/11 16:24:22 INFO mapreduce.Job: map 96% reduce 29%
18/06/11 16:24:25 INFO mapreduce.Job: map 100% reduce 29%
18/06/11 16:24:27 INFO mapreduce.Job: map 100% reduce 100%
18/06/11 16:24:27 INFO mapreduce.Job: Job job_1528696653859_0006 completed successfully
18/06/11 16:24:28 INFO mapreduce.Job: Counters: 50
File System Counters
  FILE: Number of bytes read=8620
  FILE: Number of bytes written=979411
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0
  HDFS: Number of bytes read=1056960321
  HDFS: Number of bytes written=51
  HDFS: Number of read operations=27
  HDFS: Number of large read operations=0
  HDFS: Number of write operations=2
Job Counters
  Killed map tasks=2
  Launched map tasks=10
  Launched reduce tasks=1
  Data-local map tasks=10
```

## Output:

```
acagild@localhost:~/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
Launched reduce tasks=1
Data-local map tasks=10
Total time spent by all maps in occupied slots (ms)=2279584
Total time spent by all reduces in occupied slots (ms)=170891
Total time spent by all map tasks (ms)=2279584
Total time spent by all reduce tasks (ms)=170891
Total vcore-milliseconds taken by all map tasks=2279584
Total vcore-milliseconds taken by all reduce tasks=170891
Total megabyte-milliseconds taken by all map tasks=2394294016
Total megabyte-milliseconds taken by all reduce tasks=174992384
Map-Reduce Framework
  Map input records=100000
  Map output records=300000000
  Map output bytes=4400000000
  Map output materialized bytes=448
  Input split bytes=888
  Combine input records=3000000333
  Combine output records=357
  Reduce input groups=3
  Reduce shuffle bytes=448
  Reduce input records=24
  Reduce output records=3
  Spilled Records=498
  Shuffled Maps =8
  Failed Shuffles=0
  Merged Map outputs=8
  GC time elapsed (ms)=9843
  CPU time spent (ms)=272560
  Physical memory (bytes) snapshot=1689153536
  Virtual memory (bytes) snapshot=18500907008
  Total committed heap usage (bytes)=1132036096
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=1056960321
File Output Format Counters
  Bytes Written=51
The standard deviation is: NaN
You have new mail in /var/spool/mail/acagild
```

## Out-File:

```
[acagild@localhost mapreduce]$ hadoop fs -ls -h /hadoopdata/hdfs/out/Day3_out/wordstandarddeviation_1GB
18/06/11 16:25:03 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
-rw-r--r-- 1 acagild supergroup          0 2018-06-11 16:24 /hadoopdata/hdfs/out/Day3_out/wordstandarddeviation_1GB/_SUCCESS
-rw-r--r-- 1 acagild supergroup          51 2018-06-11 16:24 /hadoopdata/hdfs/out/Day3_out/wordstandarddeviation_1GB/part-r-00000
[acagild@localhost mapreduce]$ hadoop fs -cat /hadoopdata/hdfs/out/Day3_out/wordstandarddeviation_1GB/part-r-00000
18/06/11 16:25:26 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
count_ 100000000
length_ 956906185
square_ 1423762255
You have new mail in /var/spool/mail/acagild
```

\*\*\*\*\*

End

\*\*\*\*\*