

Problem Statement 4 :

Associated Data Files

<https://drive.google.com/file/d/0Bxr27gVaXO5sVjQ5QW0wQ3RCTUU/view?usp=sharing>

We have a dataset of sales of different TV sets across different locations.

Records look like:

Samsung|Optima|14|Madhya Pradesh|132401|14200

The fields are arranged like:

Company Name|Product Name|Size in inches|State|Pin Code|Price

There are some invalid records which contain 'NA' in either Company Name or Product Name.

Task 1:

Write a Map Reduce program to filter out the invalid records. Map only job will fit for this context.

Solution1 :

Eclipse Code:

```
package com.acadgild.mapreduce.assignment.task1;

import java.io.IOException;
import org.apache.hadoop.conf.Configuration;
import org.apache.hadoop.fs.Path;
import org.apache.hadoop.io.LongWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapreduce.Job;
import org.apache.hadoop.mapreduce.Mapper;
import org.apache.hadoop.mapreduce.lib.input.FileInputFormat;
import org.apache.hadoop.mapreduce.lib.output.FileOutputFormat;

public class FilterTelevision {
    public static class FilterMapper
        extends Mapper<LongWritable, Text, Text, Text>{

        public void map(LongWritable key, Text value, Context context
            ) throws IOException, InterruptedException {

            String valueString = value.toString();
            String[] SingleTelevisionData = valueString.split("\\|");

            if(!SingleTelevisionData[0].matches("NA") && !
SingleTelevisionData[1].matches("NA")) {
                context.write(value,new Text());
            }
        }
    }
}
```

```

public static void main(String[] args) throws Exception {
    Configuration conf = new Configuration();
    Job job = Job.getInstance(conf, "filter television");
    job.setJarByClass(FilterTelevision.class);
    job.setMapperClass(FilterMapper.class);
    job.setOutputKeyClass(LongWritable.class);
    job.setOutputValueClass(Text.class);
    job.setNumReduceTasks(0);
    FileInputFormat.addInputPath(job, new Path(args[0]));
    FileOutputFormat.setOutputPath(job, new Path(args[1]));
    System.exit(job.waitForCompletion(true) ? 0 : 1);
}
}

```

Converted to jar : filtertele.jar

Execution:

```

[acadgild@localhost ~]$ jps
3921 Jps
3196
[acadgild@localhost ~]$ sudo service sshd start
[sudo] password for acadgild:
[acadgild@localhost ~]$ start-all.sh
This script is Deprecated. Instead use start-dfs.sh and start-yarn.sh
18/06/27 03:40:03 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
Starting namenodes on [localhost]
localhost: starting namenode, logging to
/home/acadgild/install/hadoop/hadoop-2.6.5/logs/hadoop-acadgild-namenode-localhost.localdomain.out
localhost: starting datanode, logging to
/home/acadgild/install/hadoop/hadoop-2.6.5/logs/hadoop-acadgild-datanode-localhost.localdomain.out
Starting secondary namenodes [0.0.0.0]
0.0.0.0: starting secondarynamenode, logging to
/home/acadgild/install/hadoop/hadoop-2.6.5/logs/hadoop-acadgild-secondarynamenode-localhost.local
domain.out
18/06/27 03:40:37 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
starting yarn daemons
starting resourcemanager, logging to
/home/acadgild/install/hadoop/hadoop-2.6.5/logs/yarn-acadgild-resourcemanager-localhost.localdomai
n.out
localhost: starting nodemanager, logging to
/home/acadgild/install/hadoop/hadoop-2.6.5/logs/yarn-acadgild-nodemanager-localhost.localdomain.ou

```

t

```
[acadgild@localhost ~]$ jps
```

4755 Jps

4504 ResourceManager

4072 NameNode

4346 SecondaryNameNode

4171 DataNode

3196

4605 NodeManager

```
[acadgild@localhost ~]$ hdfs dfs -ls /user/acadgild
```

18/06/27 03:42:39 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

Found 1 items

```
drwxr-xr-x - acadgild supergroup      0 2018-06-25 00:55 /user/acadgild/hadoopdata
```

```
[acadgild@localhost ~]$ hdfs dfs -ls /user/acadgild/hadoopdata
```

18/06/27 03:43:04 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

Found 3 items

```
drwxr-xr-x - acadgild supergroup      0 2018-06-25 01:33 /user/acadgild/hadoopdata/assignment3
```

```
-rw-r--r-- 1 acadgild supergroup    1147 2018-06-24 19:35 /user/acadgild/hadoopdata/file.txt
```

```
drwxr-xr-x - acadgild supergroup      0 2018-06-24 19:39 /user/acadgild/hadoopdata/hdfs
```

```
[acadgild@localhost ~]$ hdfs dfs -mkdir /user/acadgild/hadoopdata/assignment/mapreduce/task1
```

18/06/27 03:44:28 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

mkdir: `/user/acadgild/hadoopdata/assignment/mapreduce/task1': No such file or directory

```
[acadgild@localhost ~]$ hdfs dfs -mkdir /user/acadgild/hadoopdata/assignment
```

18/06/27 03:44:53 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

```
[acadgild@localhost ~]$ hdfs dfs -mkdir /user/acadgild/hadoopdata/assignment/mapreduce
```

18/06/27 03:45:14 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

```
[acadgild@localhost ~]$ hdfs dfs -mkdir /user/acadgild/hadoopdata/assignment/mapreduce/task1
```

18/06/27 03:45:32 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

```
[acadgild@localhost ~]$ hdfs dfs -mkdir /user/acadgild/hadoopdata/assignment/mapreduce/task1/input
```

18/06/27 03:45:49 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

```
[acadgild@localhost ~]$ hdfs dfs -mkdir
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/output
```

18/06/27 03:45:59 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

```
[acadgild@localhost ~]$ hdfs dfs -ls /user/acadgild/hadoopdata/assignment/mapreduce/task1/
```

18/06/27 03:46:26 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

Found 2 items

```
drwxr-xr-x - acadgild supergroup      0 2018-06-27 03:45
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/input
```

```
drwxr-xr-x - acadgild supergroup      0 2018-06-27 03:46
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/output
```

```

[acadgild@localhost ~]$ hdfs dfs -put /home/acadgild/Desktop/television.txt
/user/acadgild/hadoopdata/assignment/mapreduce/task1/input
18/06/27 03:47:34 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
[acadgild@localhost ~]$ hdfs dfs -ls /user/acadgild/hadoopdata/assignment/mapreduce/task1/
18/06/27 03:48:00 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
Found 2 items
drwxr-xr-x - acadgild supergroup      0 2018-06-27 03:47
/user/acadgild/hadoopdata/assignment/mapreduce/task1/input
drwxr-xr-x - acadgild supergroup      0 2018-06-27 03:46
/user/acadgild/hadoopdata/assignment/mapreduce/task1/output
[acadgild@localhost ~]$ hdfs dfs -ls /user/acadgild/hadoopdata/assignment/mapreduce/task1/input
18/06/27 03:48:19 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
Found 1 items
-rw-r--r-- 1 acadgild supergroup      733 2018-06-27 03:47
/user/acadgild/hadoopdata/assignment/mapreduce/task1/input/television.txt
[acadgild@localhost ~]$ hdfs dfs -ls /user/acadgild/hadoopdata/assignment/mapreduce/task1/input/^C
[acadgild@localhost ~]$ hdfs dfs -cat
/user/acadgild/hadoopdata/assignment/mapreduce/task1/input/television.txt
18/06/27 03:49:11 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
Samsung|Optima|14|Madhya Pradesh|132401|14200
Onida|Lucid|18|Uttar Pradesh|232401|16200
Akai|Decent|16|Kerala|922401|12200
Lava|Attention|20|Assam|454601|24200
Zen|Super|14|Maharashtra|619082|9200
Samsung|Optima|14|Madhya Pradesh|132401|14200
Onida|Lucid|18|Uttar Pradesh|232401|16200
Onida|Decent|14|Uttar Pradesh|232401|16200
Onida|NA|16|Kerala|922401|12200
Lava|Attention|20|Assam|454601|24200
Zen|Super|14|Maharashtra|619082|9200
Samsung|Optima|14|Madhya Pradesh|132401|14200
NA|Lucid|18|Uttar Pradesh|232401|16200
Samsung|Decent|16|Kerala|922401|12200
Lava|Attention|20|Assam|454601|24200
Samsung|Super|14|Maharashtra|619082|9200
Samsung|Super|14|Maharashtra|619082|9200
Samsung|Super|14|Maharashtra|619082|9200[acadgild@localhost ~]$

[acadgild@localhost ~]$ hadoop jar /home/acadgild/Desktop/filtertele.jar
com.acadgild.mapreduce.assignment.task1.FilterTelevision
/user/acadgild/hadoopdata/assignment/mapreduce/task1/input/television.txt
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputfilter
18/06/27 05:29:22 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
18/06/27 05:29:23 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032

```

18/06/27 05:29:25 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the Tool interface and execute your application with ToolRunner to remedy this.
18/06/27 05:29:25 INFO input.FileInputFormat: Total input paths to process : 1
18/06/27 05:29:26 INFO mapreduce.JobSubmitter: number of splits:1
18/06/27 05:29:26 INFO mapreduce.JobSubmitter: Submitting tokens for job:
job_1530051047296_0009
18/06/27 05:29:26 INFO impl.YarnClientImpl: Submitted application
application_1530051047296_0009
18/06/27 05:29:27 INFO mapreduce.Job: The url to track the job:
http://localhost:8088/proxy/application_1530051047296_0009/
18/06/27 05:29:27 INFO mapreduce.Job: Running job: job_1530051047296_0009
18/06/27 05:29:44 INFO mapreduce.Job: Job job_1530051047296_0009 running in uber mode : false
18/06/27 05:29:44 INFO mapreduce.Job: map 0% reduce 0%
18/06/27 05:29:57 INFO mapreduce.Job: map 100% reduce 0%
18/06/27 05:29:58 INFO mapreduce.Job: Job job_1530051047296_0009 completed successfully
18/06/27 05:29:58 INFO mapreduce.Job: Counters: 30

File System Counters

FILE: Number of bytes read=0
FILE: Number of bytes written=107137
FILE: Number of read operations=0
FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=892
HDFS: Number of bytes written=662
HDFS: Number of read operations=5
HDFS: Number of large read operations=0
HDFS: Number of write operations=2

Job Counters

Launched map tasks=1
Data-local map tasks=1
Total time spent by all maps in occupied slots (ms)=9384
Total time spent by all reduces in occupied slots (ms)=0
Total time spent by all map tasks (ms)=9384
Total vcore-milliseconds taken by all map tasks=9384
Total megabyte-milliseconds taken by all map tasks=9609216

Map-Reduce Framework

Map input records=18
Map output records=16
Input split bytes=159
Spilled Records=0
Failed Shuffles=0
Merged Map outputs=0
GC time elapsed (ms)=97
CPU time spent (ms)=710
Physical memory (bytes) snapshot=65511424
Virtual memory (bytes) snapshot=339922944
Total committed heap usage (bytes)=16252928

File Input Format Counters

Bytes Read=733

File Output Format Counters

Bytes Written=662

```
[acadgild@localhost ~]$ hdfs dfs -ls
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputfilter
```

```
18/06/27 05:30:27 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 2018-06-27 05:29
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputfilter/_SUCCESS
```

```
-rw-r--r--  1 acadgild supergroup    662 2018-06-27 05:29
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputfilter/part-m-00000
```

```
[acadgild@localhost ~]$ hdfs dfs -cat
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputfilter/part-m-0000018/06/27 05:30:49  
WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using  
builtin-java classes where applicable
```

```
Samsung|Optima|14|Madhya Pradesh|132401|14200
```

```
Onida|Lucid|18|Uttar Pradesh|232401|16200
```

```
Akai|Decent|16|Kerala|922401|12200
```

```
Lava|Attention|20|Assam|454601|24200
```

```
Zen|Super|14|Maharashtra|619082|9200
```

```
Samsung|Optima|14|Madhya Pradesh|132401|14200
```

```
Onida|Lucid|18|Uttar Pradesh|232401|16200
```

```
Onida|Decent|14|Uttar Pradesh|232401|16200
```

```
Lava|Attention|20|Assam|454601|24200
```

```
Zen|Super|14|Maharashtra|619082|9200
```

```
Samsung|Optima|14|Madhya Pradesh|132401|14200
```

```
Samsung|Decent|16|Kerala|922401|12200
```

```
Lava|Attention|20|Assam|454601|24200
```

```
Samsung|Super|14|Maharashtra|619082|9200
```

```
Samsung|Super|14|Maharashtra|619082|9200
```

```
Samsung|Super|14|Maharashtra|619082|9200
```

Task 2:

Write a Map Reduce program to calculate the total units sold for each Company.

Solution2 :

Eclipse Code:

```
package com.acadgild.mapreduce.assignment.task2;

import java.io.IOException;
import org.apache.hadoop.conf.Configuration;
import org.apache.hadoop.fs.Path;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.LongWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapreduce.Job;
import org.apache.hadoop.mapreduce.Mapper;
import org.apache.hadoop.mapreduce.Reducer;
import org.apache.hadoop.mapreduce.lib.input.FileInputFormat;
import org.apache.hadoop.mapreduce.lib.output.FileOutputFormat;

public class CompanyUnit {
    public static class UnitMapper
        extends Mapper<LongWritable, Text, Text, IntWritable>{

        private final static IntWritable one = new IntWritable(1);

        public void map(LongWritable key, Text value, Context context
            ) throws IOException, InterruptedException {

            String valueString = value.toString();
            String[] SingleTelevisionData = valueString.split("\\|");

            context.write(new Text(SingleTelevisionData[0]),one);

        }
    }

    public static class UnitSumReducer
        extends Reducer<Text,IntWritable,Text,IntWritable> {
        private IntWritable result = new IntWritable();

        public void reduce(Text key, Iterable<IntWritable> values,
            Context context
            ) throws IOException, InterruptedException {

            int sum = 0;
            for (IntWritable val : values) {
                sum += val.get();
            }
            result.set(sum);
            context.write(key, result);
        }
    }
}
```

```

    public static void main(String[] args) throws Exception {
        Configuration conf = new Configuration();
        Job job = Job.getInstance(conf, "filter television");
        job.setJarByClass(CompanyUnit.class);
        job.setMapperClass(UnitMapper.class);
        job.setReducerClass(UnitSumReducer.class);
        job.setOutputKeyClass(Text.class);
        job.setOutputValueClass(IntWritable.class);
        FileInputFormat.addInputPath(job, new Path(args[0]));
        FileOutputFormat.setOutputPath(job, new Path(args[1]));
        System.exit(job.waitForCompletion(true) ? 0 : 1);
    }
}

```

Converted to jar : companyunit.jar

Execution:

```

[acadgild@localhost ~]$ hadoop jar /home/acadgild/Desktop/companyunit.jar
com.acadgild.mapreduce.assignment.task2.CompanyUnit
/user/acadgild/hadoopdata/assignment/mapreduce/task1/input/television.txt
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputcompanyunit
18/06/27 06:05:01 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your
platform... using builtin-java classes where applicable
18/06/27 06:05:03 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032
18/06/27 06:05:04 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not
performed. Implement the Tool interface and execute your application with ToolRunner to remedy this.
18/06/27 06:05:05 INFO input.FileInputFormat: Total input paths to process : 1
18/06/27 06:05:05 INFO mapreduce.JobSubmitter: number of splits:1
18/06/27 06:05:05 INFO mapreduce.JobSubmitter: Submitting tokens for job:
job_1530051047296_0011
18/06/27 06:05:06 INFO impl.YarnClientImpl: Submitted application
application_1530051047296_0011
18/06/27 06:05:06 INFO mapreduce.Job: The url to track the job:
http://localhost:8088/proxy/application_1530051047296_0011/
18/06/27 06:05:06 INFO mapreduce.Job: Running job: job_1530051047296_0011
18/06/27 06:05:17 INFO mapreduce.Job: Job job_1530051047296_0011 running in uber mode : false
18/06/27 06:05:17 INFO mapreduce.Job:  map 0% reduce 0%
18/06/27 06:05:25 INFO mapreduce.Job:  map 100% reduce 0%
18/06/27 06:05:36 INFO mapreduce.Job:  map 100% reduce 100%
18/06/27 06:05:36 INFO mapreduce.Job: Job job_1530051047296_0011 completed successfully
18/06/27 06:05:36 INFO mapreduce.Job: Counters: 49
    File System Counters
        FILE: Number of bytes read=225
        FILE: Number of bytes written=215401
        FILE: Number of read operations=0

```


FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=892
HDFS: Number of bytes written=43
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)=6066
Total time spent by all reduces in occupied slots (ms)=6955
Total time spent by all map tasks (ms)=6066
Total time spent by all reduce tasks (ms)=6955
Total vcore-milliseconds taken by all map tasks=6066
Total vcore-milliseconds taken by all reduce tasks=6955
Total megabyte-milliseconds taken by all map tasks=6211584
Total megabyte-milliseconds taken by all reduce tasks=7121920

Map-Reduce Framework

Map input records=18
Map output records=18
Map output bytes=183
Map output materialized bytes=225
Input split bytes=159
Combine input records=0
Combine output records=0
Reduce input groups=6
Reduce shuffle bytes=225
Reduce input records=18
Reduce output records=6
Spilled Records=36
Shuffled Maps =1
Failed Shuffles=0
Merged Map outputs=1
GC time elapsed (ms)=279
CPU time spent (ms)=1810
Physical memory (bytes) snapshot=236269568
Virtual memory (bytes) snapshot=681746432
Total committed heap usage (bytes)=139972608

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=733

File Output Format Counters

Bytes Written=43

```
[acadgild@localhost ~]$ hdfs dfs -ls
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputcompanyunit
```

```
18/06/27 06:06:06 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 2018-06-27 06:05
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputcompanyunit/_SUCCESS
```

```
-rw-r--r--  1 acadgild supergroup    43 2018-06-27 06:05
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputcompanyunit/part-r-00000
```

```
[acadgild@localhost ~]$ hdfs dfs -cat
```

```
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputcompanyunit/part-r-0000018/06/27  
06:06:57 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform...  
using builtin-java classes where applicable
```

```
Akai    1
```

```
Lava    3
```

```
NA       1
```

```
Onida    4
```

```
Samsung    7
```

```
Zen      2
```

Task 3:

Write a Map Reduce program to calculate the total units sold in each state for Onida company.

Solution3 :

Eclipse Code:

```
package com.acadgild.mapreduce.assignment.task3;
```

```
import java.io.IOException;
```

```
import org.apache.hadoop.conf.Configuration;
```

```
import org.apache.hadoop.fs.Path;
```

```
import org.apache.hadoop.io.IntWritable;
```

```
import org.apache.hadoop.io.LongWritable;
```

```
import org.apache.hadoop.io.Text;
```

```
import org.apache.hadoop.mapreduce.Job;
```

```
import org.apache.hadoop.mapreduce.Mapper;
```

```
import org.apache.hadoop.mapreduce.Reducer;
```

```
import org.apache.hadoop.mapreduce.lib.input.FileInputFormat;
```

```
import org.apache.hadoop.mapreduce.lib.output.FileOutputFormat;
```

```
public class OnidaStateUnit {  
    public static class OnidaUnitMapper
```

```

    extends Mapper<LongWritable, Text, Text, IntWritable>{

private final static IntWritable one = new IntWritable(1);

    public void map(LongWritable key, Text value, Context context
        ) throws IOException, InterruptedException {

        String valueString = value.toString();
        String[] SingleTelevisionData = valueString.split("\\|");

        if(SingleTelevisionData[0].matches("Onida"))
            context.write(new Text(SingleTelevisionData[3]),one);

    }
}

    public static class OnidaUnitSumReducer
    extends Reducer<Text,IntWritable,Text,IntWritable> {
private IntWritable result = new IntWritable();

    public void reduce(Text key, Iterable<IntWritable> values,
        Context context
        ) throws IOException, InterruptedException {

        int sum = 0;
        for (IntWritable val : values) {
            sum += val.get();
        }
        result.set(sum);
        context.write(key, result);
    }
}

    public static void main(String[] args) throws Exception {
        Configuration conf = new Configuration();
        Job job = Job.getInstance(conf, "filter television");
        job.setJarByClass(OnidaStateUnit.class);
        job.setMapperClass(OnidaUnitMapper.class);
        job.setReducerClass(OnidaUnitSumReducer.class);
        job.setOutputKeyClass(Text.class);
        job.setOutputValueClass(IntWritable.class);
        FileInputFormat.addInputPath(job, new Path(args[0]));
        FileOutputFormat.setOutputPath(job, new Path(args[1]));
        System.exit(job.waitForCompletion(true) ? 0 : 1);
    }
}

```

Converted to jar : onidaunit.jar

Execution:

```
[acadgild@localhost ~]$ hadoop jar /home/acadgild/Desktop/onidaunit.jar
com.acadgild.mapreduce.assignment.task3.OnidaStateUnit
```

/user/acadgild/hadoopdata/assignment/mapreduce/task1/input/television.txt
/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputonidaunit
18/06/27 06:26:39 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/06/27 06:26:40 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032
18/06/27 06:26:42 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the Tool interface and execute your application with ToolRunner to remedy this.
18/06/27 06:26:42 INFO input.FileInputFormat: Total input paths to process : 1
18/06/27 06:26:42 INFO mapreduce.JobSubmitter: number of splits:1
18/06/27 06:26:43 INFO mapreduce.JobSubmitter: Submitting tokens for job:
job_1530051047296_0012
18/06/27 06:26:43 INFO impl.YarnClientImpl: Submitted application
application_1530051047296_0012
18/06/27 06:26:43 INFO mapreduce.Job: The url to track the job:
http://localhost:8088/proxy/application_1530051047296_0012/
18/06/27 06:26:43 INFO mapreduce.Job: Running job: job_1530051047296_0012
18/06/27 06:26:56 INFO mapreduce.Job: Job job_1530051047296_0012 running in uber mode : false
18/06/27 06:26:56 INFO mapreduce.Job: map 0% reduce 0%
18/06/27 06:27:06 INFO mapreduce.Job: map 100% reduce 0%
18/06/27 06:27:16 INFO mapreduce.Job: map 100% reduce 100%
18/06/27 06:27:17 INFO mapreduce.Job: Job job_1530051047296_0012 completed successfully
18/06/27 06:27:18 INFO mapreduce.Job: Counters: 49

File System Counters

FILE: Number of bytes read=79
FILE: Number of bytes written=215137
FILE: Number of read operations=0
FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=892
HDFS: Number of bytes written=25
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)=8044
Total time spent by all reduces in occupied slots (ms)=8229
Total time spent by all map tasks (ms)=8044
Total time spent by all reduce tasks (ms)=8229
Total vcore-milliseconds taken by all map tasks=8044
Total vcore-milliseconds taken by all reduce tasks=8229
Total megabyte-milliseconds taken by all map tasks=8237056
Total megabyte-milliseconds taken by all reduce tasks=8426496

Map-Reduce Framework

Map input records=18
Map output records=4
Map output bytes=65

Map output materialized bytes=79
Input split bytes=159
Combine input records=0
Combine output records=0
Reduce input groups=2
Reduce shuffle bytes=79
Reduce input records=4
Reduce output records=2
Spilled Records=8
Shuffled Maps =1
Failed Shuffles=0
Merged Map outputs=1
GC time elapsed (ms)=369
CPU time spent (ms)=1990
Physical memory (bytes) snapshot=236556288
Virtual memory (bytes) snapshot=680697856
Total committed heap usage (bytes)=139993088

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=733

File Output Format Counters

Bytes Written=25

[acadgild@localhost ~]\$ hdfs dfs -ls

/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputonidaunit

18/06/27 06:29:08 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 2018-06-27 06:27

/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputonidaunit/_SUCCESS

-rw-r--r-- 1 acadgild supergroup 25 2018-06-27 06:27

/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputonidaunit/part-r-00000

[acadgild@localhost ~]\$ hdfs dfs -cat

/user/acadgild/hadoopdata/assignment/mapreduce/task1/outputonidaunit/part-r-00000

18/06/27 06:30:13 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

Kerala 1

Uttar Pradesh 3