

```
// WC_Runner.java
```

```
package com.wc;
```

```
import java.io.IOException;  
import org.apache.hadoop.fs.Path;  
import org.apache.hadoop.io.IntWritable;  
import org.apache.hadoop.io.Text;  
import org.apache.hadoop.mapred.FileInputFormat;  
import org.apache.hadoop.mapred.FileOutputFormat;  
import org.apache.hadoop.mapred.JobClient;  
import org.apache.hadoop.mapred.JobConf;  
import org.apache.hadoop.mapred.TextInputFormat;  
import org.apache.hadoop.mapred.TextOutputFormat;
```

```
public class WC_Runner {  
    public static void main(String[] args) throws IOException {  
        JobConf conf = new JobConf(WC_Runner.class);  
        conf.setJobName("WordCount");  
        conf.setOutputKeyClass(Text.class);  
        conf.setOutputValueClass(IntWritable.class);  
        conf.setMapperClass(WC_Mapper.class);  
        conf.setCombinerClass(WC_Reducer.class);  
        conf.setReducerClass(WC_Reducer.class);  
        conf.setInputFormat(TextInputFormat.class);  
        conf.setOutputFormat(TextOutputFormat.class);  
        FileInputFormat.setInputPaths(conf, new Path(args[0]));  
        FileOutputFormat.setOutputPath(conf, new Path(args[1]));  
        JobClient.runJob(conf);  
    }  
}
```

```
// WC_Mapper.java
```

```
package com.wc;
```

```
import java.io.IOException;
import java.util.StringTokenizer;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.LongWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapred.MapReduceBase;
import org.apache.hadoop.mapred.Mapper;
import org.apache.hadoop.mapred.OutputCollector;
import org.apache.hadoop.mapred.Reporter;
```

```
public class WC_Mapper extends MapReduceBase implements
Mapper<LongWritable,Text,Text,IntWritable>{
    private final static IntWritable one = new IntWritable(1);
    private Text word = new Text();

    public void map(
        LongWritable key,
        Text value,
        OutputCollector<Text,IntWritable> output,
        Reporter reporter
    ) throws IOException {
        String line = value.toString();
        StringTokenizer tokenizer = new StringTokenizer(line);

        while (tokenizer.hasMoreTokens()){
            word.set(tokenizer.nextToken());
            output.collect(word, one);
        }
    }
}
```

```
// WC_Reducer.java
```

```
package com.wc;
```

```
import java.io.IOException;
import java.util.Iterator;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapred.MapReduceBase;
import org.apache.hadoop.mapred.OutputCollector;
import org.apache.hadoop.mapred.Reducer;
import org.apache.hadoop.mapred.Reporter;
```

```
public class WC_Reducer extends MapReduceBase implements
Reducer<Text,IntWritable,Text,IntWritable> {
    public void reduce(
        Text key,
        Iterator<IntWritable> values,
        OutputCollector<Text,IntWritable> output,
        Reporter reporter
    ) throws IOException {
        int sum=0;
        while (values.hasNext()) {
            sum += values.next().get();
        }
        output.collect(key,new IntWritable(sum));
    }
}
```

### Input:

*HDFS is a storage unit of Hadoop*

*MapReduce is a processing tool for Hadoop*

### Output:

<i>HDFS</i>	<i>1</i>
<i>Hadoop</i>	<i>2</i>
<i>MapReduce</i>	<i>1</i>
<i>a</i>	<i>2</i>
<i>for</i>	<i>1</i>
<i>is</i>	<i>2</i>
<i>of</i>	<i>1</i>
<i>processing</i>	<i>1</i>
<i>storage</i>	<i>1</i>
<i>tool</i>	<i>1</i>
<i>unit</i>	<i>1</i>