

WordCount.java

```
import java.io.IOException;
import java.util.StringTokenizer;
import java.util.Collections;
import java.util.ArrayList;
import org.apache.hadoop.conf.Configuration;
import org.apache.hadoop.fs.Path;
import org.apache.hadoop.io.IntWritable;
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 WordCount {

    public static class TokenizerMapper
        extends Mapper<Object, Text, Text, IntWritable>{

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

        public void map(Object key, Text value, Context context) throws IOException,
            InterruptedException {
            StringTokenizer itr = new StringTokenizer(value.toString());
            ArrayList<String> uniqueWords = new ArrayList<String>();

            while (itr.hasMoreTokens()) {
                String current = itr.nextToken();
                if(!uniqueWords.contains(current)){
                    uniqueWords.add(current);
                }
            }

            Collections.sort(uniqueWords);

            for (int i = 0; i < uniqueWords.size(); ++i) {
                word.set(uniqueWords.get(i));
                context.write(word, one);
                for (int j = i + 1; j < uniqueWords.size(); ++j) {
                    word.set(uniqueWords.get(i) + ":" + uniqueWords.get(j));
                    context.write(word, one);
                }
            }
        }
    }

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

        public void reduce(Text key, Iterable<IntWritable> values,
            Context context
```

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        ) 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, "word count");
    job.setJarByClass(WordCount.class);
    job.setMapperClass(TokenizerMapper.class);
    job.setCombinerClass(IntSumReducer.class);
    job.setReducerClass(IntSumReducer.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);
}
}

```