Make sure that Hadoop is installed on your system with the Java SDK.

Steps

1. Open Eclipse> File > New > Java Project >(Name it – MRProgramsDemo) > Finish.
2. Right Click > New > Package (Name it - PackageDemo) > Finish.
3. Right Click on Package > New > Class (Name it - WordCount).
4. Add Following Reference Libraries:
    1. Right Click on Project > Build Path> Add External
        1. */usr/lib/hadoop-0.20/**hadoop-core.jar***
        2. *Usr/lib/hadoop-0.20/lib/**Commons-cli-1.2.jar***

Source Code:

```
package PackageDemo;


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;

import org.apache.hadoop.util.GenericOptionsParser;
```

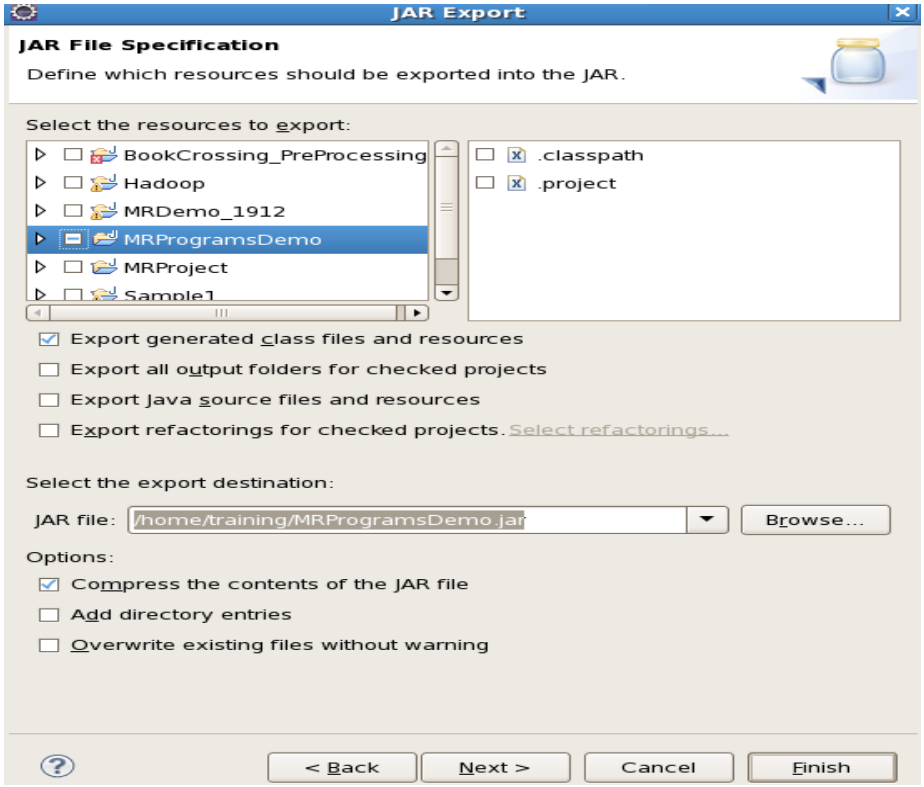
```
public class WordCount {
public static void main(String [] args) throws Exception
{
Configuration c=new Configuration();
String[] files=new GenericOptionsParser(c,args).getRemainingArgs();
Path input=new Path(files[0]);
Path output=new Path(files[1]);
Job j=new Job(c,"wordcount");
j.setJarByClass(WordCount.class);
j.setMapperClass(MapForWordCount.class);
j.setReducerClass(ReduceForWordCount.class);
j.setOutputKeyClass(Text.class);
j.setOutputValueClass(IntWritable.class);
FileInputFormat.addInputPath(j, input);
FileOutputFormat.setOutputPath(j, output);
System.exit(j.waitForCompletion(true)?0:1);
}
public static class MapForWordCount extends Mapper<LongWritable, Text, Text, IntWritable>{
public void map(LongWritable key, Text value, Context con) throws IOException,
InterruptedException
{
String line = value.toString();
String[] words=line.split(",");
for(String word: words )
{
    Text outputKey = new Text(word.toUpperCase().trim());
  IntWritable outputValue = new IntWritable(1);
  con.write(outputKey, outputValue);
}
}
}
```

```
public static class ReduceForWordCount extends Reducer<Text, IntWritable, Text, IntWritable>
{
public void reduce(Text word, Iterable<IntWritable> values, Context con) throws IOException,
InterruptedException
{
int sum = 0;
  for(IntWritable value : values)
  {
  sum += value.get();
  }
  con.write(word, new IntWritable(sum));
}


}


}
```

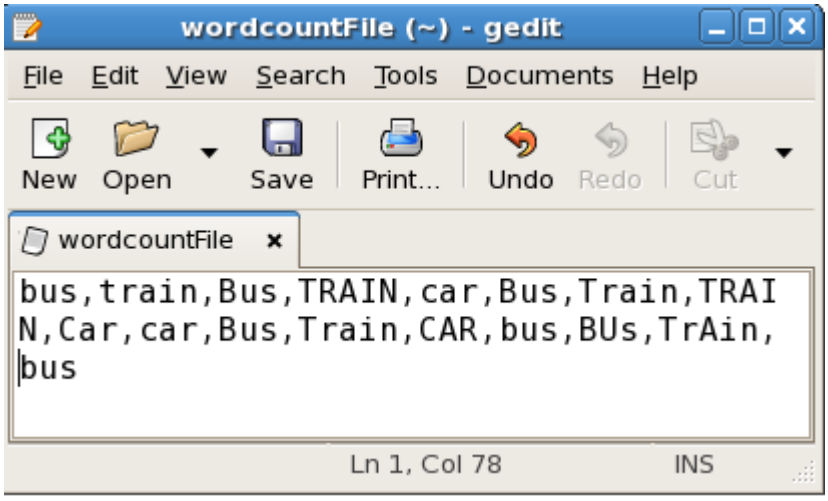
The above program consists of three classes:

- Driver class (Public, void, static, or main; this is the entry point).
- The `Map` class which **extends** the public class Mapper<KEYIN,VALUEIN,KEYOUT,VALUEOUT> and implements the `Map` function.
- The `Reduce` class which extends the public class Reducer<KEYIN,VALUEIN,KEYOUT,VALUEOUT> and implements the `Reduce` function.

6. Make a jar file Right Click on Project> Export> Select export destination as **Jar File** > next> Finish.



7. Take a text file and move it into HDFS format:



To move this into Hadoop directly, open the terminal and enter the following commands:

```
[training@localhost ~]$ hadoop fs -put wordcountFile wordCountFile
```

8. Run the jar file:

(Hadoop jar jarfilename.jar packageName.ClassName PathToInputTextFile PathToOutputDirectry)

```
[training@localhost ~]$ hadoop jar MRProgramsDemo.jar PackageDemo.WordCount
wordCountFile MRDir1
```

9. Open the result:

```
[training@localhost ~]$ hadoop fs -ls MRDir1

Found 3 items

-rw-r--r--   1 training supergroup          0 2016-02-23 03:36 /user/traini
ng/MRDir1/_SUCCESS
drwxr-xr-x   - training supergroup          0 2016-02-23 03:36 /user/traini
ng/MRDir1/_logs
-rw-r--r--   1 training supergroup         20 2016-02-23 03:36 /user/traini
ng/MRDir1/part-r-00000
```

```
[training@localhost ~]$ hadoop fs -cat MRDir1/part-r-00000

BUS     7

CAR     4

TRAIN   6
```