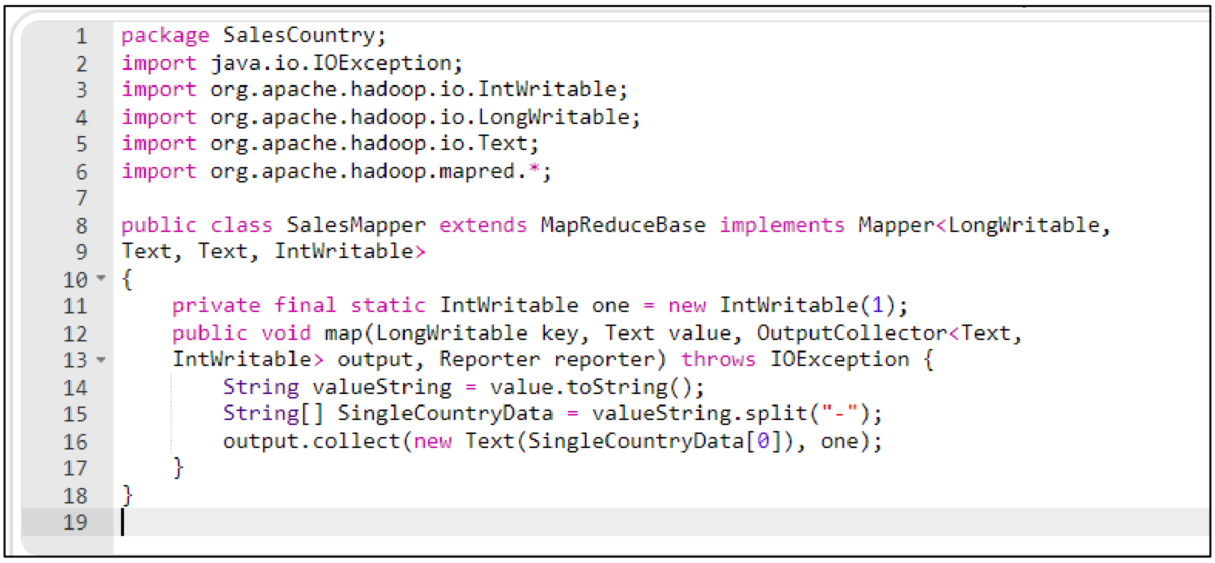
Practical Number: 12

Title: Design a distributed application using MapReduce which processes a log file of a system.

Java Code to process logfile

Mapper Class:

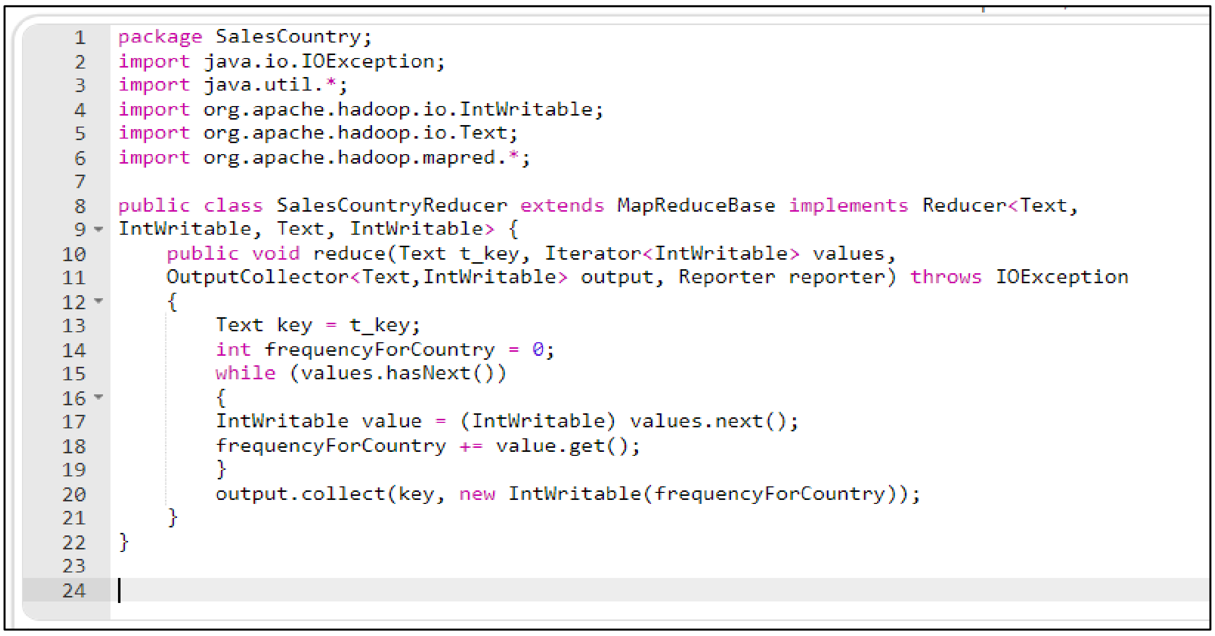


```java
package SalesCountry;
import java.io.IOException;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.LongWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapred.*;

public class SalesMapper extends MapReduceBase implements Mapper<LongWritable,
Text, Text, IntWritable>
{
    private final static IntWritable one = new IntWritable(1);
    public void map(LongWritable key, Text value, OutputCollector<Text,
    IntWritable> output, Reporter reporter) throws IOException {
        String valueString = value.toString();
        String[] SingleCountryData = valueString.split("-");
        output.collect(new Text(SingleCountryData[0]), one);
    }
}

```

Reducer Class:

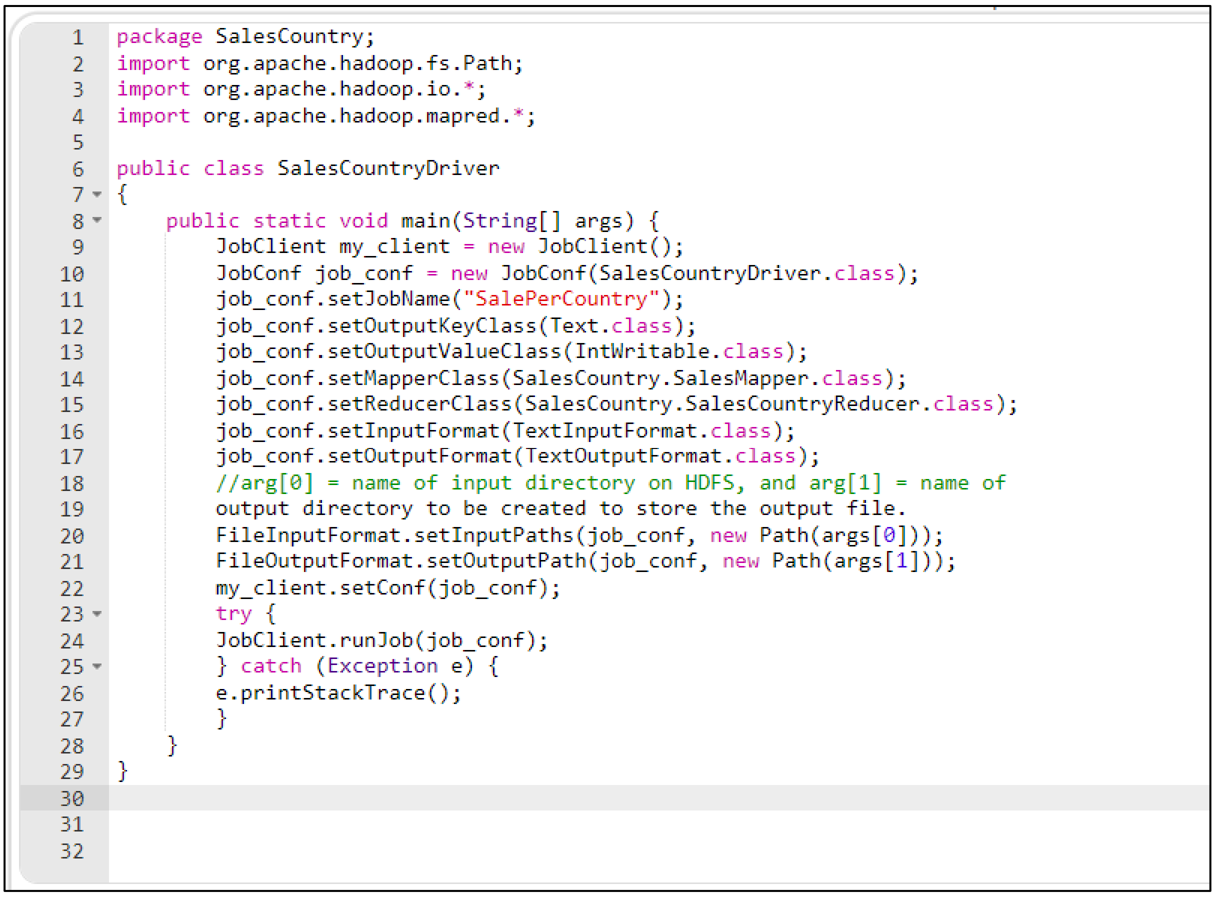


```java
package SalesCountry;
import java.io.IOException;
import java.util.*;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapred.*;

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


```

Driver Class:



```java
package SalesCountry;
import org.apache.hadoop.fs.Path;
import org.apache.hadoop.io.*;
import org.apache.hadoop.mapred.*;

public class SalesCountryDriver
{
    public static void main(String[] args) {
        JobClient my_client = new JobClient();
        JobConf job_conf = new JobConf(SalesCountryDriver.class);
        job_conf.setJobName("SalePerCountry");
        job_conf.setOutputKeyClass(Text.class);
        job_conf.setOutputValueClass(IntWritable.class);
        job_conf.setMapperClass(SalesCountry.SalesMapper.class);
        job_conf.setReducerClass(SalesCountry.SalesCountryReducer.class);
        job_conf.setInputFormat(TextInputFormat.class);
        job_conf.setOutputFormat(TextOutputFormat.class);
        //arg[0] = name of input directory on HDFS, and arg[1] = name of
        output directory to be created to store the output file.
        FileInputFormat.setInputPaths(job_conf, new Path(args[0]));
        FileOutputFormat.setOutputPath(job_conf, new Path(args[1]));
        my_client.setConf(job_conf);
        try {
        JobClient.runJob(job_conf);
        } catch (Exception e) {
        e.printStackTrace();
        }
    }
}
```

<u>**Input File:**</u>

Pune

Mumbai

Nashik

Pune

Nashik

Kolapur