Big Data Exp 1A : 1211061

Max Temperature:

Driver:

```
//PNSDriver.java
package pns;

import org.apache.hadoop.conf.Configuration;
import org.apache.hadoop.fs.Path;
import org.apache.hadoop.io.FloatWritable;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapreduce.Job;
import org.apache.hadoop.mapreduce.lib.input.FileInputFormat;
import org.apache.hadoop.mapreduce.lib.output.FileOutputFormat;

public class PNSDriver {

	public static void main(String[] args) throws Exception {
		Configuration conf = new Configuration();
		Job job = Job.getInstance(conf, "JobName");
		job.setJarByClass(pns.PNSDriver.class);
		job.setMapperClass(pns.PNSMapper.class);

		job.setReducerClass(pns.PNSReducer.class);

		// TODO: specify output types
		job.setMapOutputKeyClass(IntWritable.class);
		job.setMapOutputValueClass(FloatWritable.class);

		job.setOutputKeyClass(Text.class);
		job.setOutputValueClass(Text.class);

		// TODO: specify input and output DIRECTORIES (not files)
		FileInputFormat.setInputPaths(job, new
Path("/home/kjsce/Desktop/weather_data_input"));
		FileOutputFormat.setOutputPath(job, new
Path("/home/kjsce/Desktop/weather_data_output"));

		if (!job.waitForCompletion(true))
			return;
	}

}
```

Reducer:

```
//PNSReducer.java
package pns;

import java.io.IOException;
import java.util.Iterator;

import org.apache.hadoop.io.FloatWritable;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapreduce.Reducer;

public class PNSReducer extends
		Reducer<IntWritable, FloatWritable, IntWritable, FloatWritable> {

	public void reduce(IntWritable _key, Iterable<FloatWritable> values, Context context)
			throws IOException, InterruptedException {
		// process values
		Iterator<FloatWritable> iterator=values.iterator();
		float maxtemp=0;
		if(iterator.hasNext())
		{
			maxtemp=iterator.next().get();

		}
		while(iterator.hasNext()){
			float temp=iterator.next().get();
			if(temp> maxtemp)
			{
				maxtemp=temp;
			}
		}
		context.write(_key, new FloatWritable(maxtemp));

	}

}
```

Mapper:

```
//PNSMapper.java
package pns;

import java.io.IOException;

import org.apache.commons.lang.StringUtils;
import org.apache.hadoop.io.FloatWritable;
import org.apache.hadoop.io.IntWritable;
import org.apache.hadoop.io.LongWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapreduce.Mapper;
```

```
public class PNSMapper
		extends
		Mapper<LongWritable, Text, org.apache.hadoop.io.IntWritable,
org.apache.hadoop.io.FloatWritable> {

	public void map(LongWritable ikey, Text ivalue, Context context)
			throws IOException, InterruptedException {
		String line=ivalue.toString();
		String[] tokens=StringUtils.split(line, '|');
		if(tokens.length ==5)
		{
			int year=Integer.parseInt(tokens[1]);
			float temp=Float.parseFloat(tokens[4]);
			//write the output to the mapper
			context.write(new IntWritable(year), new FloatWritable(temp));

		}

	}

}
```

Weather_data_input:

```
3300|1900|0101|0300|23
3300|1900|0101|0400|24
3300|1900|0301|0200|26
3300|1900|0305|0230|24
3300|1900|0312|0100|30
3300|1900|0412|0300|29
3301|1900|0312|0100|31
3301|1900|0412|0400|23
```

Weather_data_output:

```
1900    31.0
1901    45.0
```