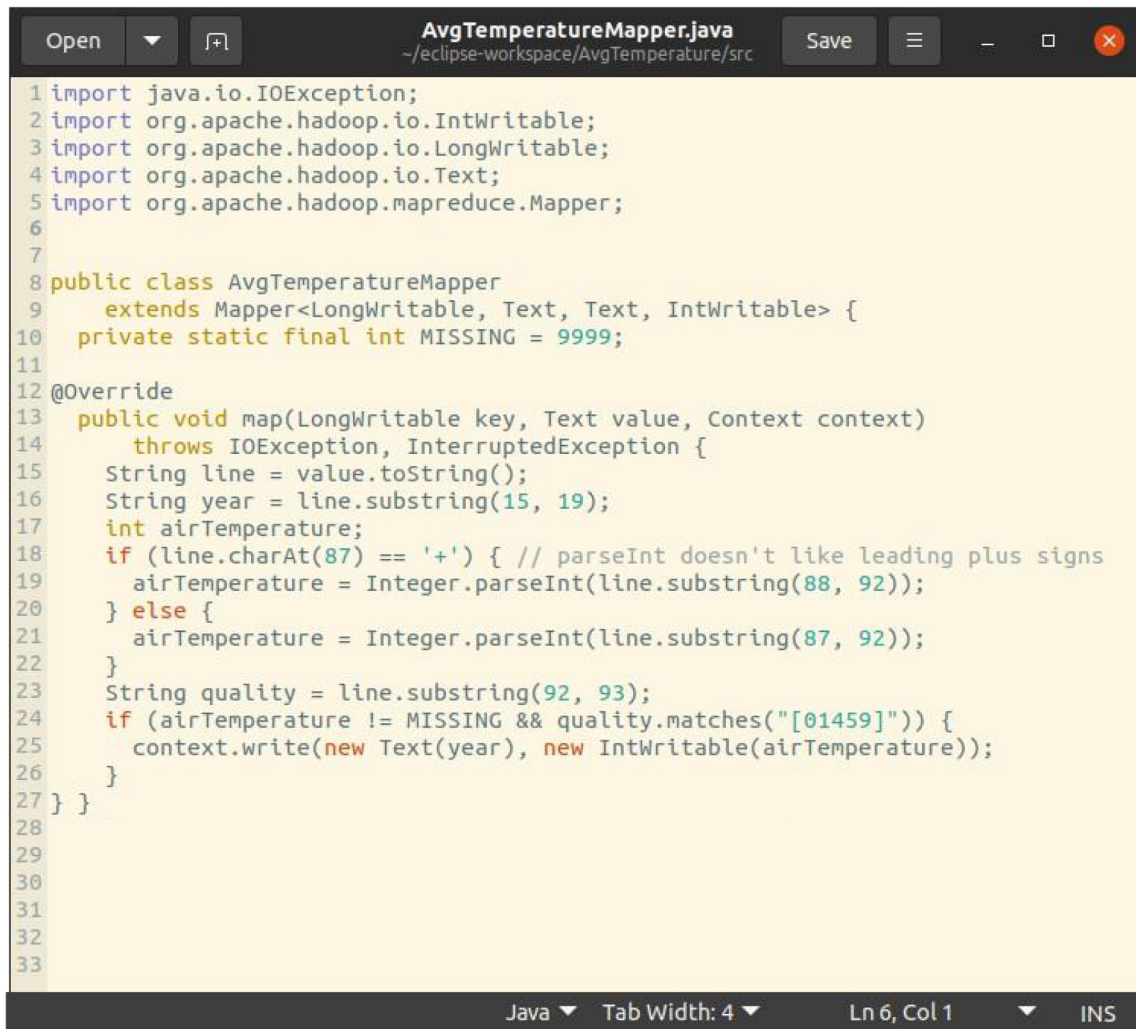


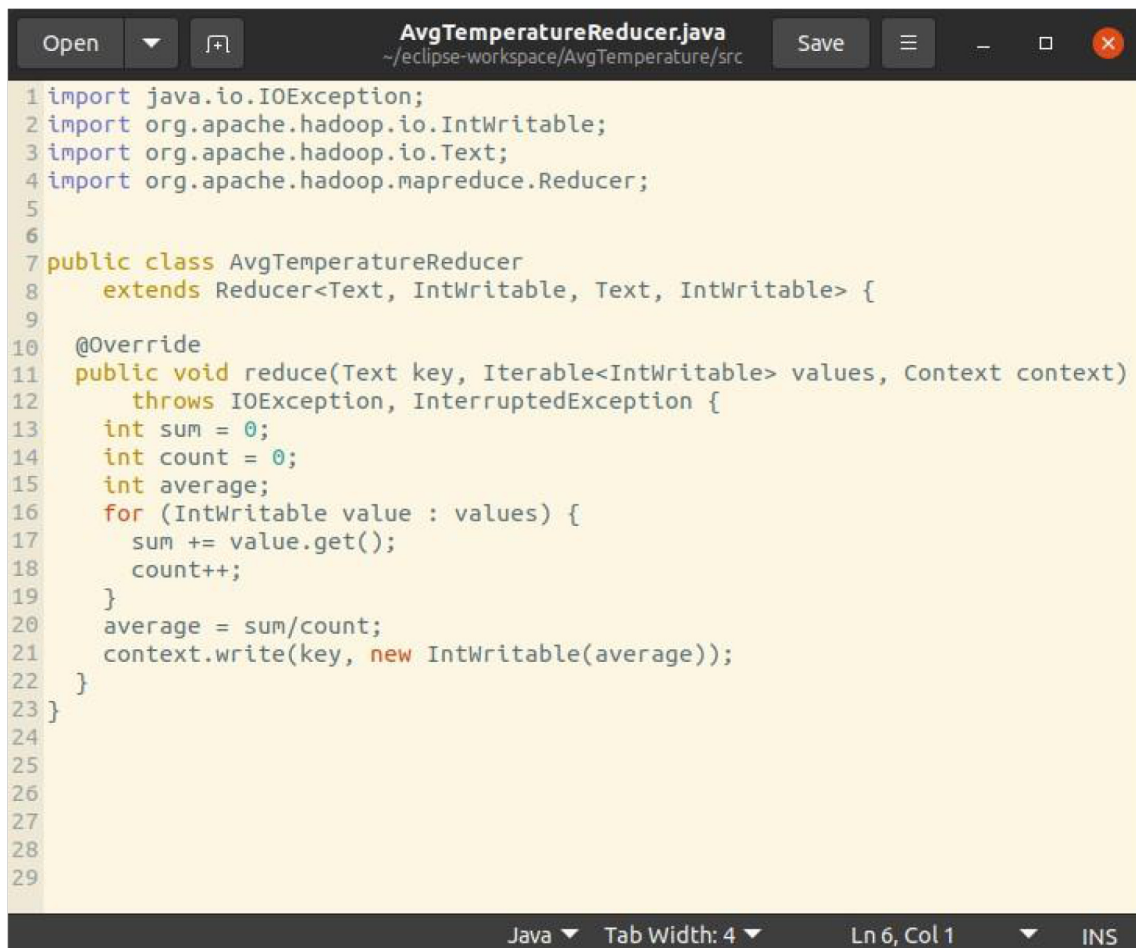
## SCREENSHOTS OF UPDATED CODE:



```
1 import java.io.IOException;
2 import org.apache.hadoop.io.IntWritable;
3 import org.apache.hadoop.io.LongWritable;
4 import org.apache.hadoop.io.Text;
5 import org.apache.hadoop.mapreduce.Mapper;
6
7
8 public class AvgTemperatureMapper
9     extends Mapper<LongWritable, Text, Text, IntWritable> {
10     private static final int MISSING = 9999;
11
12     @Override
13     public void map(LongWritable key, Text value, Context context)
14         throws IOException, InterruptedException {
15         String line = value.toString();
16         String year = line.substring(15, 19);
17         int airTemperature;
18         if (line.charAt(87) == '+') { // parseInt doesn't like leading plus signs
19             airTemperature = Integer.parseInt(line.substring(88, 92));
20         } else {
21             airTemperature = Integer.parseInt(line.substring(87, 92));
22         }
23         String quality = line.substring(92, 93);
24         if (airTemperature != MISSING && quality.matches("[01459]")) {
25             context.write(new Text(year), new IntWritable(airTemperature));
26         }
27     }
28 }
29
30
31
32
33
```

Java Tab Width: 4 Ln 6, Col 1 INS

*Mapper Class*



```
1 import java.io.IOException;
2 import org.apache.hadoop.io.IntWritable;
3 import org.apache.hadoop.io.Text;
4 import org.apache.hadoop.mapreduce.Reducer;
5
6
7 public class AvgTemperatureReducer
8     extends Reducer<Text, IntWritable, Text, IntWritable> {
9
10     @Override
11     public void reduce(Text key, Iterable<IntWritable> values, Context context)
12         throws IOException, InterruptedException {
13         int sum = 0;
14         int count = 0;
15         int average;
16         for (IntWritable value : values) {
17             sum += value.get();
18             count++;
19         }
20         average = sum/count;
21         context.write(key, new IntWritable(average));
22     }
23 }
24
25
26
27
28
29
```

Java Tab Width: 4 Ln 6, Col 1 INS

*Reducer Class*

Open▼🔍Save☰-□✖

AvgTemperature.java  
~/eclipse-workspace/AvgTemperature/src

```
1 import org.apache.hadoop.conf.Configuration;
2 import org.apache.hadoop.fs.Path;
3 import org.apache.hadoop.io.IntWritable;
4 import org.apache.hadoop.io.Text;
5 import org.apache.hadoop.mapreduce.Job;
6 import org.apache.hadoop.mapreduce.lib.input.FileInputFormat;
7 import org.apache.hadoop.mapreduce.lib.output.FileOutputFormat;
8
9 public class AvgTemperature {
10     public static void main(String[] args) throws Exception {
11         if (args.length != 2) {
12             System.err.println("Usage: AvgTemperature <input path> <output path>");
13             System.exit(-1);
14         }
15
16         Configuration conf = new Configuration();
17         Job job = Job.getInstance(conf, "Avg temprature");
18         job.setJarByClass(AvgTemperature.class);
19         job.setJobName("Avg temprature");
20         FileInputFormat.addInputPath(job, new Path(args[0]));
21         FileOutputFormat.setOutputPath(job, new Path(args[1]));
22         job.setMapperClass(AvgTemperatureMapper.class);
23         job.setReducerClass(AvgTemperatureReducer.class);
24         job.setOutputKeyClass(Text.class);
25         job.setOutputValueClass(IntWritable.class);
26         System.exit(job.waitForCompletion(true) ? 0 : 1);
27     }
28 }
29
30
31
32
33
34
```

Java ▾ Tab Width: 4 ▾ Ln 5, Col 31 ▾ INS

Main Class

## TERMINAL SCREENSHOTS:

hadoop@brm42: ~/ssh

```
hadoop@brm42:~$ cd .ssh
hadoop@brm42:~/ssh$ hdfs namenode -format
2022-03-15 22:09:51,782 INFO namenode.NameNode: STARTUP_MSG:
/*****
STARTUP_MSG: Starting NameNode
STARTUP_MSG:   host = brm42/192.168.0.105
STARTUP_MSG:   args = [-format]
STARTUP_MSG:   version = 3.3.1
STARTUP_MSG:   classpath = /home/hadoop/hadoop-3.3.1/etc/hadoop:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/nimbus-jose-jwt-9.8.1.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/token-provider-1.0.1.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/paranamer-2.3.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/kerb-admin-1.0.1.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/kerby-xdr-1.0.1.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/commons-collections-3.2.2.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jersey-servlet-1.19.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/curator-client-4.2.0.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/log4j-1.2.17.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/avro-1.7.7.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/commons-io-2.8.0.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/asm-5.0.4.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jersey-json-1.19.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/commons-compress-1.19.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/slf4j-api-1.7.30.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/kerb-util-1.0.1.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jersey-server-1.19.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/httpclient-4.5.13.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jetty-util-9.4.40.v20210413.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/re2j-1.1.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/checker-qual-2.5.2.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jetty-server-9.4.40.v20210413.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jsr311-api-1.1.1.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/slf4j-log4j12-1.7.30.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/woodstox-core-5.3.0.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jackson-xc-1.9.13.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/htrace-core-4.1.0-incubating.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/metrics-core-3.2.4.jar:/home/hadoop/hadoop-3.3.1/share/hadoop/common/lib/jetty-servlet-9.4.40.
*****/
hadoop@brm42:~/ssh$
```

```
hadoop@brm42:~/ssh$ start-dfs.sh
Starting namenodes on [localhost]
Starting datanodes
Starting secondary namenodes [brm42]
hadoop@brm42:~/ssh$ hadoop fs -mkdir /user
hadoop@brm42:~/ssh$ hadoop fs -mkdir /user/brm42
hadoop@brm42:~/ssh$
```

```
hadoop@brm42:~/ssh$ hadoop jar ~/hadoopMR/AvgTemp.jar AvgTemperature input output
22:18:56 15/03/22 INFO impl.MetricsConfig: Loaded properties from hadoop-metrics2.properties
```

```
hadoop@brm42:~/ssh$ hadoop fs -ls /user/brm42/input
-rw-r--r-- 1 hadoop/hadoop 530 2022-03-15 22:18:56 input.txt
hadoop@brm42:~/ssh$ hadoop fs -copyFromLocal ~/hadoopMR/input.txt /user/brm42/input
```

# OUTPUT AND HADOOP SCREENSHOTS:



Output of the code

