06/05/25 Lab 8 : Mean max Temperature

* MM Mapper.java

```
package mm;

import java.io.IOException;
import org.apache.hadoop.io;
import org.apache.hadoof mapreduce;

public class mmMapper extends Mapper
<LongWritable, Text, Text, IntWritable>{
 public static final int MISSING = 9999;

 public void map (LongWritable key,
 Text value, Mapper <LongWritable, Text,
 Text, IntWritable>. Context .Context )
 throws IOException , InterruptedException {

 int temperature;
 String line = value. toString();
 String month = line. substring (19,21);
 if ( line .charAt (87) == '+' ){
 temperature = Integer .parseInt ( line.
 substring (88,92));
 }
 else {
 temperature = Integer.parseInt ( line.
 substring (87,92));
 }
 String quality = line .substring (92,93)
```

```
if ( temperature ! = 9999 && quality.
matches ( "[0.1.4.5.9]"))
context.write ( new Text ( month ), new
IntWritable ( temperature ) ;
}
}
```

- MMReducer.java

```
package mm;

import java.io.Exception;
import org.apache.hadoop.io.IO;
import org.apache.hadoop.mapreduce.Reducer

public class MMReducer extends <Text
IntWritable, Text, IntWritable > {

public void reducer ( Text key, Iterable
<IntWritable > values, Reducer < Text,
IntWritable ! Text, IntWritable > Context
context ) throws IOException, Interrupted
Exception {

int max_temp = 0;
int total_temp = 0;
int count = 0;
int days = 0;
for ( IntWritable value : values ) {
    int temp = value.get ();
    if ( temp > max_temp )
        max_temp = temp;
```

```java
count++;
if (count == 7) {
    total_temp += max_temp;
    max_temp = 0;
    count = 0;
    days++;
}
}

context.write(key, new IntWritable
    (total_temp / days));
}
}
```

* **MMDriver.java**

```java
package mm;

import org.apache.hadoop.conf.Configuration;
import org.apache.hadoop.fs.Path;
import org.apache.hadoop.io;
import org.apache.hadoop.mapreduce;

public class MMDriver {
    public static void main (String[] args)
    throws exception {

        if (args.length != 2) {
            System.err.println ("Usage : MMDriver
            <input path> <output path>");
            System.exit(-1);
        }
```

```
Configuration conf = new Configuration ();
Job job = Job.getInstance (conf, "Max
Temperature");
job.setJarbyClass (MaxDriver.class);
job.setJarByClass (MaxDriver.class);

FileInputFormat.addInputPath (job,
new Path (args [0]));
FileOutputFormat.setOutputPath (job,
new Path (args [1]));

job.setMapperClass (MaxMapper.class);
job.setReducerClass (MaxReducer.class);

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

System.exit (job.waitForCompletion (true)
? 0 : 1);
}
}
```

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