**Assignment 21.2**

**Explain the different methods of**

**● mapper class and**

**● reducer class**

**MAPPER CLASS:**

1. **Setup:**

protected void setup(org.apache.hadoop.mapreduce.Mapper.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

***Called once at the beginning of the task.***

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

1. **Map:**

protected void map([KEYIN](https://hadoop.apache.org/docs/current/api/org/apache/hadoop/mapreduce/Mapper.html) key,

[VALUEIN](https://hadoop.apache.org/docs/current/api/org/apache/hadoop/mapreduce/Mapper.html) value,

org.apache.hadoop.mapreduce.Mapper.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

***Called once for each key/value pair in the input split. Most applications should override this, but the default is the identity function.***

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

1. **Cleanup:**

protected void cleanup(org.apache.hadoop.mapreduce.Mapper.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

***Called once at the end of the task.***

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

1. **Run:**

public void run(org.apache.hadoop.mapreduce.Mapper.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

***Expert users can override this method for more complete control over the execution of the Mapper.***

**Parameters:**

**context -**

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

**Reducer Class:**

1. **Setup:**

protected void [setup](https://hadoop.apache.org/docs/r2.7.0/api/src-html/org/apache/hadoop/mapreduce/Reducer.html#line.136)(org.apache.hadoop.mapreduce.Reducer.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

Called once at the start of the task.

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

1. **Reduce:**

protected void [reduce](https://hadoop.apache.org/docs/r2.7.0/api/src-html/org/apache/hadoop/mapreduce/Reducer.html#line.147)([KEYIN](https://hadoop.apache.org/docs/r2.7.0/api/org/apache/hadoop/mapreduce/Reducer.html) key,

[Iterable](http://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<[VALUEIN](https://hadoop.apache.org/docs/r2.7.0/api/org/apache/hadoop/mapreduce/Reducer.html)> values,

org.apache.hadoop.mapreduce.Reducer.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

This method is called once for each key. Most applications will define their reduce class by overriding this method. The default implementation is an identity function.

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

1. **Cleanup:**

protected void [cleanup](https://hadoop.apache.org/docs/r2.7.0/api/src-html/org/apache/hadoop/mapreduce/Reducer.html#line.157)(org.apache.hadoop.mapreduce.Reducer.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

Called once at the end of the task.

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

1. **Run:**

public void [run](https://hadoop.apache.org/docs/r2.7.0/api/src-html/org/apache/hadoop/mapreduce/Reducer.html#line.167)(org.apache.hadoop.mapreduce.Reducer.Context context)

throws [IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true),

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)

Advanced application writers can use the [run(org.apache.hadoop.mapreduce.Reducer.Context)](https://hadoop.apache.org/docs/r2.7.0/api/org/apache/hadoop/mapreduce/Reducer.html#run(org.apache.hadoop.mapreduce.Reducer.Context)) method to control how the reduce task works.

**Throws:**

[IOException](http://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

[InterruptedException](http://docs.oracle.com/javase/7/docs/api/java/lang/InterruptedException.html?is-external=true)