**Roll No: 20BCE057**

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**Course Code: 2CS702**

**Practical No: 5**

**Aim: Design and implement the MapReduce program to find the sum of given values**.

**Output:**

**SumDriver.java**

import org.apache.hadoop.conf.Configuration;

import org.apache.hadoop.fs.Path;

import org.apache.hadoop.io.\*;

import org.apache.hadoop.mapreduce.Job;

import org.apache.hadoop.mapreduce.lib.input.FileInputFormat;

import org.apache.hadoop.mapreduce.lib.output.FileOutputFormat;

public class SumDriver {

    public static void main(String[] args) throws Exception {

        Configuration conf = new Configuration();

        Job job = Job.getInstance(conf, "Sum Calculation");

        job.setJarByClass(SumDriver.class);

        job.setMapperClass(SumMapper.class);

        job.setReducerClass(SumReducer.class);

        job.setOutputKeyClass(Text.class);

        job.setOutputValueClass(LongWritable.class);

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

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

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

    }

}

SumMapper.java

import java.io.IOException;

import org.apache.hadoop.io.\*;

import org.apache.hadoop.mapreduce.\*;

public class SumMapper extends Mapper<LongWritable, Text, Text, LongWritable> {

    private Text outputKey = new Text("sum");

    private LongWritable outputValue = new LongWritable();

    @Override

    public void map(LongWritable key, Text value, Context context) throws IOException,

            InterruptedException {

        try {

            // Parse the input value as a long

            long inputValue = Long.parseLong(value.toString());

            // Set the output value as the parsed long

            outputValue.set(inputValue);

            // Emit the key-value pair

            context.write(outputKey, outputValue);

        } catch (NumberFormatException e) {

            // Handle invalid input (non-numeric values) if necessary

        }

    }

}

SumReducer.java

import java.io.IOException;

import org.apache.hadoop.io.\*;

import org.apache.hadoop.mapreduce.\*;

public class SumReducer extends Reducer<Text, LongWritable, Text, LongWritable> {

    private LongWritable result = new LongWritable();

    @Override

    public void reduce(Text key, Iterable<LongWritable> values, Context context)

            throws IOException, InterruptedException {

        long sum = 0;

        // Calculate the sum of all values in the iterable

        for (LongWritable value : values) {

            sum += value.get();

        }

        // Set the result as the sum

        result.set(sum);

        // Emit the final result

        context.write(key, result);

    }

}









