//1 a) Is the number of petitions with Data Engineer job title increasing over time?

package h1b;

import java.io.IOException;

import org.apache.hadoop.conf.Configuration;

import org.apache.hadoop.fs.Path;

import org.apache.hadoop.io.IntWritable;

import org.apache.hadoop.io.LongWritable;

import org.apache.hadoop.io.Text;

import org.apache.hadoop.mapreduce.Job;

import org.apache.hadoop.mapreduce.Mapper;

import org.apache.hadoop.mapreduce.Reducer;

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

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

public class Question1a {

public static class MyMapper extends Mapper<LongWritable, Text, Text, Text> {

public void map(LongWritable key, Text value, Context con)

throws IOException, InterruptedException {

String[] str = value.toString().split("\t");

String year = str[7];

String job\_title = str[4];

String petition =str[2];

if (str[4].contains("DATA ENGINEER")) {

con.write(new Text(year), new Text(petition));

}

}

}

public static class MyReducer extends Reducer<Text,Text,Text,IntWritable>

{

public void reduce(Text key,Iterable<Text> value,Context con) throws IOException, InterruptedException

{

int year=0;

int count=0;

double growthpercentage= 0;

String output = " ";

for(Text val:value)

{

count++;

}

if(year!=0){

growthpercentage = ((double)(count-year)/year)\*100;

String.format("%.2f%%", growthpercentage);

}

output = String.format("%d",count)+","+growthpercentage;

year = count;

con.write(key,new IntWritable(count));

}

}

public static void main(String[] args) throws IllegalArgumentException,

IOException, ClassNotFoundException, InterruptedException {

Configuration con = new Configuration();

Job job = Job.getInstance(con, "hello");

job.setJarByClass(Question1a.class);

job.setMapperClass(MyMapper.class);

job.setMapOutputKeyClass(Text.class);

job.setMapOutputValueClass(Text.class);

job.setReducerClass(MyReducer.class);

job.setOutputKeyClass(Text.class);

job.setOutputValueClass(IntWritable.class);

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

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

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

}

}