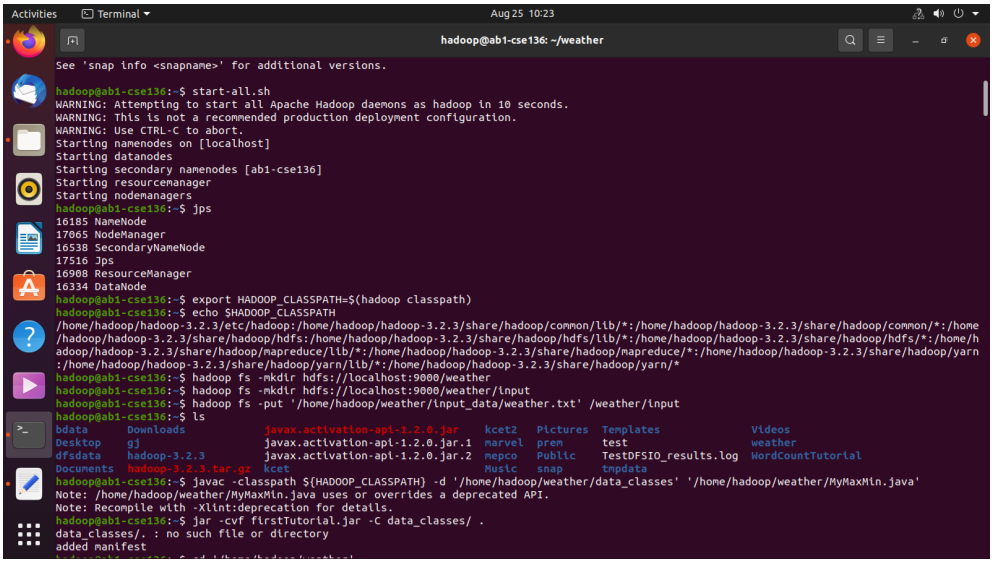
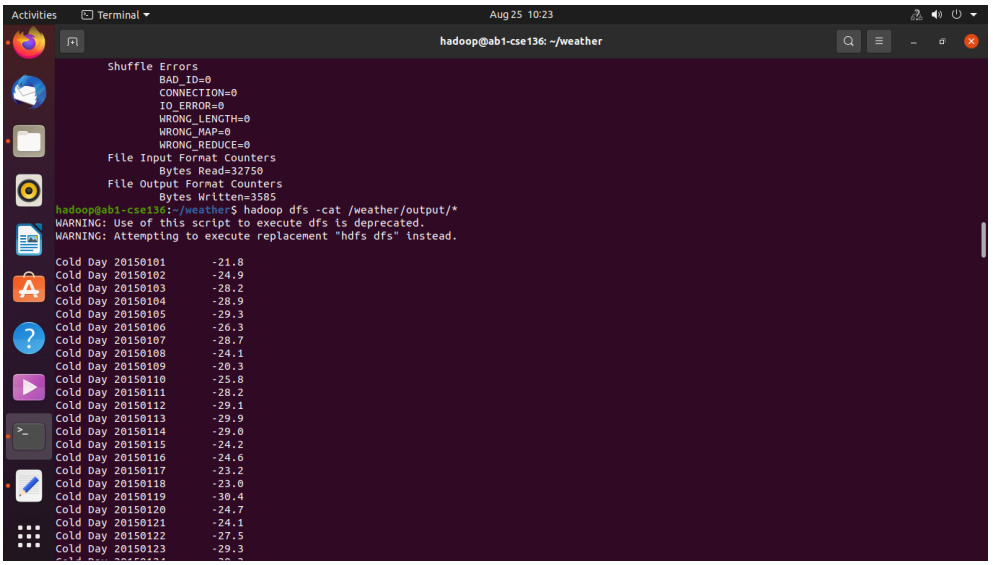
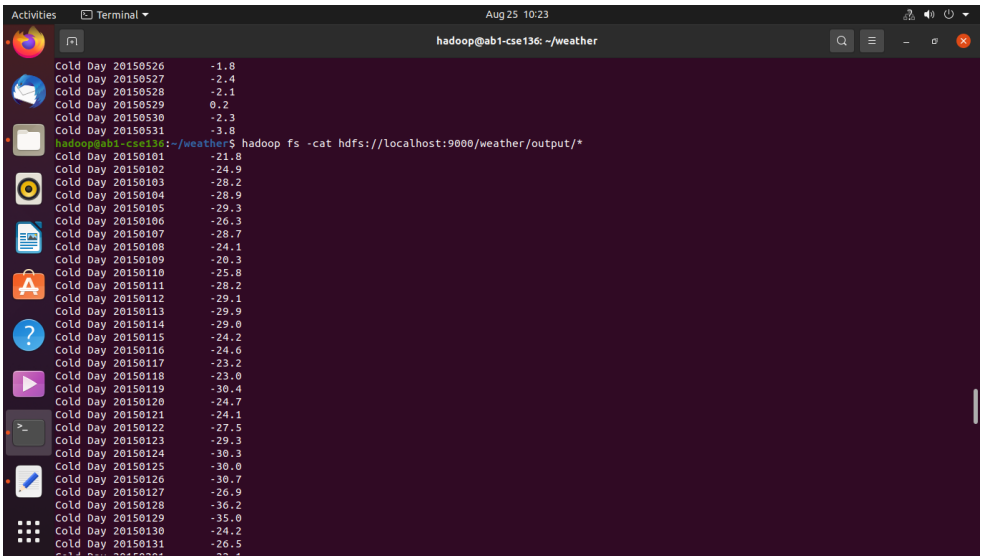
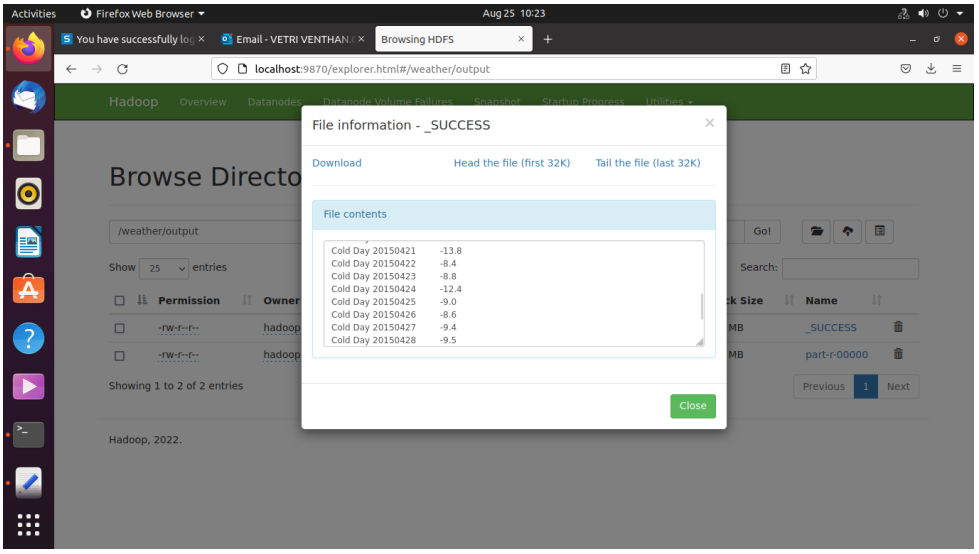
```
import java.io.IOException;
import java.util.Iterator;
import org.apache.hadoop.fs.Path;
import org.apache.hadoop.io.LongWritable;
import org.apache.hadoop.io.Text;
import org.apache.hadoop.mapreduce.lib.input.FileInputFormat;
import org.apache.hadoop.mapreduce.lib.output.FileOutputFormat;
import org.apache.hadoop.mapreduce.lib.output.TextOutputFormat;
import org.apache.hadoop.mapreduce.lib.input.TextInputFormat;
import org.apache.hadoop.mapreduce.Job;
import org.apache.hadoop.mapreduce.Mapper;
import org.apache.hadoop.mapreduce.Reducer;
import org.apache.hadoop.conf.Configuration;
public class MyMaxMin {
   //Mapper
   /**
   *MaxTemperatureMapper class is static and extends Mapper abstract class
   having four hadoop generics type LongWritable, Text, Text, Text.
   */
   public static class MaxTemperatureMapper extends
                     Mapper<LongWritable, Text, Text, Text> {
          /**
          * @method map
          * This method takes the input as text data type.
          * Now leaving the first five tokens,it takes 6th token is taken as temp_max
and
          * 7th token is taken as temp_min. Now temp_max > 35 and temp_min < 10
are passed to the reducer.
          */
          @Override
          public void map(LongWritable arg0, Text Value, Context context)
                              throws IOException, InterruptedException {
          //Converting the record (single line) to String and storing it in a String
variable line                    String line = Value.toString();
          //Checking if the line is not empty
                    if (!(line.length() == 0))
                    {
                    String date = line.substring(6, 14);          //date
                    float temp_Max = Float.parseFloat(line.substring(39, 45).trim());
//maximum temperature
                    float temp_Min = Float.parseFloat(line.substring(47, 53).trim());
//minimum temperature
                    //if maximum temperature is greater than 35 , its a hot day
          if (temp_Max > 35.0) {
                    context.write(new Text("Hot Day " + date),new
Text(String.valueOf(temp_Max)));     // Hot day
                                                  }
                              //if minimum temperature is less than 10 , its a cold day
          if (temp_Min < 10) {
   context.write(new Text("Cold Day " + date),new Text(String.valueOf(temp_Min)));
          // Cold day
                                        }
                    }
          }
   }

//Reducer
   /**
   *MaxTemperatureReducer class is static and extends Reducer abstract class
   having four hadoop generics type Text, Text, Text, Text.
```

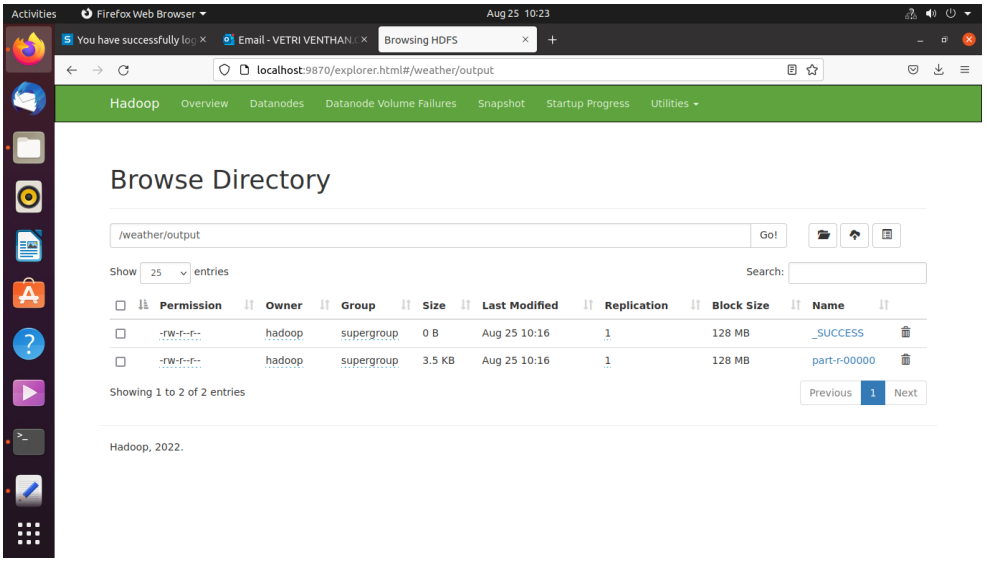
```
   */
      public static class MaxTemperatureReducer extends
                  Reducer<Text, Text, Text, Text> {
         /**
         * @method reduce
         * This method takes the input as key and list of values pair from mapper, it
does aggregation
         * based on keys and produces the final context.
         */
                  public void reduce(Text Key, Iterator<Text> Values, Context context)
                        throws IOException, InterruptedException {
                        //putting all the values in temperature variable of type String
                              String temperature = Values.next().toString();
                  context.write(Key, new Text(temperature));
         }
   }
     /**
   * @method main
   * This method is used for setting all the configuration properties.
   * It acts as a driver for map reduce code.
   */
      public static void main(String[] args) throws Exception {
                        //reads the default configuration of cluster from the
configuration xml files
         Configuration conf = new Configuration();
                  //Initializing the job with the default configuration of the cluster

         Job job = new Job(conf, "weather example");
         job.setJarByClass(MyMaxMin.class);  //Assigning the driver class name
         job.setMapOutputKeyClass(Text.class); //Key type coming out of mapper
         job.setMapOutputValueClass(Text.class); //value type coming out of mapper
         job.setMapperClass(MaxTemperatureMapper.class);                  //Defining
the mapper class name
                  job.setReducerClass(MaxTemperatureReducer.class);
//Defining the reducer class name
         //Defining input Format class which is responsible to parse the dataset into a
key value pair
         job.setInputFormatClass(TextInputFormat.class);

         //Defining output Format class which is responsible to parse the dataset into
a key value pair
         job.setOutputFormatClass(TextOutputFormat.class);
         //setting the second argument as a path in a path variable
         Path OutputPath = new Path(args[1]);
         //Configuring the input path from the filesystem into the job
         FileInputFormat.addInputPath(job, new Path(args[0]));
         //Configuring the output path from the filesystem into the job
         FileOutputFormat.setOutputPath(job, new Path(args[1]));
         //deleting the context path automatically from hdfs so that we don't have
delete it explicitly
         OutputPath.getFileSystem(conf).delete(OutputPath);
         //exiting the job only if the flag value becomes false
         System.exit(job.waitForCompletion(true) ? 0 : 1);

   }
}
```

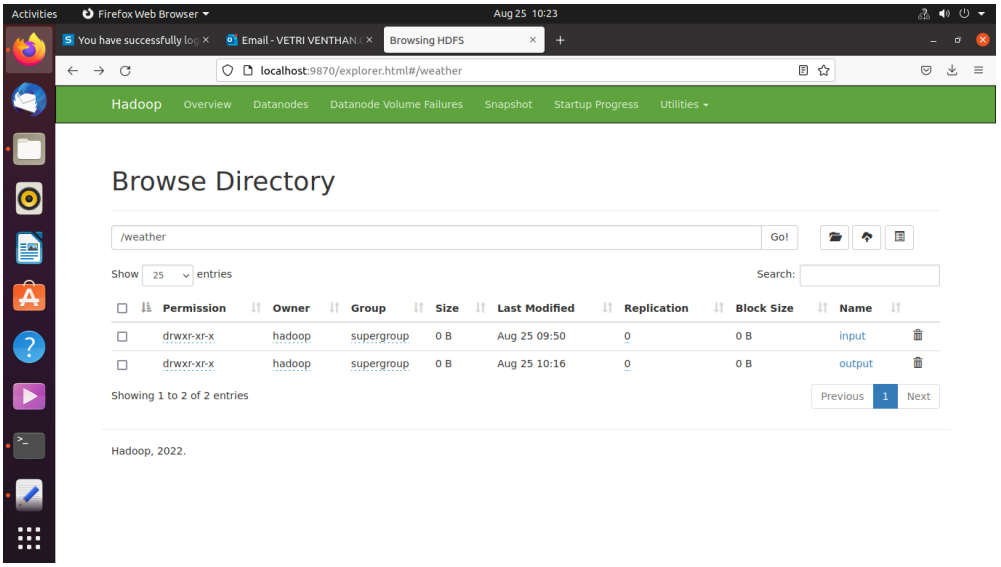

Activities
Terminal
Aug 25 10:23
hadoop@ab1-cse136: ~/weather
See 'snap info <snapname>' for additional versions.
hadoop@ab1-cse136:~$ start-all.sh
WARNING: Attempting to start all Apache Hadoop daemons as hadoop in 10 seconds.
WARNING: This is not a recommended production deployment configuration.
WARNING: Use CTRL-C to abort.
Starting namenodes on [localhost]
Starting datanodes
Starting secondary namenodes [ab1-cse136]
Starting resourcemanager
Starting nodemanagers
hadoop@ab1-cse136:~$ jps
16185 NameNode
17065 NodeManager
16538 SecondaryNameNode
17516 Jps
16908 ResourceManager
16334 DataNode
hadoop@ab1-cse136:~$ export HADOOP_CLASSPATH=$(hadoop classpath)
hadoop@ab1-cse136:~$ echo $HADOOP_CLASSPATH
/home/hadoop/hadoop-3.2.3/etc/hadoop:/home/hadoop/hadoop-3.2.3/share/hadoop/common/lib/*:/home/hadoop/hadoop-3.2.3/share/hadoop/common/*:/home/hadoop/hadoop-3.2.3/share/hadoop/hdfs:/home/hadoop/hadoop-3.2.3/share/hadoop/hdfs/lib/*:/home/hadoop/hadoop-3.2.3/share/hadoop/hdfs/*:/home/hadoop/hadoop-3.2.3/share/hadoop/mapreduce/lib/*:/home/hadoop/hadoop-3.2.3/share/hadoop/mapreduce/*:/home/hadoop/hadoop-3.2.3/share/hadoop/yarn:/home/hadoop/hadoop-3.2.3/share/hadoop/yarn/lib/*:/home/hadoop/hadoop-3.2.3/share/hadoop/yarn/*
hadoop@ab1-cse136:~$ hadoop fs -mkdir hdfs://localhost:9000/weather
hadoop@ab1-cse136:~$ hadoop fs -mkdir hdfs://localhost:9000/weather/input
hadoop@ab1-cse136:~$ hadoop fs -put '/home/hadoop/weather/input_data/weather.txt' /weather/input
hadoop@ab1-cse136:~$ ls
bdata Downloads javax.activation-api-1.2.0.jar kcet2 Pictures Templates Videos
Desktop gj javax.activation-api-1.2.0.jar.1 marvel prem test weather
dfsdata hadoop-3.2.3 javax.activation-api-1.2.0.jar.2 nepco Public TestDFSIO_results.log WordCountTutorial
Documents hadoop-3.2.3.tar.gz kcet Music snap tmpdata
hadoop@ab1-cse136:~$ javac -classpath ${HADOOP_CLASSPATH} -d '/home/hadoop/weather/data_classes' '/home/hadoop/weather/MyMaxMin.java'
Note: /home/hadoop/weather/MyMaxMin.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
hadoop@ab1-cse136:~$ jar -cvf firstTutorial.jar -C data_classes/ .
data_classes/. : no such file or directory
added manifest


Activities
Terminal
Aug 25 10:23
hadoop@ab1-cse136: ~/weather
Shuffle Errors
BAD_ID=0
CONNECTION=0
IO_ERROR=0
WRONG_LENGTH=0
WRONG_MAP=0
WRONG_REDUCE=0
File Input Format Counters
Bytes Read=32750
File Output Format Counters
Bytes Written=3585
hadoop@ab1-cse136:~/weather$ hadoop dfs -cat /weather/output/*
WARNING: Use of this script to execute dfs is deprecated.
WARNING: Attempting to execute replacement "hdfs dfs" instead.
Cold Day 20150101 -21.8
Cold Day 20150102 -24.9
Cold Day 20150103 -28.2
Cold Day 20150104 -28.9
Cold Day 20150105 -29.3
Cold Day 20150106 -26.3
Cold Day 20150107 -28.7
Cold Day 20150108 -24.1
Cold Day 20150109 -20.3
Cold Day 20150110 -25.8
Cold Day 20150111 -28.2
Cold Day 20150112 -29.1
Cold Day 20150113 -29.9
Cold Day 20150114 -29.0
Cold Day 20150115 -24.2
Cold Day 20150116 -24.6
Cold Day 20150117 -23.2
Cold Day 20150118 -23.0
Cold Day 20150119 -30.4
Cold Day 20150120 -24.7
Cold Day 20150121 -24.1
Cold Day 20150122 -27.5
Cold Day 20150123 -29.3


Activities
Terminal
Aug 25 10:23
hadoop@ab1-cse136: ~/weather
Cold Day 20150526 -1.8
Cold Day 20150527 -2.4
Cold Day 20150528 -2.1
Cold Day 20150529 0.2
Cold Day 20150530 -2.3
Cold Day 20150531 -3.8
hadoop@ab1-cse136:~/weather$ hadoop fs -cat hdfs://localhost:9000/weather/output/*
Cold Day 20150101 -21.8
Cold Day 20150102 -24.9
Cold Day 20150103 -28.2
Cold Day 20150104 -28.9
Cold Day 20150105 -29.3
Cold Day 20150106 -26.3
Cold Day 20150107 -28.7
Cold Day 20150108 -24.1
Cold Day 20150109 -20.3
Cold Day 20150110 -25.8
Cold Day 20150111 -28.2
Cold Day 20150112 -29.1
Cold Day 20150113 -29.9
Cold Day 20150114 -29.0
Cold Day 20150115 -24.2
Cold Day 20150116 -24.6
Cold Day 20150117 -23.2
Cold Day 20150118 -23.0
Cold Day 20150119 -30.4
Cold Day 20150120 -24.7
Cold Day 20150121 -24.1
Cold Day 20150122 -27.5
Cold Day 20150123 -29.3
Cold Day 20150124 -30.3
Cold Day 20150125 -30.0
Cold Day 20150126 -30.7
Cold Day 20150127 -26.9
Cold Day 20150128 -36.2
Cold Day 20150129 -35.0
Cold Day 20150130 -24.2
Cold Day 20150131 -26.5


Activities
Firefox Web Browser
Aug 25 10:23
Browsing HDFS
localhost:9870/explorer.html#/weather/output
Hadoop
Overview
Datanodes
Datanode Volume Failures
Snapshot
Startup Progress
Utilities
Browse Directo
/weather/output
Go!
Show 25 entries
Search:
Permission
Owner
Name
-rw-r--r--
hadoop
_SUCCESS
part-r-00000
Showing 1 to 2 of 2 entries
Previous
1
Next
Hadoop, 2022.
File information - _SUCCESS
Download
Head the file (first 32K)
Tail the file (last 32K)
File contents
Cold Day 20150421 -13.8
Cold Day 20150422 -8.4
Cold Day 20150423 -8.8
Cold Day 20150424 -12.4
Cold Day 20150425 -9.0
Cold Day 20150426 -8.6
Cold Day 20150427 -9.4
Cold Day 20150428 -9.5
Close


Activities
Firefox Web Browser
Aug 25 10:23
Browsing HDFS
localhost:9870/explorer.html#/weather/output
Hadoop
Overview
Datanodes
Datanode Volume Failures
Snapshot
Startup Progress
Utilities
Browse Directory
/weather/output
Go!
Show 25 entries
Search:
Permission
Owner
Group
Size
Last Modified
Replication
Block Size
Name
-rw-r--r--
hadoop
supergroup
0 B
Aug 25 10:16
1
128 MB
_SUCCESS
-rw-r--r--
hadoop
supergroup
3.5 KB
Aug 25 10:16
1
128 MB
part-r-00000
Showing 1 to 2 of 2 entries
Previous
1
Next
Hadoop, 2022.


Activities
Firefox Web Browser
Aug 25 10:23
Browsing HDFS
localhost:9870/explorer.html#/weather
Hadoop
Overview
Datanodes
Datanode Volume Failures
Snapshot
Startup Progress
Utilities
Browse Directory
/weather
Go!
Show 25 entries
Search:
Permission
Owner
Group
Size
Last Modified
Replication
Block Size
Name
drwxr-xr-x
hadoop
supergroup
0 B
Aug 25 09:50
0
0 B
input
drwxr-xr-x
hadoop
supergroup
0 B
Aug 25 10:16
0
0 B
output
Showing 1 to 2 of 2 entries
Previous
1
Next
Hadoop, 2022.