1. [Hadoop] Write a program using Hadoop to compute and output daily average measurements for temperature and dew point temperature. The daily average measurements should include measurements for 24-hour period, for example from 20100101 00:00 (2010, January 1st, 00:00) to file(s) in the format shown below – the columns are date and the combined result (separated by comma) of daily temperature and daily dew point temperature:

20100101 377.04, 285.58

20100102 378.67, 286.92

You may write the application in Java, C/C++ or python language. Provide both source code and compiled code, if applicable, for your program, as well as output file.

1. [Spark RDDs] Write a program using Spark RDDs (not DataFrames) to compute and output daily average measures for temperature and dew point temperature and dew point temperature. The daily average measurements should include measurements for 24-hour period, for example from 20100101 00:00 (2010, January 1st, 00:00) to 20100101 23:00 (2010, January 1st, 23:00). Output the result to text or CSV file(s) in the format shown below – the columns are date and the combined result (separated by comma) of daily temperature and daily dew point temperature:

20100101 377.04, 285.58

20100102 378.67, 286.92

You may write the application in Java, C/C++ or python language. Provide both source code and compiled code, if applicable, for your program, as well as the output file.

1. [PySpark DataFrames] Write a program using PySpark and its DataFrame APIs to compute daily average measures for temperature and dew point temperature. The daily average measures for temperature and dew point temperature. The daily average measurements should include measurements for 24-hour period, for example from 20100101 00:00 (2010, January 1st, 00:00) to 20100101 23:00 (2010, January 1st, 23:00). Output the result to text or CSV file(s) in the format shown below – the columns are date and the combined result (separated by comma) of daily temperature and daily dew point temperature:

20100101 377.04, 285.58

20100102 378.67, 286.92

You may write the application in Java, C/C++ or python language. Provide both source code and compiled code, if applicable, for your program, as well as the output file.