Practical 4 - Write a Spark code to Handle the Streaming of data using RDD and Data frame.

START SERVICES – SPARK IN CLOUDERA MANAGER

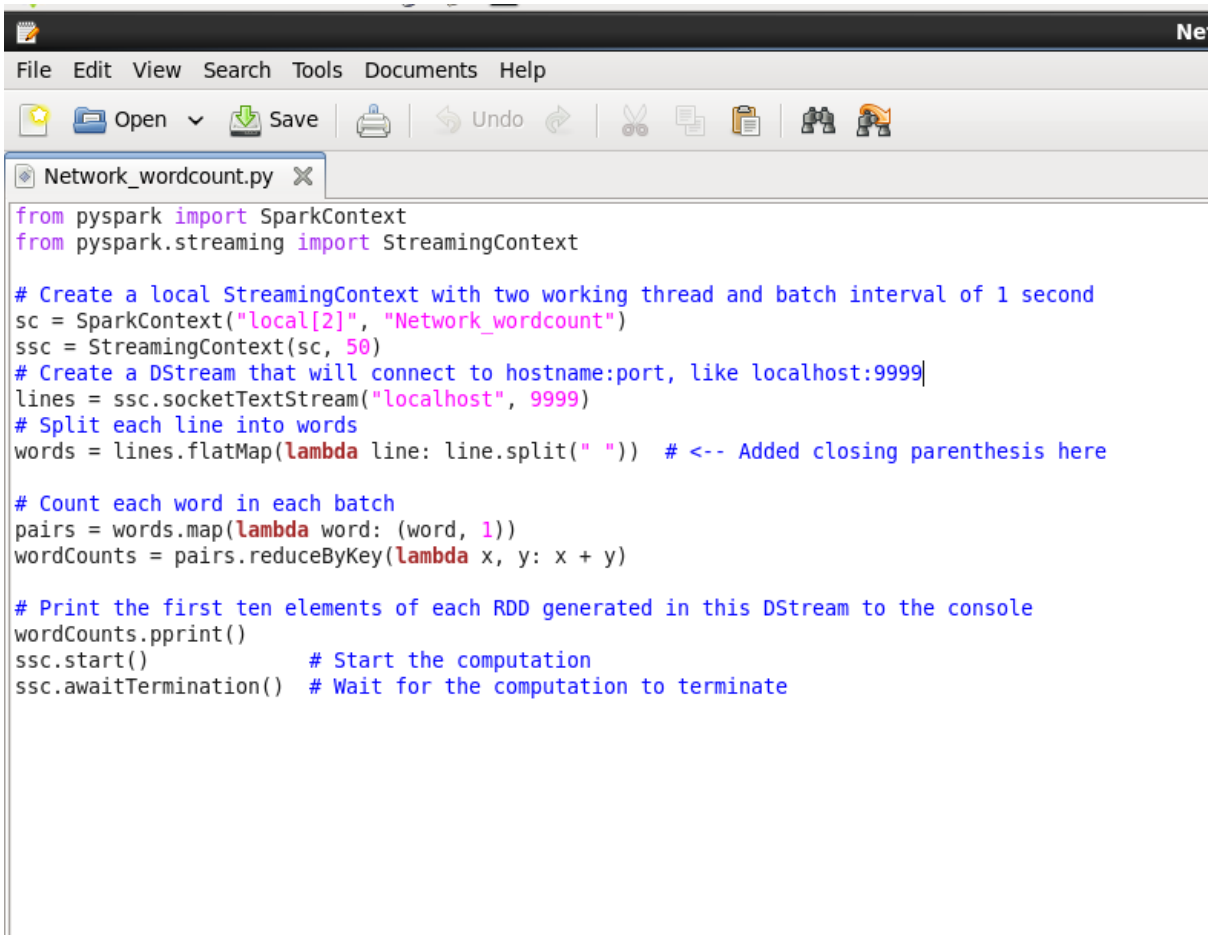
https://spark.apache.org/docs/latest/streaming-programming-guide.html

STEP 1 – Write Your Python Code:

Inside the text editor, write your Python code (Network_wordcount.py).

PS – save the file in Home/Cloudera/Documents

Below is the code



Step 2: Save and Exit

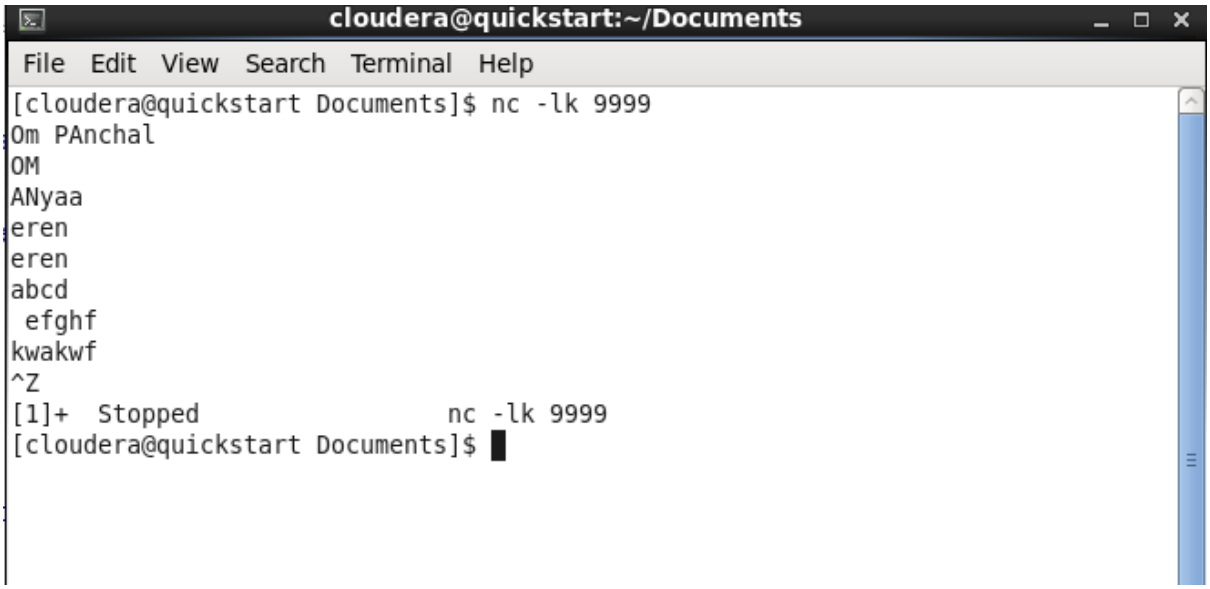
Save the file (in python extension) and exit the text editor.

Step 3: Open a New Terminal Window

Open a new terminal window or tab to perform the following steps simultaneously.

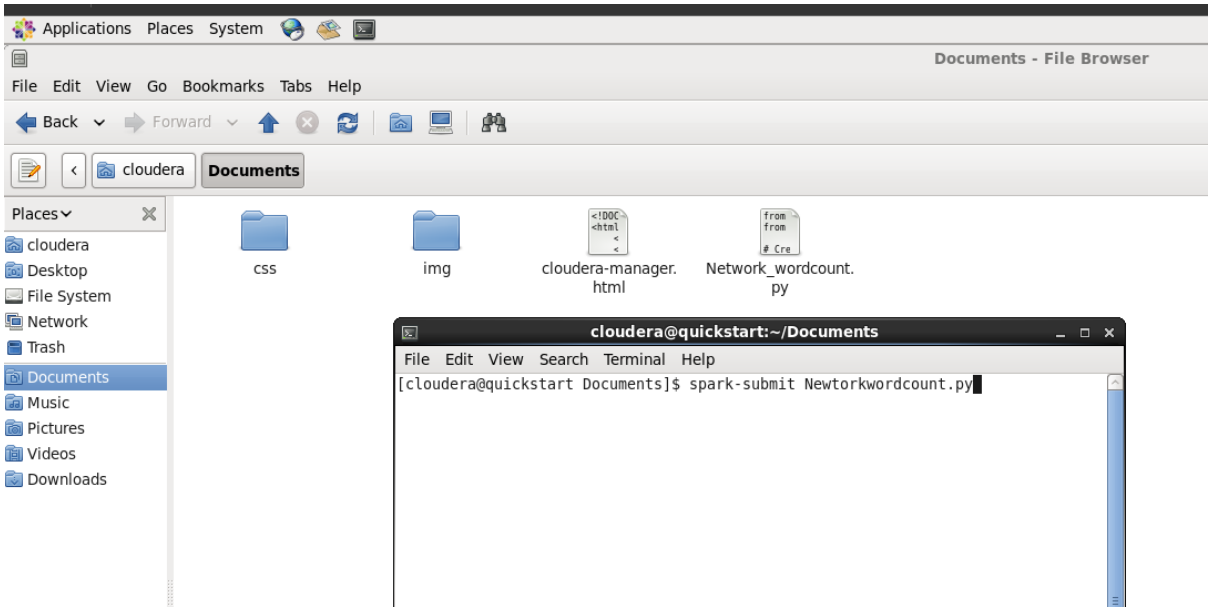
Step 4: Start Netcat

In the new terminal, start Netcat in listening mode with the specified port (9999).



Step 5: Submit the Spark Job

Switch to terminal and submit the Spark job using spark-submit.



RUN BOTH TERMINALS

Step 6: Verify Results

Check the terminal where Spark Streaming is running. You should see word counts printed as batches are processed.

Step 7: Stop Spark Streaming

Terminate the Spark Streaming application when you are done.(CTRL +Z)

OUTPUT –

```
24/02/21 22:15:04 INFO python.PythonRunner: Times: total = 33, boot = -356, init = 389, finish = 0
24/02/21 22:15:04 INFO python.PythonRunner: Times: total = 52, boot = -228, init = 280, finish = 0
24/02/21 22:15:04 INFO executor.Executor: Finished task 0.0 in stage 4.0 (TID 4). 1257 bytes result sent to driver
24/02/21 22:15:05 INFO scheduler.DAGScheduler: ResultStage 4 (runJob at PythonRDD.scala:393) finished in 0.165 s
24/02/21 22:15:05 INFO scheduler.DAGScheduler: Job 2 finished: runJob at PythonRDD.scala:393, took 0.244368 s
24/02/21 22:15:05 INFO scheduler.TaskSetManager: Finished task 0.0 in stage 4.0 (TID 4) in 166 ms on localhost (executor driver) (1/1)
24/02/21 22:15:05 INFO scheduler.TaskSchedulerImpl: Removed TaskSet 4.0, whose tasks have all completed, from pool
-------------------------------------------
Time: 2024-02-21 22:15:00
-------------------------------------------
(u'abcd', 1)
(u'', 1)
(u'Om', 1)
(u'PAnchal', 1)
(u'OM', 1)
(u'eren', 2)
(u'kwakwf', 1)
(u'ANyaa', 1)
(u'efghf', 1)

24/02/21 22:15:05 INFO scheduler.JobScheduler: Finished job streaming job 1708582500000 ms.0 from job set of time 1708582500000 ms
24/02/21 22:15:05 INFO scheduler.JobScheduler: Total delay: 5.032 s for time 1708582500000 ms (execution: 4.157 s)
24/02/21 22:15:05 INFO scheduler.ReceivedBlockTracker: Deleting batches ArrayBuffer()
24/02/21 22:15:05 INFO scheduler.InputInfoTracker: remove old batch metadata:
24/02/21 22:15:50 INFO scheduler.JobScheduler: Added jobs for time 1708582550000 ms
24/02/21 22:15:50 INFO scheduler.JobScheduler: Starting job streaming job 1708582550000 ms.0 from job set of time 1708582550000 ms
```