**CSEE5590-0001/490-0003: Big Data Programming**

**Lesson Plan # 4**

**Lesson Title: *Apache Spark Streaming***

**Lesson Description: *Apache Spark Streaming***

**Lesson Overview:**

Spark Streaming is an extension of the core Spark API that enables scalable, high-throughput, fault-tolerant stream processing of live data streams. ... Spark Streaming provides a high-level abstraction called discretized stream or ***DStream***, which represents a continuous stream of data.

**In class exercise:**

1. **Spark Streaming using Log File Generator:**

Spark Streaming using log file generator. Use the instructions in the slides

1. **Spark Streaming for TCP Socket:**

Write a spark word count program of Spark Streaming received from a data server listening on a TCP socket.

Hint:

For Netcat utility in Windows

<https://github.com/rsanchez-wsu/jfiles/wiki/Windows-10-Telnet-&-NetCat>

Bonus:

1. Spark Streaming for Character Frequency using TCP Socket:

Output Example

Character Count => List of Words (Distinct)

2 => [to, in, go]

3 => [the, law, and, can, how]

4 => [java, data, file]

Note: Ignore the case-sensitivity. Assume all the words are in lower case.

ICP Guidelines (In Class Students):

1. ICP Submission is in pairs of two students.
2. Once completed, must be presented to TA or Instructor before the completion of the class
3. Submission after class is considered as late submission. (Check the late submission policy in the syllabus)
4. ICP Code with brief explanation in wiki should be pushed to GitHub (submit your screenshots as well. The screenshot should have both the code and the output)Submit GitHub Link through the Feedback Form

<https://forms.gle/wyFHFBL6LzM3xDGr5>

**Submission Guidelines (for online students):**

1. Submit your source code and documentation to GitHub and represent the work through wiki page properly with detailed explanation (submit your screenshots as well. The screenshot should have both the code and the output)
2. Comment your code appropriately.
3. Submit a brief demo video 2-3 min showing your assignment with a voice over explaining your work through the Submission Link.
4. Use the following Google link to submit your assignment.

<https://forms.gle/wyFHFBL6LzM3xDGr5>

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