**Northeastern University – Silicon Valley**

CS 6650 Scalable Dist Systems

**Homework Set #4 Assigned: 2/2/20 Due: 2/14/20** [100 points]

***INSTRUCTIONS: Please provide clear explanations in your own sentences, directly answering the question, demonstrating your understanding of the question and its solution, in depth, with sufficient detail. Submit your solutions [PDF preferred]. Include your full name. Do not email the solutions.***

For I below, tudy **Chapter 6 from** Coulouris Book

1. Answer the following questions using explanation and diagrams as needed. No implementation needed.
2. 6.8 [10 points]
3. 6.14 [10 points]
4. 6.15 [10 points]
5. Implement a simple JMS Queue which can be useful for the notification mailbox discussed in Question 6.8 above. See the reference provided. [30 points]

Why do we need MyListener and MyReceiver differently in JMS Queue?

1. See the Coding Tutorial PDF provided, and the below references. Do your own study of RMI Java examples to implement this. Implement a Java RMI Application in which the Client object is sending a list of 10 integers to the Server, and a remote method ['sort()'] o the server returns a sorted version of the same list back to the Client. [40 points]
2. For homework 4 (question 2) Follow the tutorial and make a HornetQ JMS server with a queue (for example mailboxQueue), so that the mailbox client can connect to the HornetQ server and use the queue for communication.

**References**

JMS

https://howtodoinjava.com/jms/jms-java-message-service-tutorial/

Java RMI

<https://www.cs.uic.edu/~troy/fall04/cs441/rmi/calc/index.html>

<https://www.cs.uic.edu/~troy/fall04/cs441/rmi/calc/index.html>