Name (print): ID:

CSCI 516 Distributed and Network Programming

Spring 2020

Final Exam

Total Points: 100

Duration: 2 hours

Student Name (print):

Student ID:

For instructor use only:

Question	Points
1	/15
2	/15
3	/70
Total	**/100**

Question 1-2: submit a word or text document for your answers of question 1 and 2. Create a folder for question3's source code, then zip all files into one file and submit it on the blackboard.

1. Compare centralized directory and distributed query flooding implementations for P2P file sharing architectures. Explain each implementation's advantages and disadvantages.
2. Explain why replications can improve reliability of a distributed system and how replications affect consistency.
3. Use RMI to implement a P2P majority voting application. There is a login server for maintaining a list of all peers. The login server is running all the time. Each peer can randomly pick 5 peers as its neighbors. When there are less than 5 peers available, choose all available peers. Later, when there are more peers available, pick the rest of neighbors. When a peer starts a voting, it asks the user of the peer what to vote for, and then send the voting message to all its neighbors. The vote result should be either yes or no. When the peer receives all results from its neighbors, it displays the majority vote result to the user. When a peer receives a voting request, it generates vote result (yes or no) randomly. A peer might join in and leave at any time, make the system fault tolerance.