

CS54200: Distributed Database Systems
Prof. Bharat Bhargava

Homework 4
Due date: April 25, 2017

Note: Written homework assignments are due at the beginning of class on the due date. Answer each question briefly.

Q1:

- (a) How can the ideas of "degrees of commitment" be used in increasing the performance of transaction processing during network partitioning?
- (b) What is view-serializability and how it can be used in network partitioning?
- (c) How can checkpoints be used to maintain consistency and help in recovery after a failure?

Q2: How would you change the design and algorithms for distributed database processing if there were multiple and frequent failures (like sites failing and recovering, network partitions, variable communication delays, large number of lost messages)?

Q3: What are the types of attacks in Internet and mobile communications? How transaction-processing algorithms can be designed to deal with some of them?

Q4: What is the latency in LAN, WAN and in communicating with Cloud Services? Try to measure it using echo service or find it from papers under communication networks in CS542 course page.

Q5: How can you find at the time of merge if inconsistent updates have taken place while network was partitioned?