Assignment 1

1. A report by U.K.-based Datamonitor, titled "The future of social networking: Understanding market strategic and technological developments," predicts that growth in the number of people signing up to be a part of the cultural phenomenon, which has put the likes of Facebook on the map, will peak by 2009 and plateau by 2012. However, while Datamonitor likens the current hype and excitement around social networking to the heady days of the dot-com boom, it says there is anxiety as well, and warns that investors are pulled in two directions. They do not want to miss out on the "next Google or Yahoo" but are cautious of being overconfident about a Web phenomenon that is not proven over the long term - in October 2007.

Now, in 2013, social networking is very prevalent. What do you think would be the next in the future? Explain it.

2. In Lamport's algorithm for granting a single resource to processes, one at a time (mutual-exclusively), in the order they made requests for it [Lamport78], how can the assumption of in-order delivery be avoided?

Write a whole algorithm that is not based on this assumption, and explain how this algorithm works.

3. Is it possible that the global state recorded by the 'snapshot' algorithm of Chandy and Lamport [Chandy85] is not identical to any of the global states that occurred in the actual computation? Of what use is the algorithm if the recorded global state never occurred? Support your claim.
4. State the names of the consistency models not using synchronization operations in order of decreasing restrictiveness. For these models, illustrate using the ‘R(x)a’ and ‘W(x)a’ notations event sequences that are valid for one model, but not for one-level (in the restrictiveness order) more restrictive model.

※ Writing in English is required.

Submit this file to the TA (husung@dcslab.snu.ac.kr)
Due date: Midnight on Oct 14 (23:59:59, Oct 14)