

Assignment 6

Reading –Read Section 6.5 of the revised Chapter 6 that was handed out in class, plus Chapter 8 of the textbook.

Problem 1

In the last example of optimistic concurrency control subsection on page 6-17 of the revised Chapter 6, it says that “the above example works only if Decrement is deferred” (second to last paragraph of the subsection). Explain what goes wrong if it executes right away instead of being deferred.

Problem 2

Describe a scenario under which all participants voted Prepared during phase one of two-phase commit, but the two-phase commit protocol reaches the Abort decision. Use the basic two-phase commit protocol (the one without any of the optimizations, given on slides 7 and 8 of the lecture notes).

Problem 3

Consider two-phase commit with the cooperative termination protocol. Describe an execution involving site failures only (i.e., no communications failures), which causes operational participants to become blocked.