B561 Assignment 6
Due date: Monday, December 7th, 2007

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1. Exercise 16.3 in the textbook.

2. Prove or disprove the following statements.

   (a) Every strict schedule admits 2PL.

   (b) Every strict schedule admits strict 2PL.

   (c) Every strict schedule that is also conflict serializable admits strict 2PL.

   (d) Every strict schedule that contains no WAR conflicts admits strict 2PL.

   (e) Suppose the following: if a schedule contains writes, these are blind writes. Schedules that satisfy this are always recoverable.

   (f) Every view serializable schedule that contains no blind writes is conflict serializable.

3. The Venn diagram in Figure 17.9 in the textbook shows the inclusion between several classes of schedules. Give one example schedule for each of the regions S1 through S12 in the diagram. Each schedule you give should contain at least 3 transactions and 3 conflicts. Note that a transaction cannot conflict with itself.

4. This question concerns an undo/redo recovery manager.

    (a) Suppose the log is (mistakenly) maintained as an undo log. Exhibit a case where ACID is violated on restart. If no such case exists, explain why.

    (b) Suppose the log is (mistakenly) maintained as a redo log. Exhibit a case where ACID is violated on restart. If no such case exists, explain why.

5. Exercise 18.5 in the textbook.