CS3402 Tutorial 8:

1. Consider the following concurrent schedule. Draw the serialization graph for the schedule. Is it conflict serializable?

|  |  |  |
| --- | --- | --- |
| **Ta** | **Tb** | **Tc** |
|  | Read(x) |  |
| Write(y) |  |  |
|  |  | Read(y) |
|  | Write(y) |  |
| Write(x) |  |  |
|  | Commit |  |
|  |  | Write(z) |
| Commit |  |  |
|  |  | Commit |

1. Consider schedules S1, S2 and S3 below. Determine whether each schedule is strict, cascadeless, recoverable, or nonrecoverable. Determine the strictest recoverability condition that each schedule satisfies.
2. r1(X); w1(X); r2(X); r1(Y); w2(X); c2; c1;
3. r1(X); w1(X); r2(X); r1(Y); w2(X); w1(Y); c1; c2;
4. r1(X); w1(X); w2(X); w1(Y); c1; r2(X); c2;

Can you change c) into a strict schedule?

1. Consider the following schedule at a single server system.

|  |  |
| --- | --- |
| T1 | T2 |
| Read(a) |  |
|  | Read(a) |
| Write(a) |  |
|  | Write(a) |

1. Add lock and unlock operations to the schedule if Conservative 2PL is adopted.
2. Add lock and unlock operations to the schedule if Strict 2PL is adopted.
3. Which one (S2PL or C2PL) will you choose for scheduling the two transactions?

Hints: Read-Write lock should be used.