CSE5024 Advanced Database Systems
Tutorial 2

1. Explain the distinction between the terms *serial schedule* and *serializable schedule*.

2. Precedence Graph

Draw the precedence graph for the schedule shown below.
Test whether the schedule is conflict serializable or not.
If it is conflict serializable, then you need to find its conflict-equivalent serial schedule.

T1	T2	T3	T4
	read(B) read(C) write(B)	read(A)	
			read(C) write(C)
read(C) write(B)		write(A)	
		write(B)	

3. Examples of schedules (*please do NOT copy schedules from the notes*)

Give an example of a conflict serializable schedule (but not a serial schedule).

Give an example of a recoverable schedule (but not a serial schedule). In this example, you have to show COMMIT operations of the transactions in the schedule.

4. Consider the following two transactions:

T_1:	read(A);	**T_2:**	read(B);
	read(B);		read(A);
	if A = 0 then B := B + 1;		if B = 0 then A := A + 1;
	write(B).		write(A).

Let the consistency requirement be (A = 0 or B = 0). The initial values of A and B are 0.

a. Show that every serial execution involving these two transactions preserves the consistency of the database.

b. Show a concurrent execution of T_1 and T_2 that produces a non-serializable schedule.

c. Is there a concurrent execution of T_1 and T_2 that produces a serializable schedule?