CS3402 Tutorial
Transactions (Part 2) and Concurrency (Part 1):

Question 1

Consider the following arrival order of operations to the scheduler. Assume that the scheduler uses strict two-phase locking (S2PL) and add lock/unlock operations in the table below to show the new schedule.

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

Question 2

Consider the following schedule.

T_1	T_2
Read(a)	
	Read(a)
Write(a)	
	Write(a)
Commit	
	Commit

(1) Add lock and unlock operations to the schedule assuming that Conservative 2PL (C2PL) is used.
(2) Add lock and unlock operations to the schedule assuming that Strict 2PL (S2PL) is used.
(3) Which one (S2PL or C2PL) is preferable for scheduling the two transactions?

Question 3

Consider the three schedules below. Determine whether each schedule is strict, cascadeless, recoverable, or nonrecoverable. Determine the strictest recoverability condition that each schedule satisfies.
(a) $r_1(X)$; $w_1(X)$; $r_2(X)$; $r_1(Y)$; $w_2(X)$; c_2; c_1;
(b) $r_1(X)$; $w_1(X)$; $r_2(X)$; $r_1(Y)$; $w_2(X)$; $w_1(Y)$; c_1; c_2;
(c) $r_1(X)$; $w_1(X)$; $w_2(X)$; $w_1(Y)$; c_1; $r_2(X)$; c_2;
(d) Make the schedule in (c) strict.