Part 3

Saturday, February 11, 2023 6:26 PM

Part 3: Two-Phase Locking (20 points)

A) Now modify the above schedule by adding locks, which may block some transactions from doing their operations until the lock is released. You'll need to **rewrite** the above schedule in a table form. (The lecture slides show how to represent blocking in your schedules.)
Use two-phase locking (doesn't need to be "strict") in your modified schedule to ensure a conflict-serializable schedule for the transactions above.

Use the notation L(A) to indicate that the transaction acquires the lock on element A and U(A) to indicate that the transaction releases its lock on.

T1	T2	T3
L(A), L(B)		
R(A)		
W(A)		
U(A)		
		L(A)
		R(A)
		W(A)
	L(A) Denied	
R(B)		
		L(B) Denied
W(B)		
U(B)		
		L(B) Granted
		R(B)
		W(B)
		U(B), U(A)
	L(A), L(B)	

	R(A)	
	R(B)	
	U(A), U(B)	
	commit	
commit		
		commit

B) If 2PL ensures conflict-serializability, why do we need strict 2PL? Explain briefly.

For the schedule to be recoverable it needs to be strict 2PL.