

# Homework Assignment 5

Q1-Q4, You can find solutions from PPT Lec08 directly including examples.

Problem 3 (15 points)

The schedule below produces same outcome as the serial schedule  $\langle T_1, T_5 \rangle$ . But it is not view serializable. Why?

$T_1$	$T_5$
read (A) $A := A - 50$ write (A)	
	read (B) $B := B - 10$ write (B)
read (B) $B := B + 50$ write (B)	
	read (A) $A := A + 10$ write (A)

$T_1$  reads B after  $T_5$  writes B. So if this is view serializable,  $T_1$  must be executed after  $T_5$  according to rule 2 in the lecture notes.

Problem 4 (15 points)

Is the following schedule recoverable? Why?

$T_8$	$T_9$
read (A) write (A)	
	read (A) commit
read (B)	

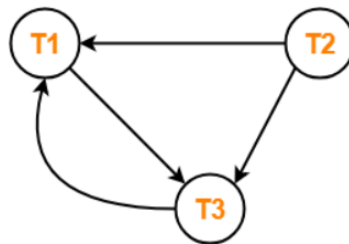
No.  $T_9$  reads a data item previously written by a transaction  $T_8$ . But the commit operation of  $T_9$  appears before the commit operation of  $T_8$ .

Problem 5 (25 points)

Is the following schedule conflict serializable? Use precedence graph to justify your answer.

T1	T2	T3
R (A)		
	R (A)	
		W (A)
W (A)		

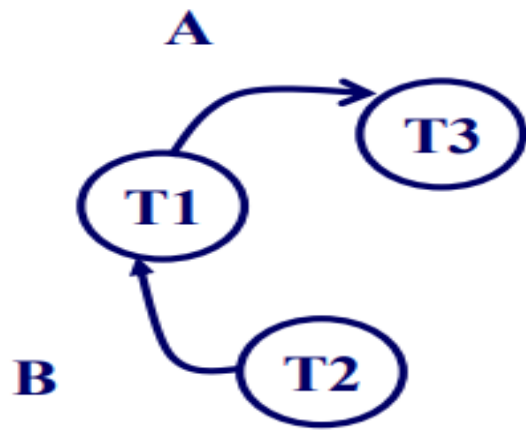
Draw the precedence graph-



Problem 6 (25 points)

Is the following schedule conflict serializable? What is its equivalent serial schedule?

T1	T2	T3
Read(A)		
...		
write(A)		
		Read(A)
		...
		Write(A)
	Read(B)	
	...	
	Write(B)	
Read(B)		
...		
Write(B)		



Equivalent serial schedule: T2 – T1 – T3