

"Conflict Equivalent"

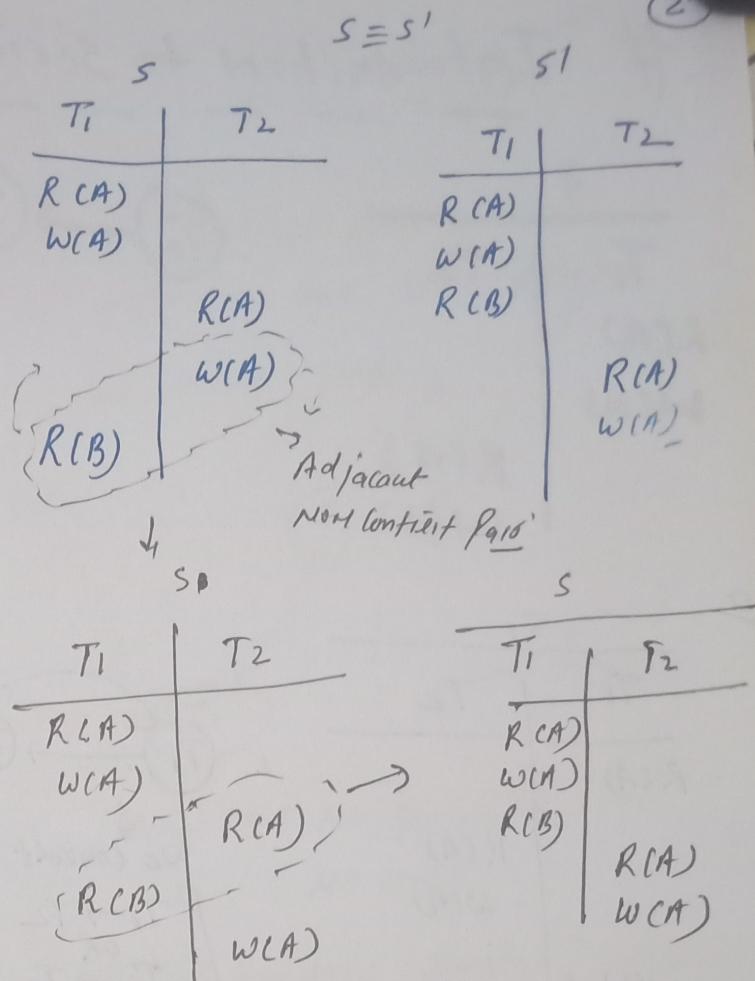
$R(A)$ $S(R(A)) \setminus \{N\}$ Non Conflict
Pair

$R(A)$	$Ew(A)$
$w(A)$	$R(A)$
$w(A)$	$w(A)$

Conflict Pair

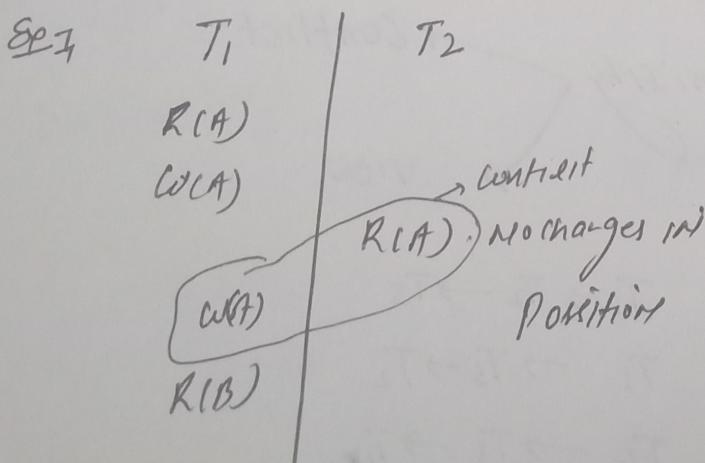
$R(B)$	$R(A)$
$w(B)$	$R(A)$
$R(B)$	$w(A)$
$w(A)$	$w(B)$

Non Conflict



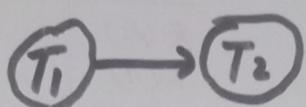
Now $\underline{s \equiv s'}$

Conflict equivalent
↓
Serializes/e



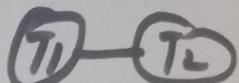
Introduction to Serializability:

<u>S</u>	<u>T₁</u>	<u>T₂</u>
	R(A)	
	W(A)	R(A)

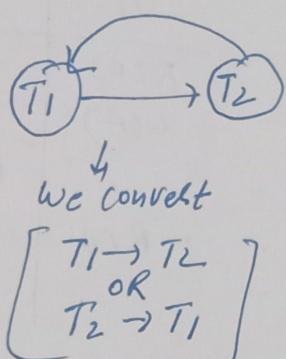


<u>T₁</u>	<u>T₂</u>
R(A)	
W(A)	

R(A)
W(A)



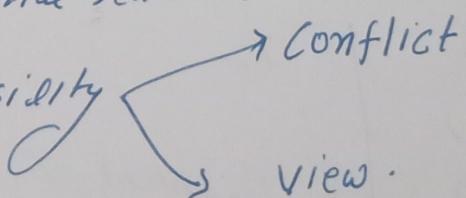
<u>S₁</u>	<u>T₁</u>	<u>T₂</u>
	R(A)	
	R(A)	
	W(A)	



Ex 2

Can we convert this schedule to serial schedule.

We have TWO Method of Serializability



<u>T₁</u>	<u>T₂</u>	<u>T₃</u>
	R(A)	
		R(A)
		W(A)
R(B)		
W(B)		
		W(B)

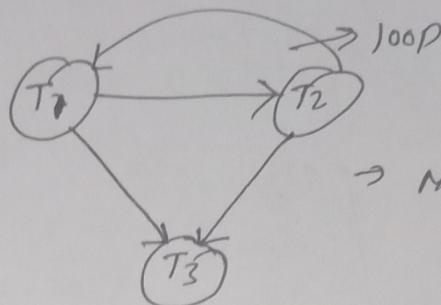


$T_1 \rightarrow T_2 \rightarrow T_3$
 $T_1 \rightarrow T_3 \rightarrow T_2$
 $T_2 \rightarrow T_3 \rightarrow T_1$
 $T_2 \rightarrow T_1 \rightarrow T_3$
 $T_3 \rightarrow T_1 \rightarrow T_2$
 $T_3 \rightarrow T_2 \rightarrow T_1$

(5)

Check whether schedule is Conflict
Serializable OR NOT?

S		
T ₁	T ₂	T ₃
100 R(A)	A=A-40 W(A) 60-40 =20	
	A=A-40 W(A) 20	A=A-20 W(A) 0



→ Non Conflict
Serializable

No \Rightarrow View Serializability is used

S

S		
T ₁	T ₂	T ₃
100 A=A-40 R(A) 60 W(A)		
	A=A-40 W(A) 20	A=A-20 W(A) A ≠ 0

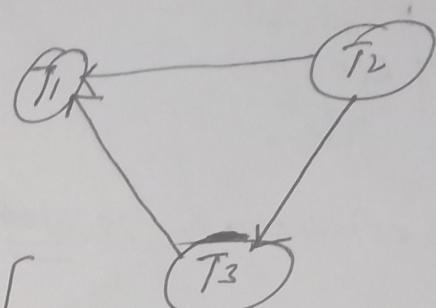
Conflict Serializability \rightarrow

Q → Whether a schedule is
Conflict Serializable or not? (3)

T	T ₂	T ₃
R(x).		
	R(y). -	
	R(x)	
	R(y) -	
	R(z) -	
		W(y)!
R(z)		
W(x)		
W(z)		

Check conflict pairs in other transactions and draw edges

Precedence graph - 7



Loop / Cycle.

Now here no loop and
no cycle

Now this schedule conflict serializable &
Serializable &
consistent.

Conflict pair

$R \rightarrow W$
 $W \rightarrow R$
 $W \rightarrow W$

Now possibility

$T_1 \rightarrow T_2 \rightarrow T_3$

$T_1 \rightarrow T_3 \rightarrow T_2$

$T_2 \rightarrow T_3 \rightarrow T_1$

$T_2 \rightarrow T_1 \rightarrow T_3$

$T_3 \rightarrow T_2 \rightarrow T_1$

$T_3 \rightarrow T_1 \rightarrow T_2$

$T_2 \rightarrow T_3 \rightarrow T_1$

Now check indegree = 0

