

Dirty Read  
 Phantom Read  
 Lost Update  
 Unrepeatable Read

T <sub>1</sub>	T <sub>2</sub>
RA	RA
WA	RA

Conflict Serializable

Non-Conflicting

T <sub>1</sub>	T <sub>2</sub>
RA	
WA	
	RA
	WA

→ Conflicting operations:

- Ops
- 1) Diff transactions
  - 2) work on same data
  - 3) If either operation is W

RR ]

RW

WR

WW

T <sub>1</sub>	T <sub>2</sub>
WA	WB
RA	RA

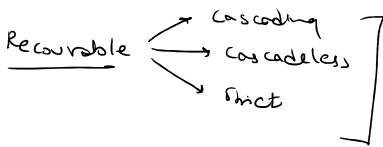
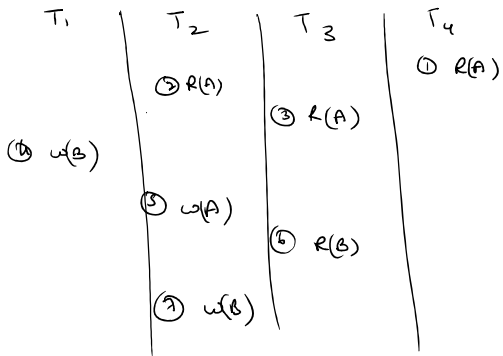
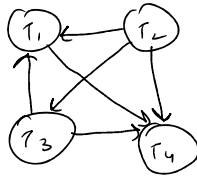
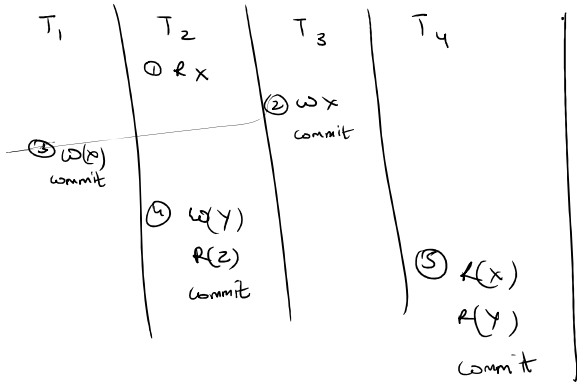
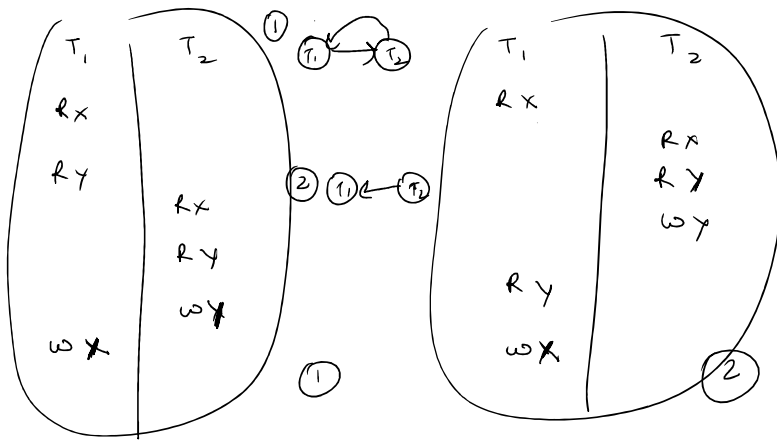
View Serializability

- 1) \_\_\_\_\_
- 2) Conflict Serializable → View Serializable

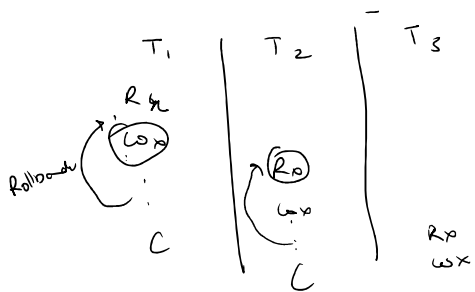
- 1) Initial Read
- 2) Updated Read
- 3) Final Write

T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>
RA		
WA	RA	
	WA	RA
		WA

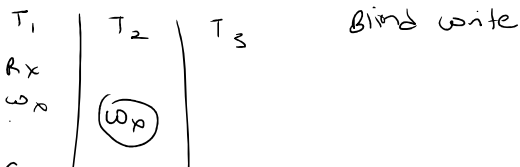
T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>
RA		RA
WA	RA	
	WA	WA



Cascading



Cascadeless



$\dots$	
$w_x$	$w_x$
$c$	$R_x$
	$c$

strict

Dirty Read  
lost update  
Blind write

$T_1$	$T_2$	$T_3$
$R_x$		
$w_x$	$w_x$	
$c$	$c$	
	$R_x$	

Strict : DR x BW x lostUpdate x

$R_x$	$R_y$
$w_x$	$w_y$
$c$	$R_x$
	$w_x$
	$c$