

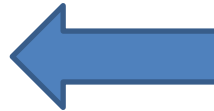
Recoverability

T8	T9
read(A)	
write(A)	
	read(A)
write(A)	

Fig: Schedule-11

T8	T9
read(A)	
write(A)	
	read(A)
	commit
write(A)	
commit	

Fig: Schedule-11



**Is this schedule
Recoverable/Irrecoverable?**

T8	T9
read(A)	
write(A)	
	read(A)
	commit
write(A)	
commit	

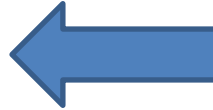
Fig: Schedule-11



**This schedule is
Irrecoverable.**

T8	T9
read(A)	
write(A)	
	read(A)
write(A)	
commit	
	commit

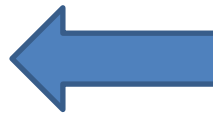
Fig: Schedule-11



**Is this schedule
now Recoverable?**

T8	T9
read(A)	
write(A)	
	read(A)
write(A)	
commit	
	commit

Fig: Schedule-11



**This schedule is now
Recoverable.**

T10	T11	T12
read(A)		
write(B)		
write(A)		
	read(A)	
	write(A)	
		read(A)

Fig: Schedule-12

T10	T11	T12
read(A)		
write(B)		
write(A)		
	read(A)	
	write(A)	
		read(A)
commit		
	commit	
		commit

Fig: Schedule-12 (recoverable)

Note:

- Now Schedule-12 is **recoverable** but it cause **Cascading Rollback**.
- **Cascading Rollback is undesirable**.
- **Cascadeless Schedule:** for each pair of transactions T_i and T_j such that T_j reads a data item previously written by T_i , the commit operation of T_i appears before the read operation of T_j .
- **Every cascadeless schedule is also recoverable.**

T10	T11	T12
read(A)		
write(B)		
write(A)		
commit		
	read(A)	
	write(A)	
	commit	
		read(A)
		commit

Fig: Schedule-12 (cascadeless and recoverable)

Is a cascadeless schedule is a serial schedule?

T10	T11	T12
read(A)		
write(B)		
write(A)		
	write(A)	
commit		
	read(A)	
	write(A)	
	commit	
		read(A)
		commit

Fig: Schedule-12 (cascadeless and recoverable)

Strict Schedule

T10	T11	T12
read(A)		
write(B)		
write(A)		
	write(A)	
commit		
	read(A)	
	write(A)	
	commit	
		read(A)
		commit

Fig: Schedule-12 (cascadeless and recoverable)

T10	T11	T12
read(A)		
write(B)		
write(A)		
commit		
	read(A)	
	write(A)	
	commit	
		read(A)
		commit

Fig: Schedule-12 (cascadeless, recoverable and strict)

Is a strict schedule is a serial schedule?

T10	T11	T12
read(A)		
write(B)		
write(A)		
	read(C)	
	write(C)	
commit		
	read(A)	
	write(A)	
	commit	
		read(A)
		commit

Fig: Schedule-12 (cascadeless, recoverable and strict)

Schedules:

1. Recoverable
2. Cascadeless
3. Strict

Note:

From Chapter-15 we have covered Slide#15.1-15.24