T5	T6	T7
lock - X(A)		
read (A)		
lock - & S(B)		
read (B)		
write (A)		
unlock (A)		
	lock - X(A) (exclusive lock)	
	read (A)	
	write (A)	
	unlock (A)	
		lock - S(A) (shared lock)
		read (A)

A partial schedule

cascading Rollback - If T5 fails at the end of T7, T6 rolls backs. consequently, T7 rolls back.

* Strict 2PL - can only apply / acquire lock any in growing phase. A transaction needs to. commit before unlocking it.

* Rigorous 2PL - If a data item is locked by any transaction and the lock is being held. the commit to release the lock.

Recovery system

Failure — Abnormal conditions that occur in a database.

sources of failure:

1) Power outage
2) Hardware error
3) software error
4) Sabotage

Disk failure

RAID — series of disks connected by RAID

scheme of recovery:

1. There has to be redundancy of info.
   (If one copy gets destroyed, then another copy saved)

```
              Failures
       ┌─────────┼─────────┐
       ↓         ↓         ↓
  Transaction  system     Disk
   failure     crash     failure
     ┌───┴───┐
     ↓       ↓
  logical  System
  error    error        Fail-stop Assumption
```