Concurrency

Two Phase Locking

First phase

Request new locks, but not release locks:
- *Acquire* a Shared Lock
- *Acquire* a Exclusive Lock

With **Lock Conversion**
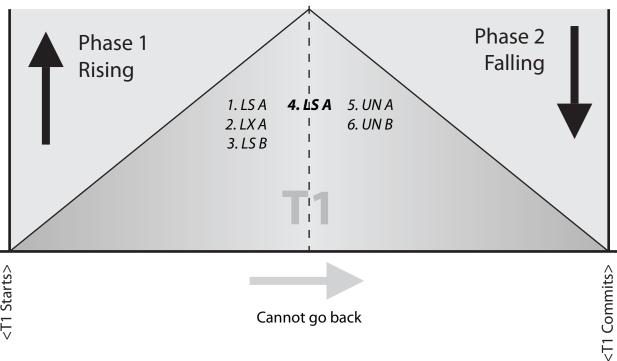- *Upgrade* a Shared Lock to Exclusive Lock

Second phase

Release existing locks, but not request new locks:
- Can *release* a Shared Lock
- Can *release* a Exclusive Lock

With **Lock Conversion**
- *Downgrade* a Exclusive Lock to Shared Lock

Phase change (from 1 to 2) happens in the transaction once *any* of the three conditions above are true (*ex. LS A below*)

Phase 1 Rising

Phase 2 Falling

1. LS A
2. LX A
3. LS B

4. LS A

5. UN A
6. UN B

T1

<T1 Starts>

Cannot go back

<T1 Commits>

Time