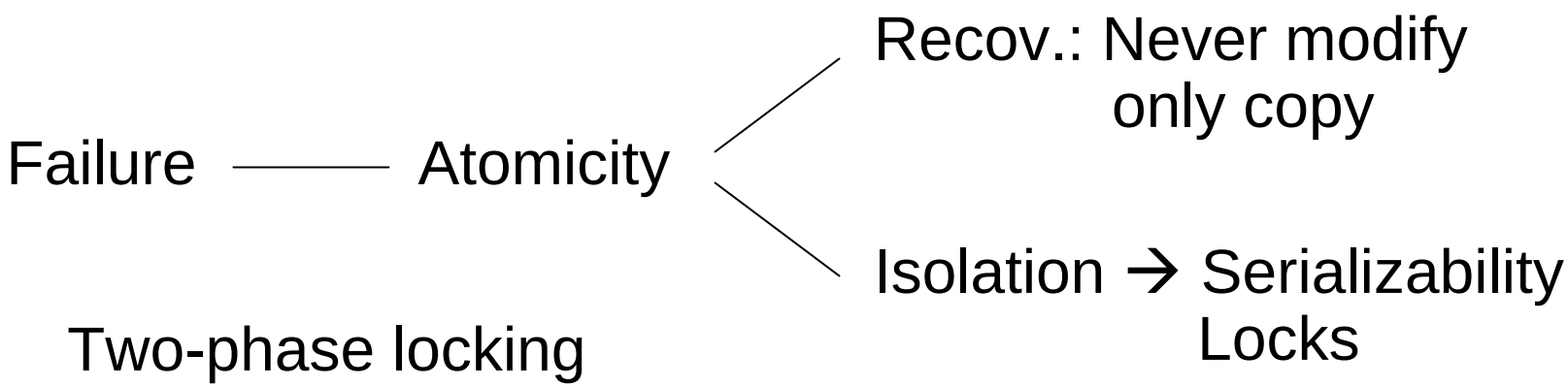
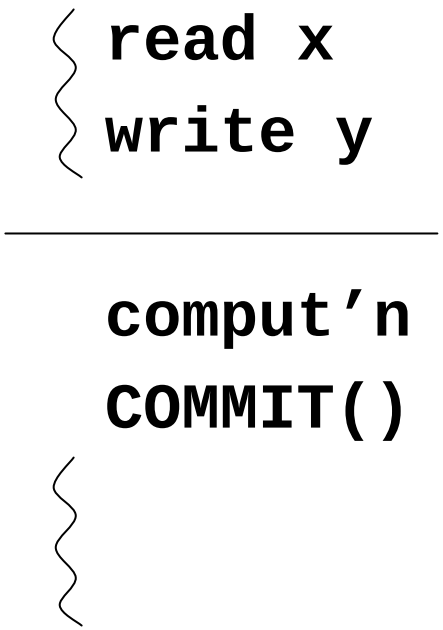
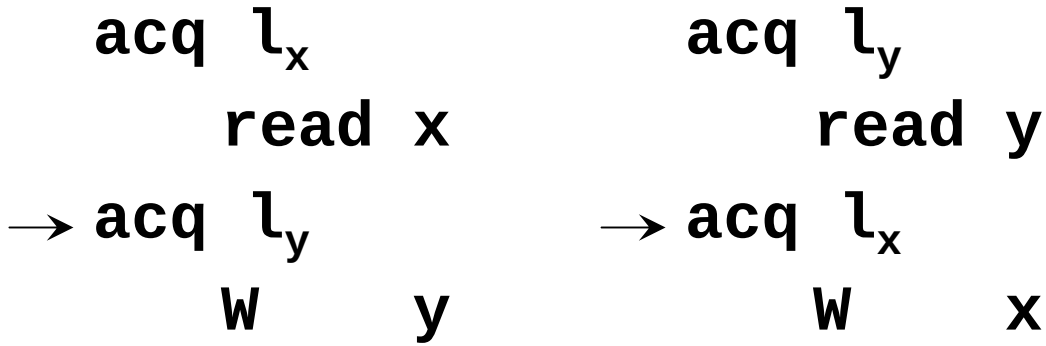
6.033 Computer System Engineering

Spring 2009


Failure
Atomicity
Recov.: Never modify
only copy
Isolation → Serializability
Locks
Two-phase locking

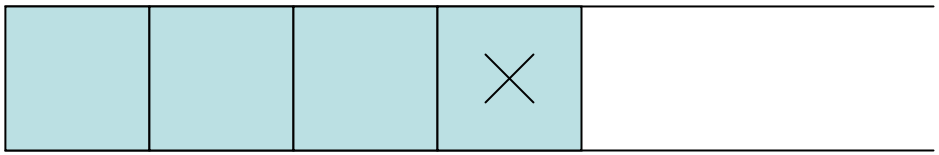


Deadlocks



1) Timers
2) Waits for graph

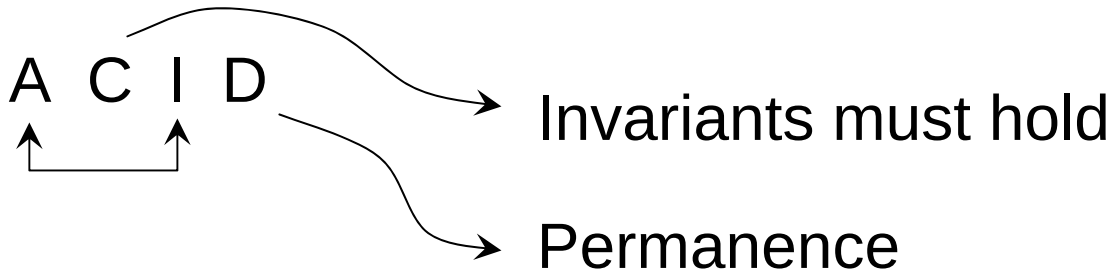
Logs & Locks



Applications

1) Transactions
   - Consistency
   - Durability
2) Multi-site atomicity

Transactions



Centralized

Integrity rules

SID	Name	DeptID
35	----	43

Dept ID	Dept name
43	
25	

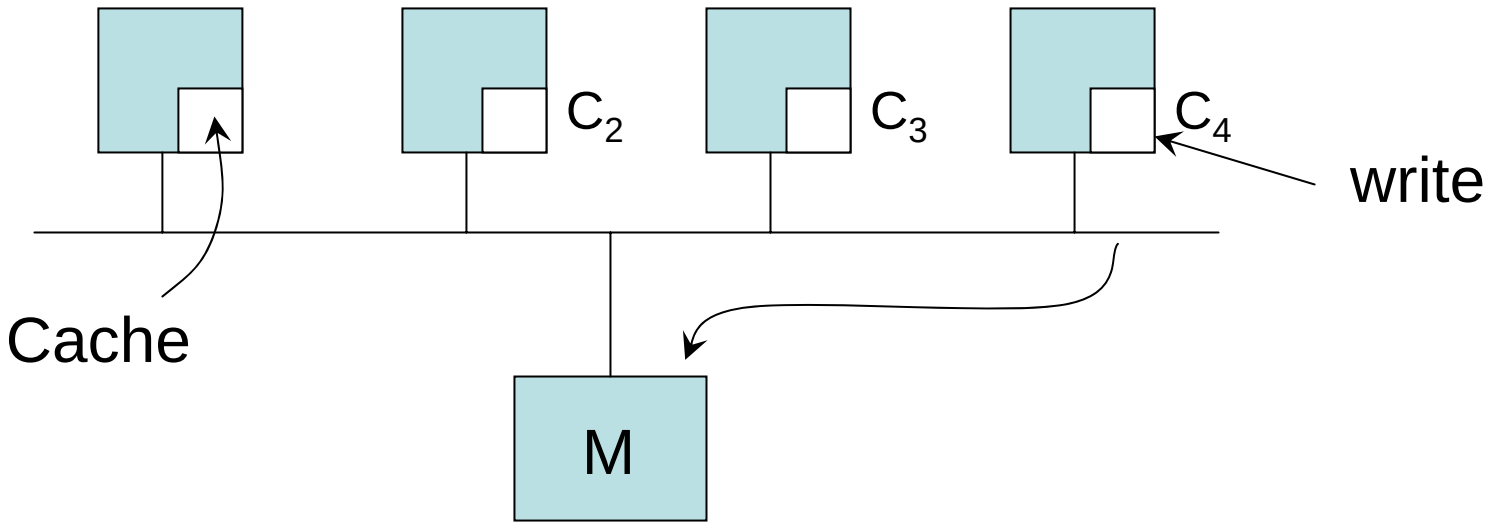
Distributed Data

- DNS → Expiration time
- Web caches
  - ↳“if-modified-since”

Strong cons:

Read returns result of last write

Eventual consistency



1) Write-thru cache
2) Snoopy cache