

Combating Deadlocks (2)

3. Deadlock Prevention

• Set up the system so one of the *necessary conditions* is violated

1. *Some objects are accessed in exclusive lock modes*

- Fix: Allow read-only access to objects

2. *Transactions holding locks cannot be preempted*

- Fix: Allow preemption of some transactions

3. *There is a circular wait (cycle) in the Wait-for graph*

- Fix: Lock all objects in the beginning; if fail any, abort transaction
=> No cycles in Wait-for graph