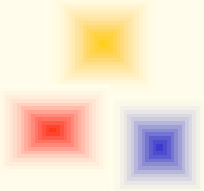

- What to do when detected?

1) Pick a victim (youngest, minimum abort cost, …)
2) Abort the victim and release its locks and resources
3) Grant a waiter
4) Restart the victim (automatically or manually)

(2) Deadlock avoidance

1) Requesting all locks at initial time of transaction.
2) Requesting locks in a specified order of resource.
3) Abort once conflicted.
4) Transaction Retry

Every transaction is uniquely time stamped. If T_A requires a lock on a data object that is already locked by T_B, one of the following methods is used:

a) Wait-die: T_A waits if it is older than T_B, otherwise it "dies", i.e. it is aborted and automatically retried with original timestamp.

b) Wound-wait: T_A waits if it is younger than T_B, otherwise it "wound" T_B, i.e. T_B is aborted and automatically retried with original timestamp.

In above, both have only one direction wait, either older → younger or younger → older. It is impossible to occur wait in cycle, so the dead lock is avoided.