

Optimistic lock

Optimistic locking is a concurrency control method that assumes multiple transactions can frequently complete without interfering with each other. When transactions run, they use data resources without acquiring locks on those resources. Before committing, all transactions verify that no other transaction has modified the data it has read. If modification occurred, the committing transaction rolls back and can be restarted. Optimistic locking is best used when there is low data contention. If data contention is frequent, performance will suffer because of repeatedly starting transactions.

Pessimistic lock

Pessimistic locking is when a lock is placed on a record during a transaction. The lock prevents other transactions from manipulating the record. The downside to this locking method is users can be locked out for a long time, which harms system performance. Pessimistic locking is best used where data contention is heavy. In other words, where the cost of protecting data is less than the cost of rolling back transactions.

The purpose of these locking methods is to prevent lost updates and dirty reads.

Sources:

- https://en.wikipedia.org/wiki/Optimistic_concurrency_control
- [https://en.wikipedia.org/wiki/Lock_\(computer_science\)](https://en.wikipedia.org/wiki/Lock_(computer_science))