4.6.2 Serialization --- the criterion for concurrency consistency

Definition: suppose $\{T_1, T_2, \ldots T_n\}$ is a set of transactions executing concurrently. If a schedule of $\{T_1, T_2, \ldots T_n\}$ produces the same effect on database as some serial execution of this set of transactions, then the schedule is serializable.

Problem: different schedule → different equivalent serial execution → different result? (yes, n!)

T_A	T_B	T_C
	Read R1	
Read R2		
		Write R1
	Write R2	

The result of this schedule is the same as serial execution $T_A \rightarrow T_B \rightarrow T_C$, so it is serializable. The equivalent serial execution is $T_A \rightarrow T_B \rightarrow T_C$.

4.6.3 Locking Protocol

Locking method is the most basic concurrency control method. There maybe many kinds of locking protocols.

(1) X locks

Only one type of lock, for both read and write.

Compatibility matrix : NL—no lock X—X lock
Y —compatible N—incompatible

	NL	X
NL	Y	Y
X	Y	N