

CONSISTENCY

Consistency

СОГЛАСОВАННОСТЬ



SpongeBob SquarePants vector trace by kisay ©Nickelodeon

Client side consistency



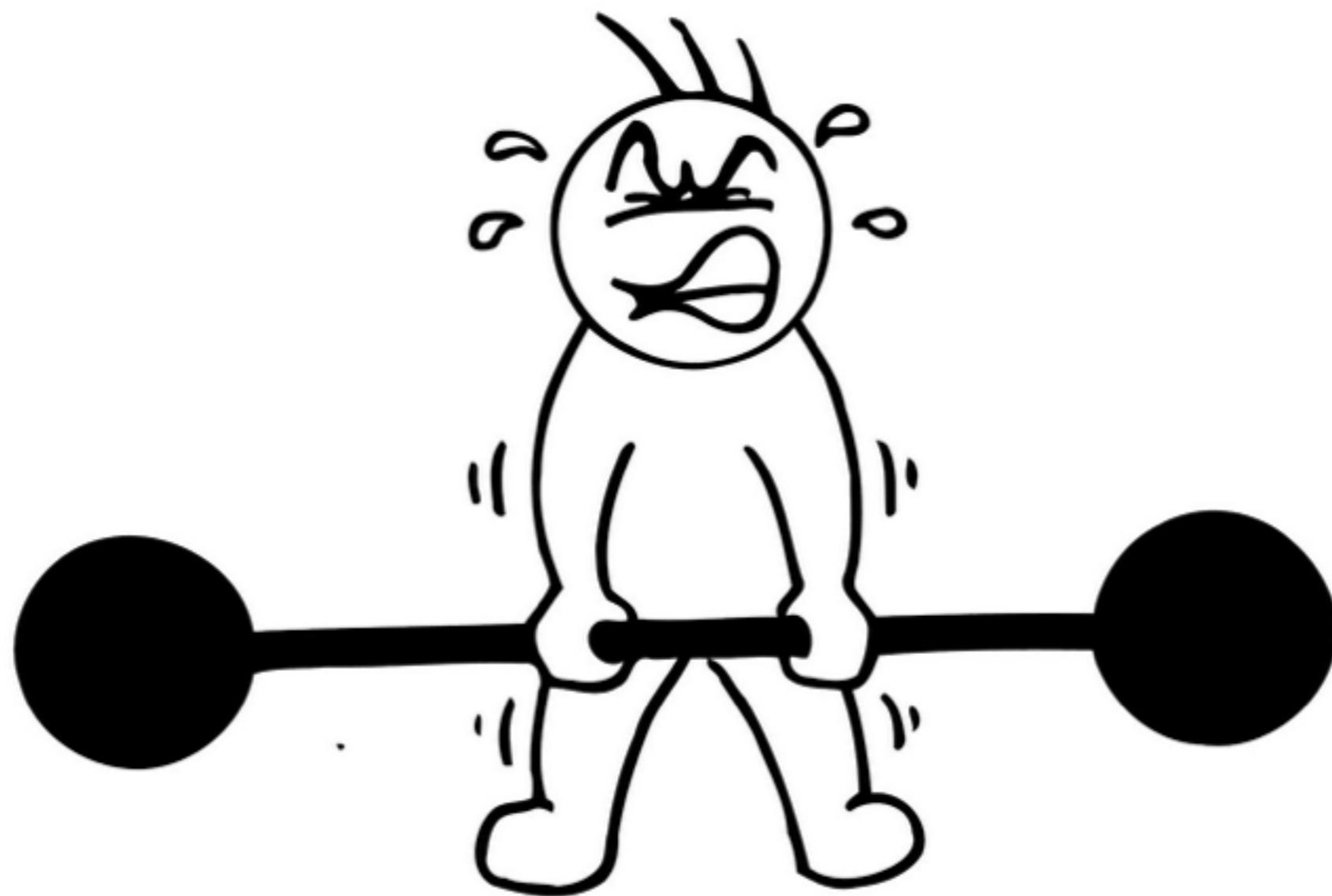
No consistency
INCONSIS
TENT



Strong consistency



Weak consistency



Inconsistency window



Eventual consistency



Eventual Turtle by giftedrunner

Zazzle

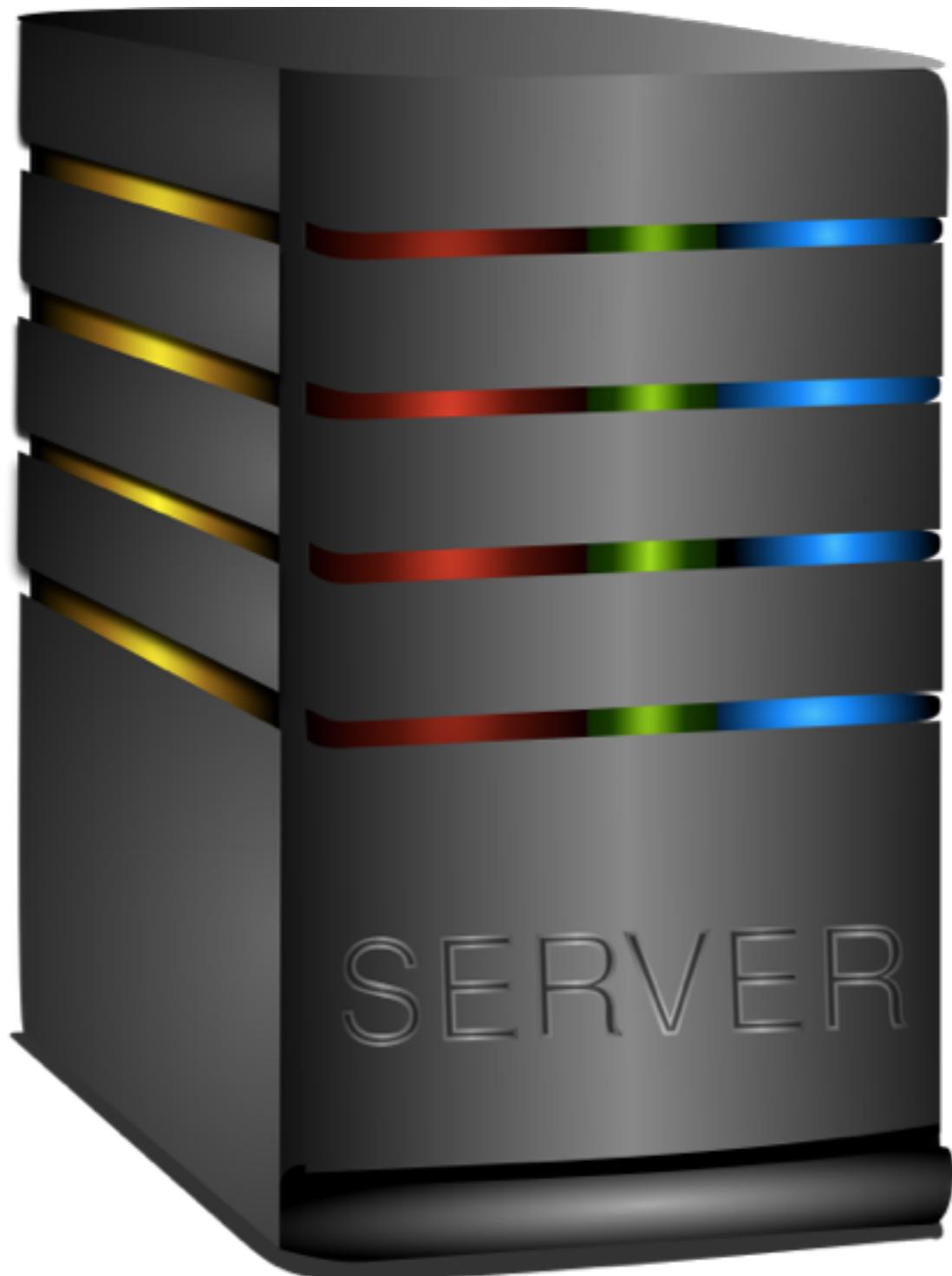
Read-your-writes consistency



Session consistency



Server side consistency



Обозначения

N

Обозначения

W

Обозначения

R

Strong consistency

$$W + R > N$$

Стратегии



One-One

N = 2, W = 1, R = 1

One-All

N = 2, W = 1, R = 2

All-One

N = 2, W = 2, R = 1

Quorum

$N / 2 + 1$

Quorum-Quorum

N = 7, W = 4, R = 4

One-Quorum

N = 7, W = 1, R = 4

Conflict resolution



Read repair



Write repair



Asynchronous repair





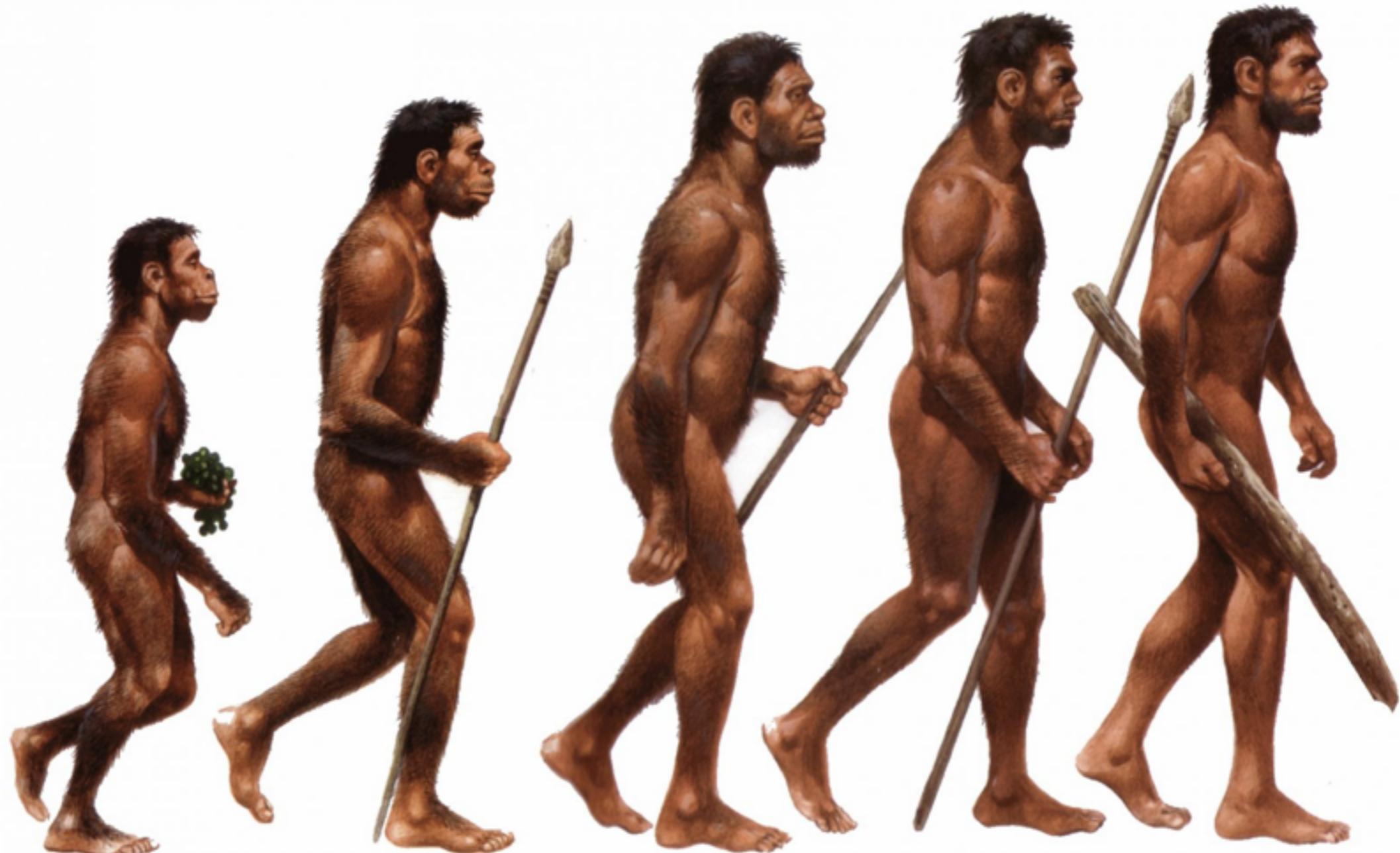
Транзакция



Atomicity



Consistency



Australopithecus

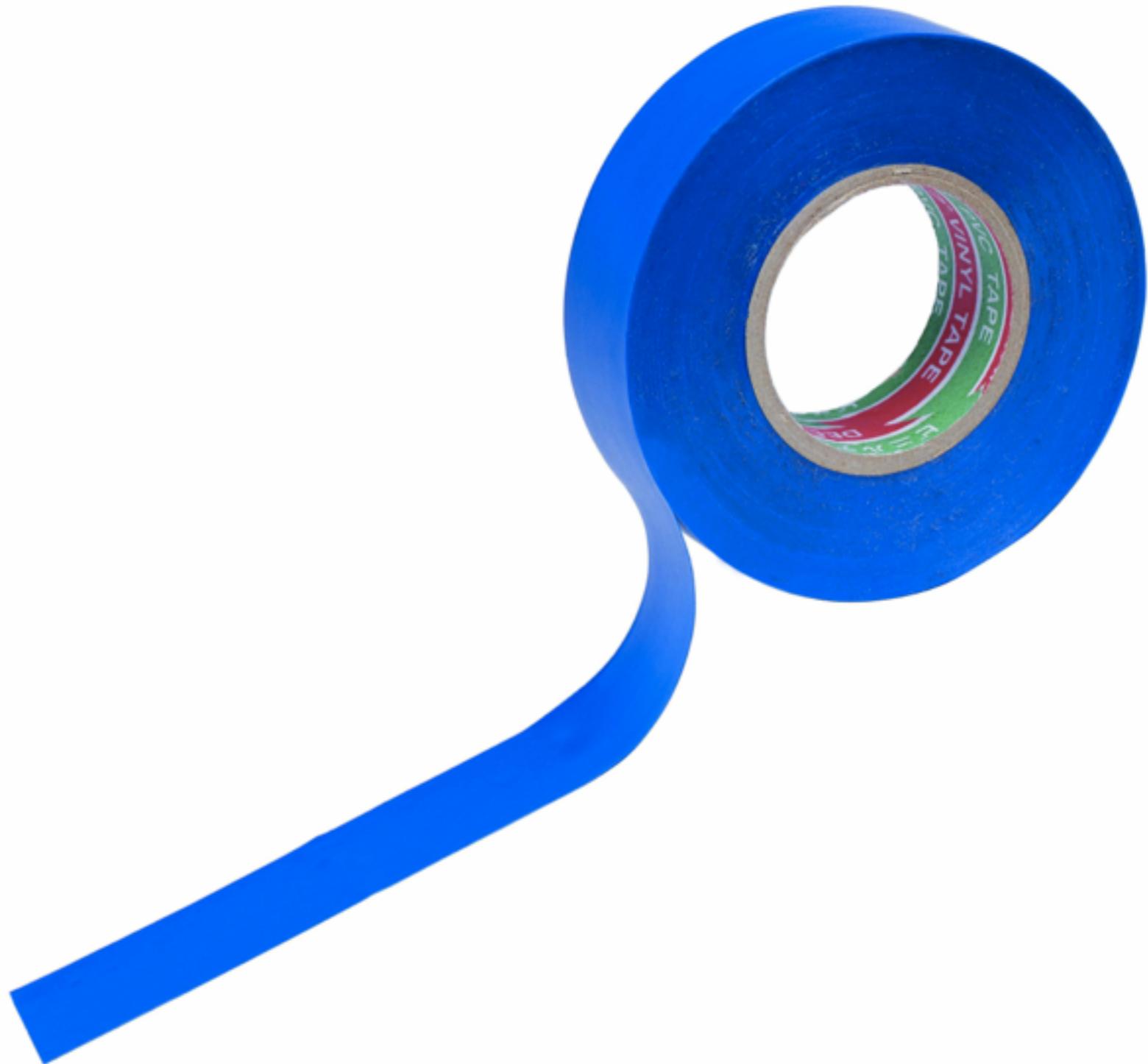
Homo habilis

Homo erectus

Homo sapiens
neanderthalensis

Homo sapiens sapiens

Isolation



Durability



Проблемы параллельного доступа

Lost update



Dirty read



Non-repeatable read



Phantom reads



Transaction Isolation Level



Read uncommitted



Read committed



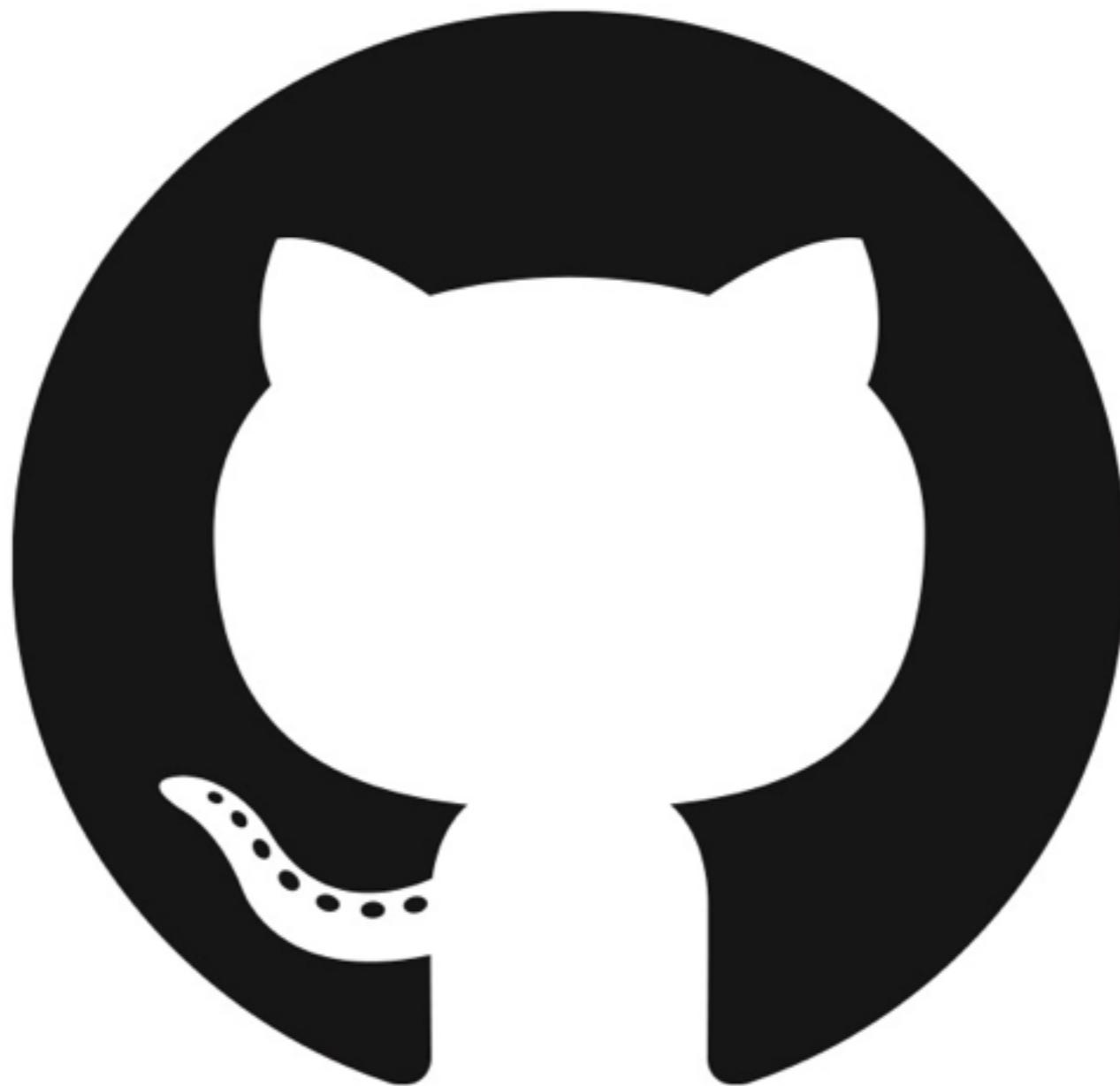
DONE!



Блокирование



Версионирование



Repeatable read



Serializable

