SQL ↩

DataBase : 2 : ACID : BASE
↳ NOSQL

ACID
- Atomicity
  - { All done or nothing
  - ↳ A transaction must either finish completely or not run at all
  - ↓
  - A transaction of group of operations
    1. Decrease stock count from seller
    2. Decrease balance from buyer
    3. increase balance of seller
    4. create order entry
    5. Generate invoice
    - If any step fails, the db does rollback
    - ↳ Undo everything
- Isolation
  - { Transactions must not interfere
  - ↳ so transactions don't conflict in each other
- Durability
  - { data never gets lost
  - ↳ Data is never lost if the server crashes
- consistency
  - { Data must be always valid
  - Ex: Primary key, foreign key

↳ NO SQL

BASE
- Basically available
  - { system always works even under huge traffic
  - ⇒ Basically Available : always on
    - Even when :
      - Server down
      - A network link fails
      - A region goes offline
- Soft - State
  - { Data may be temporarily out of sync
- Eventually consistent
  - { All replica's will become consistent after some time

Feature	ACID (SQL)	BASE (NoSQL)
Priority	Correctness	Speed & availbility
Write model	One leader	Many leaders
Consistency	Strong	Eventual
Scaling	Vertical { For write replica }	Horizontal
Storage	Structured tables	Flexible Schema