SQL v/s NoSQL

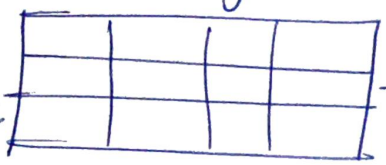
→ Four dimensions in which we compare.

1. Structure
2. Nature
3. Scalability
4. Properties

(I) SQL

(1) Structured Query language

{Relations b/w multiple tables}



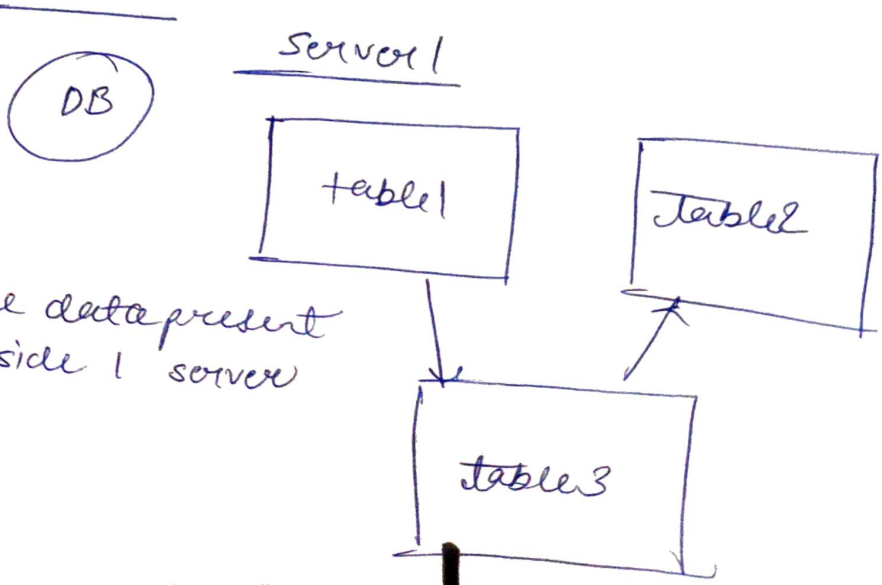
(RDBMS)

(2) Query helps to manage the data in a table

(2) Predetermined Schema

(3) Relations b/w Rows & columns and also multiple tables.

Nature



* whole data present inside 1 server

Scalability

Two ways:

Vertical - Increase storage capacity.

Horizontal - Sharding

Multiple tables can store in diff. servers (Not possible)

Property

ACID } Data Integrity & should be consistent

NoSQL

(1) Structure

Unstructured data

1. key value DB
2. Document DB
3. column wise DB
4. Graph DB

→

key	value
1	String / Json / Integer

Only query to the keys

value → opaque

Search & update based on key

eg - DynamoDB

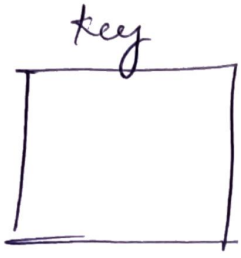
(2) Document DB

key	value
1	Json / xml

Search Based on key & Query on the values

eg - MongoDB

(3) Columnwise

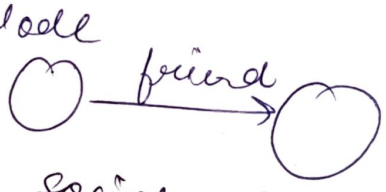


eg -

10001 → { first : Sundaram
dept : CSE }

* No. of columns is dynamic

(4) GraphDB



In the Relationship of Nodes & Edges

eg - Social Networking, Recommendation

Nature

Distributed in nature

Scaling

Horizontal, more nodes can be added on demand.

Property

BA → Basically Available (Replica)
S → Safe state
E → Eventual consist