Lec-15

NoSQL → Non-Relational Model

↓

"Not only SQL"

- → SQL
  - → Structured data.
  - → constraints
  - → fixed schema.
  - → Vertical scaling

- → NoSQL
  - → structured data unstructured, semi structured
  - → flexible schema.
  - → vertical horizontal

⇒ Data Modeling in SQL vs NoSQL

① SQL

users

ID	first_name	last_name	cell	city
1	Tata	Salt	811	Mumbai

hobbies

ID	user_id	hobby
10	1	scrapbooking
11	1	Games,
12	1	Biking

② NoSQL.

```
{
  "id": 1,
  "first_name": "Tata",
  "last_name": "Salt",
  "cell": "811",
  "city": "Mumbai",
  "hobbies": ["Scrapbooking", "Games", "Biking"]
}
```

→ Advantages of NoSQL:

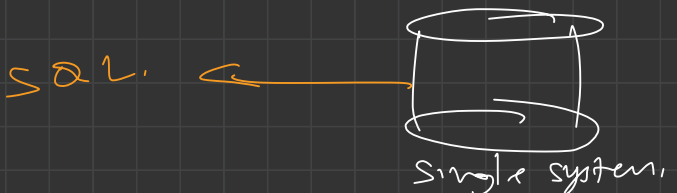
① Flexible schema.

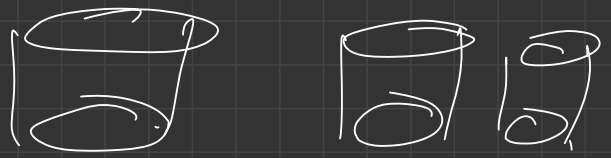
② Horizontal scaling.

① Scaling

Vertical
- → Hardware
- → RAM
- → CPU.

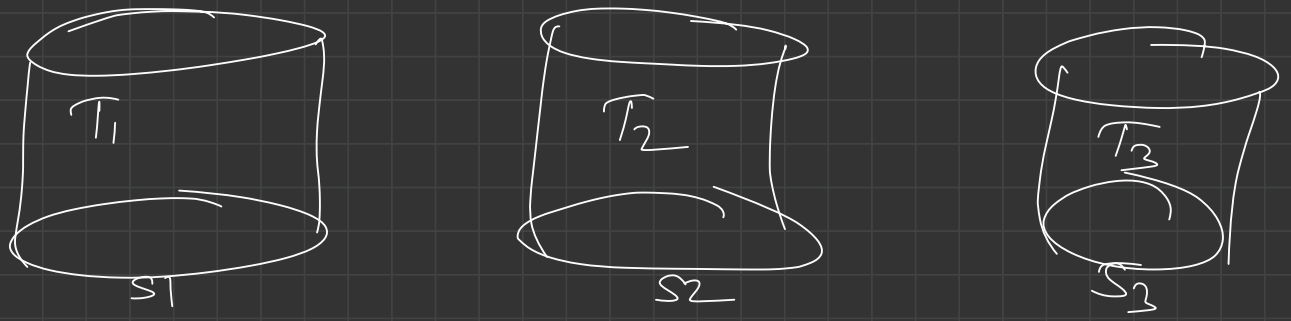
Horizontal scaling
- → additional node.
- → Load share.
- →





⇒ Interview

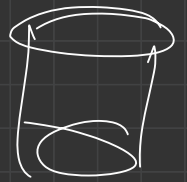
SQL → why No horizontal scaling ?



SQL → Table collection

→ SQL → data retrieve → JOINS

→ slow → entirely slow



=> When to use NoSQL

① Fast development

Tiktok → X.

Instagram → Reels X

→ Types of NoSQL :

1. Key value stores

Key → value.

{

id : 'lakshay'

}

(25) C - Structures

Name	City	age
Madt	Delhi	27
Dave	Jaipur	30

Row wise →

Madt	Delhi	27	Dave	Jaipur	30

0x01 0x02 0x03

Column wise

madt	Dave	Delhi	Jaipur	27	30

③ Document based → MongoDB

inner document

{

id:

}

contact

{ id: — ..

}

access

{ id: — —

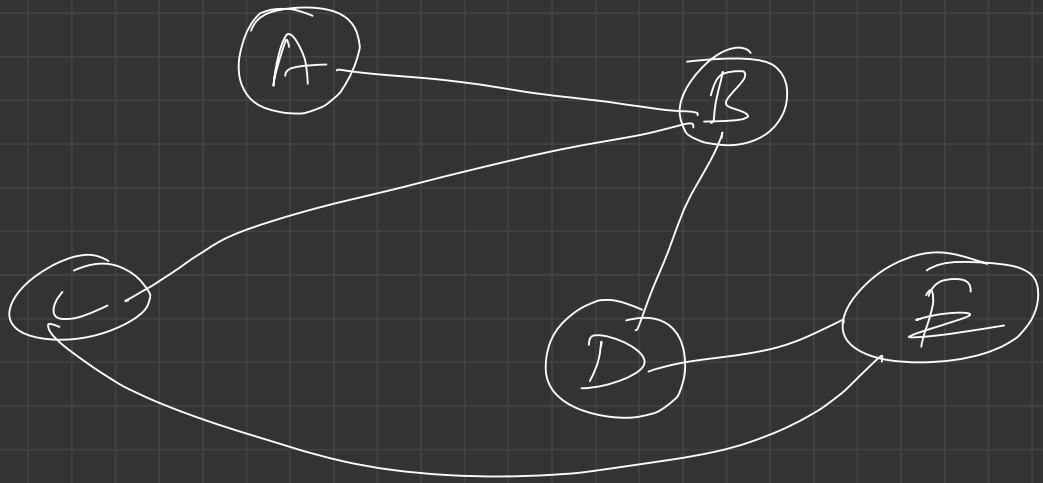
}

④ Graph Based store

→ data → Nodes (vertices) ← Edges (Relation)

Facebook →

Relation



⇒ Disadvantage :-