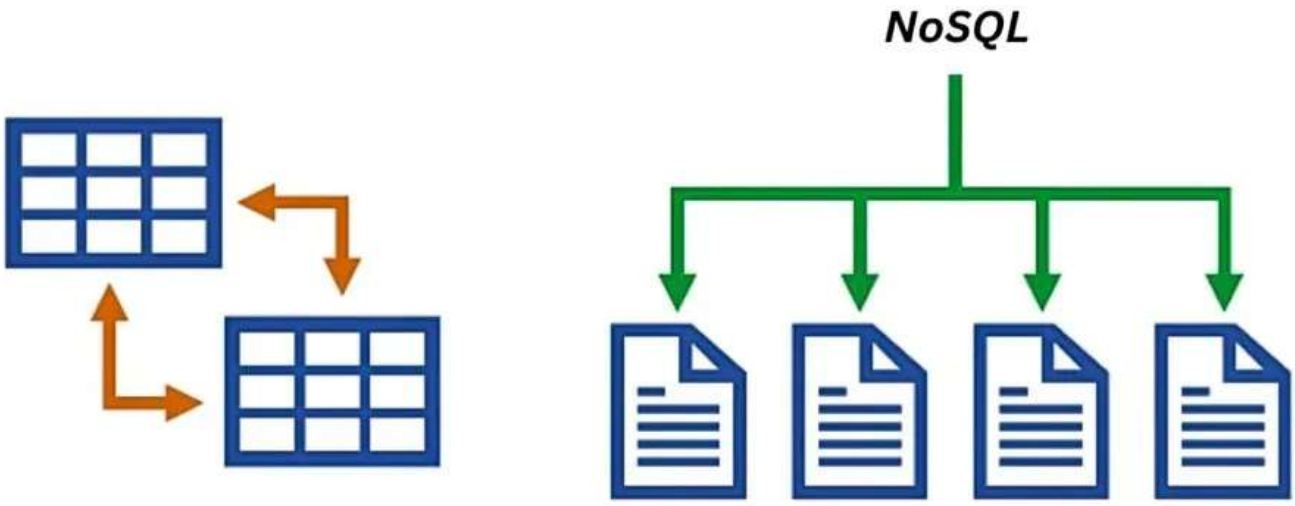
SQL vs NoSQL

(With Examples)



Swipe>>

Structure

SQL → Uses tables (like an Excel sheet)

```sql
CREATE TABLE employees (
    id INT PRIMARY KEY,
    name VARCHAR(50),
    department VARCHAR(50)
);
```

NoSQL → Uses flexible documents (JSON files)

```json
{
  "id": 1,
  "name": "John Doe",
  "department": "IT"
}
```

Schema

SQL → **Fixed structure,** all rows follow the same format.
NoSQL → **Flexible structure**, each record can have different fields.

Scalability

SQL → **Vertical Scaling** (adding more CPU/RAM).
NoSQL → **Horizontal Scaling** (adding more servers).

Coding Notes in bio

@code_helping

Query Language

SQL Example: Get all employees in IT department

```sql
SELECT * FROM employees WHERE department = 'IT';
```

NoSQL Example (MongoDB): Same query in NoSQL.

```
db.employees.find({ "department": "IT" })
```

Use Cases

SQL → Used for **banking, CRM**, and e-commerce where data consistency is crucial.

NoSQL → Used for **social media, IoT**, and real-time applications needing fast scalability.

Which to Choose?

Need structured & reliable data? → SQL
Need flexibility & speed? → NoSQL

Coding Notes in bio