SQL vs NoSQL

🧠 **SQL Database কী?**

👉 **Relational Database**

→ Data table (rows & columns) আকারে থাকে

→ Fixed schema

Examples:

- MySQL
- PostgreSQL
- Oracle

🔹 **SQL Core Features**

- Tables + Relations
- JOIN support
- ACID transactions
- Strong consistency

📌 Interview line:

"SQL databases provide strong consistency and relational integrity."

🧠 **NoSQL Database কী?**

👉 **Non-relational database**

→ Schema flexible

→ Horizontally scalable

Types:

- Key-Value (Redis)

- Document (MongoDB)

- Column (Cassandra)

- Graph (Neo4j)

◆ **NoSQL Core Features**

- Schema-less

- High scalability

- High availability

- Eventual consistency (usually)

📌 Interview line:

"NoSQL databases are optimized for scale and availability."

⚖️ SQL vs NoSQL (IMPORTANT TABLE)

Topic	SQL	NoSQL
Schema	Fixed	Flexible
Scaling	Vertical	Horizontal
Consistency	Strong	Eventual
Joins	Yes	No / Limited
Transactions	ACID	Limited
Speed	Moderate	High
Use case	Complex relations	Large-scale systems

🎯 When to Choose SQL?

✅ Strong consistency required

✅ Complex joins

✅ Financial data

📌 Line:

"I choose SQL when data integrity is critical."

🎯 When to Choose NoSQL?

✅ Massive scale

✅ Flexible schema

✅ High read/write throughput

📌 Line:

"I choose NoSQL for large-scale, distributed systems."

🏆 FAANG Final Killer Answer 💎

Use this:

"I choose SQL for transactional systems requiring strong consistency and NoSQL for high-scale, low-latency systems with flexible schema."

🔚 One-Line Memory Hook

SQL = Correctness first
NoSQL = Scale first