Aspect	RDBMS	NoSQL
Data Model	**Relational** (tables with rows and columns, strict schema)	**Non-relational** (can be document, key-value, column, or graph-based, with flexible schema)
Schema	**Fixed schema**; requires defining the structure in advance (schema-on-write)	**Flexible schema**; schema-less or schema-on-read, which allows for dynamic data structures
Scalability	**Vertical scalability** (adding more power to a single server)	**Horizontal scalability** (adding more servers or nodes to distribute data)
Data Integrity	**High data integrity** with ACID (Atomicity, Consistency, Isolation, Durability) transactions	Supports **eventual consistency** in most cases; some NoSQL databases support ACID within local transactions
Complex Querying	Powerful querying capabilities with **SQL** and support for **joins, subqueries, and aggregations**	Basic querying; **NoSQL** query languages vary by type (e.g., map-reduce, graph traversal); limited or no join support
Transaction Support	**ACID-compliant**; ensures strong consistency and reliability for critical transactions	Generally **BASE** (Basically Available, Soft state, Eventual consistency); may lack full ACID compliance
Data Type Support	Supports **structured data** and predefined data types	Handles **unstructured, semi-structured, and structured data**
Scaling Limitations	Limited to scaling up; adding nodes is complex due to the fixed schema and strict consistency requirements	Built for **scaling out** across distributed nodes; designed to work efficiently in large distributed environments
Flexibility	Less flexible; schema changes require altering the database structure	Highly flexible; can easily adjust to changes in data structure, especially with document-based NoSQL databases
Performance	High performance with structured data and complex queries, but can degrade with scaling	High performance with large-scale unstructured data and distributed storage

Use Cases	Suitable for applications requiring **complex queries, strong consistency, and data integrity** (e.g., financial transactions, ERP)	Ideal for **big data, real-time analytics, content management, and IoT** (e.g., social media, e-commerce)
Examples	MySQL, PostgreSQL, Oracle, SQL Server	MongoDB, Cassandra, Couchbase, Redis, Neo4j