

## Database Selection as per Project

Project	Database Chosen	Advantages	Disadvantages
E-commerce Website	MySQL / PostgreSQL	<ul style="list-style-type: none"> <li>✓ Strong consistency</li> <li>✓ Easy handling of catalogs/orders</li> <li>✓ Mature ecosystem</li> <li>✓ ACID compliance</li> </ul>	<ul style="list-style-type: none"> <li>✗ Harder to scale horizontally</li> <li>✗ Slow with very large data</li> <li>✗ Schema changes costly</li> </ul>
Real-time Chat App	MongoDB	<ul style="list-style-type: none"> <li>✓ Flexible schema</li> <li>✓ Great for unstructured data</li> <li>✓ High write performance</li> <li>✓ Easy scaling</li> </ul>	<ul style="list-style-type: none"> <li>✗ Eventual consistency</li> <li>✗ Difficult joins</li> <li>✗ Weak for complex transactions</li> </ul>
Banking / Financial System	Oracle / PostgreSQL / MS SQL Server	<ul style="list-style-type: none"> <li>✓ Strong consistency &amp; security</li> <li>✓ Complex transactions supported</li> <li>✓ Proven reliability</li> <li>✓ Compliance ready</li> </ul>	<ul style="list-style-type: none"> <li>✗ Expensive</li> <li>✗ Complex to manage</li> <li>✗ Scaling requires sharding/distribution</li> </ul>
IoT & Sensor Data	InfluxDB / Cassandra	<ul style="list-style-type: none"> <li>✓ Optimized for time-series</li> <li>✓ High-volume writes</li> <li>✓ Good scalability</li> <li>✓ Time-based querying</li> </ul>	<ul style="list-style-type: none"> <li>✗ Not suited for relational data</li> <li>✗ Needs time-series schema expertise</li> <li>✗ Smaller ecosystem</li> </ul>
Social Media Platform	Neo4j + Cassandra	<ul style="list-style-type: none"> <li>✓ Perfect for relationships</li> <li>✓ Scales for billions of posts</li> <li>✓ Fast connected data queries</li> </ul>	<ul style="list-style-type: none"> <li>✗ Managing multiple DBs complex</li> <li>✗ Requires graph query knowledge</li> <li>✗ Higher infra costs</li> </ul>
CMS / Blog	MySQL / PostgreSQL	<ul style="list-style-type: none"> <li>✓ Easy structured content mgmt</li> <li>✓ Works with frameworks</li> <li>✓ Stable &amp; mature</li> </ul>	<ul style="list-style-type: none"> <li>✗ Scaling large CMS needs caching</li> <li>✗ Less flexible with frequent schema changes</li> </ul>