

NO SQL DATABASES – UNIT-WISE TOPICS

Unit – I: Why NoSQL

The Value of Relational Databases, Impedance Mismatch, Application and Integration Databases, Attack of the Clusters, The Emergence of NoSQL.

Aggregate Data Models: Aggregates, Column-Family Stores, Summarizing Aggregate-Oriented Databases.

More Details on Data Models: Relationships, Graph Databases, Schemaless Databases, Materialized Views, Modeling for Data Access.

Unit – II: Distribution Models

Single Server, Sharding, Master-Slave Replication, Peer-to-Peer Replication, Combining Sharding and Replication.

Consistency: Update Consistency, Read Consistency, Relaxing Consistency, Relaxing Durability, Quorums.

Version Stamps: Business and System Transactions, Version Stamps on Multiple Nodes.

Map-Reduce: Basic Map-Reduce, Partitioning and Combining, Composing Map-Reduce Calculations.

Unit – III: Key-Value Databases

What Is a Key-Value Store, Key-Value Store Features, Suitable Use Cases, When Not to Use.

Document Databases: What Is a Document Database, Features, Suitable Use Cases, When Not to Use.

Unit – IV: Column-Family Stores

What Is a Column-Family Data Store, Features, Suitable Use Cases, When Not to Use.

Graph Databases: What Is a Graph Database, Features, Suitable Use Cases, When Not to Use.