

1. NoSQL Databases

NoSQL is an approach to database design that can accommodate a wide variety of data models, including key-value, document, columnar and graph formats. NoSQL, which stand for "not only SQL," is an alternative to traditional relational databases in which data is placed in tables and data schema is carefully designed before the database is built. NoSQL databases are especially useful for working with large sets of distributed data.

2.Types of NoSQL databases-

There are 4 basic types of NoSQL databases:

Key-Value Store - It has a Big Hash Table of keys & values {Example- Amazon S3 (Dynamo)}

Document-based Store- It stores documents made up of tagged elements. {Example- CouchDB}

Column-based Store- Each storage block contains data from only one column, {Example- HBase, Cassandra}

Graph-based-A network database that uses edges and nodes to represent and store data. {Example- Neo4J}

3. C-A-P Theorem

- Consistency - This means that the data in the database remains consistent after the execution of an operation. For example after an update operation, all clients see the same data.
- Availability - This means that the system is always on (service guarantee availability), no downtime.
- Partition Tolerance - This means that the system continues to function even if the communication among the servers is unreliable, i.e. the servers may be partitioned into multiple groups that cannot communicate with one another.