**JDBC and Database Connectivity**

NoSQL was designed for allowing frequent application changes and making programming simpler for developers. It is also faster since the queries do not require joins. NoSQL would be a good option when you need flexibility, speed, and want a larger database.

**Types of NoSQL Databases:**

* Key-Value Stores
  + Known as the simplest type of NoSQL database.
  + For each key, there is a value assigned to it. The keys accept only strings.
  + Example: Redis, DynamoDB
* Document Stores
  + Extension of the key-value stores. Makes it easier to map Objects.
  + Schema free so you don’t have to define a schema beforehand.
  + Does not support relations.
  + Example: MongoDB, Couchbase
* Column-Family Stores
  + Organize data into columns grouped by column families, with support for wide rows and scalable, distributed storage
  + Example: Apache Cassandra
* Graph Databases
  + Its purpose is to store graph-oriented data structures.
  + every node contains a direct pointer to its adjacent element and no index lookups are necessary
  + Better used when traversing through a list of connected data.
  + Example: Neo4j, Amazon Neptune

**NoSQL**

* Fast queries since queries do not require joins.
* Requires less code which makes it easier for developers
* Flexible schema allows you to easily make changes.

**SQL:**

* If your data model has a lot of entities with a lot of relationships, it is best to go with SQL.
* Although NoSQL makes programming more simple, there is no structure to it like in SQL.
* SQL enforces ACID (atomicity, consistency, isolations, and durability) and you can practically do anything with relational databases.

**Popular NoSQL databases:**

**MongoDB:** The number 1 most popular NoSQL database. It is document based. Some key features include improved indexing, better replication, and ad-hoc queries.

**Amazon DynamoDB:** Key-value and document stored database. Part of AWS, it offers built-in security, automated backups and replication, in-memory caching, and data import/export tools.

**Redis:** An open-source NoSQL database that works in memory. Redis supports a wide variety of data structures. Some key features are better performance, simplicity, and flexible data structures.