Week7 Agenda

No-SQL Database.

Types

Use-case

Integrating with Spring-boot application.

Micro-service.

No-SQL Database. -Schema less Design.

RDBMS (SQL) – We store the data in a well structured format. (We design the schema first and add the data later)

Creating table with multiple columns. Specifying the data type of each column.

No-SQL – Dynamic in nature.

SQL – Static Data (Data format won’t change over a period of time)

Mongo DB – Document Based No-SQL Database.

What is Mongo DB -- The **database** for **dynamic**, demanding software.

Using MongoDB locally. [Local Installation]

1. Download the installer as per the target OS (operating system)
2. Community Edition of MongoDB (<https://www.mongodb.com/products/self-managed/community-edition>) -- <https://fastdl.mongodb.org/windows/mongodb-windows-x86_64-8.2.1-signed.msi>
3. Using Docker - <https://hub.docker.com/r/mongodb/mongodb-community-server>
4. MongoDB Compass - is a GUI (Client) to interact with MongoDB Server

Document based DB.

Micro-service.

ARS – Airline Reservation System – v2 (Monolith Version) – One Complete Spring boot application which comprises of all the modules.

Users/Passengers

Reservations

Flights

Airlines

Payments

Offers

Ratings

Reviews

MongoDB Server Default port number 27017

MongoDB Connection URI -- mongodb://localhost:27017

IP address of Localhost --- mongodb://127.0.0.1:27017

Monolith. – Difficult to Test. Tightly coupled. Modules are inter dependent.

Micro-service – SOA (Service Oriented Architecture)

DB – (Client & Server )

Types of Server

1. Web Server – http/https, (JSP, Servlets, JSF)
2. Application Server – (Web Server + Additional Features – JNDI, JMS, Messaging Queue, EJB, etc.,)
3. Database Server -

BSON – Binary JSON – Extended JSON Format.

MongoDB Drivers download URL -- <https://www.mongodb.com/docs/drivers/>

1. Community version – For local installation
2. MongoDB Atlas – Cloud version (No need to install the server locally)
3. Mongosh – MongoDB CLI client
4. MongoDB Compass – MongoDB GUI client

Terminologies used in MongoDB

1. Collection (Database/Schema)
2. Document (Table) – BSON – Improved JSON format.

Arrays will be represented using []

Objects will be represented using {}

BSON Type -- <https://www.mongodb.com/docs/manual/reference/bson-types/#std-label-bson-types>

| **Type** | **Number** | **Alias** | **Notes** |
| --- | --- | --- | --- |
| Double | 1 | "double" |  |
| String | 2 | "string" |  |
| Object | 3 | "object" |  |
| Array | 4 | "array" |  |
| Binary data | 5 | "binData" |  |
| Undefined | 6 | "undefined" | Deprecated. |
| ObjectId | 7 | "objectId" |  |
| Boolean | 8 | "bool" |  |
| Date | 9 | "date" |  |
| Null | 10 | "null" |  |
| Regular Expression | 11 | "regex" |  |
| DBPointer | 12 | "dbPointer" | Deprecated. |
| JavaScript | 13 | "javascript" |  |
| Symbol | 14 | "symbol" | Deprecated. |
| JavaScript with scope | 15 | "javascriptWithScope" | Deprecated. |
| 32-bit integer | 16 | "int" |  |
| Timestamp | 17 | "timestamp" |  |
| 64-bit integer | 18 | "long" |  |
| Decimal128 | 19 | "decimal" |  |
| Min key | -1 | "minKey" |  |
| Max key | 127 | "maxKey" |  |