No SQL Database

Data present in 3 format

1. Structed format
2. Semi structured : json or xml or any other format.
3. Un structured format

Limitation of RDBMS (Relational Database Management System). MySQL, Oracle, Db2, SQL Server etc

1. In RDBMS we can store only structured Data.

Before storing in data in RDBMS database we need to table or schema. Table name, number of columns, each column data types.

Employee 🡪Table

Id(int) PK Name (varchar(10)) age (int) city phono

1 Ravi 21 null null

2 Reeta 25 null null

3 Steven 23 Bangalore null

4 Raj null null 78774

1. If we want to store employee details with marks or skillset. Column hold single value not multi value.

Id Name salary skillset

1 Steven 45000 C,C++, Java, Python

Employee

Id(PK) Name Salary

1 Steven 45000

SkillSet

SkillId(PK) skillName

1. C
2. C++
3. Java

EmployeeSkillSet

ID empid(FK) skillid(FK)

1000 1 1

1001 1 2

1002 1 3

No SQL database list

1. Mongo db
2. Hbase
3. Cassandra
4. Neo4j

Mongo DB : Mongo DB is an open source no sql database. Which help to store the in using documents concept in the form of json.

Folder :

We can store any type of files or documents.

RDBMS Mongo Db

Database Database

group of tables. Database is group of collections.

Table Collection

Record or tuple documents

Column fields

Each records must be same type each document can be same type or

Different type.

Text format json format

We need to start the mongo db database using command as

mongod we need to run this command inside bin folder of mongodb database.

When we run this command server create set of files which help to run server.

Default path for server is in window

C driver data ->db

Inside C drive create one folder as data and inside data folder create folder as db

Non window user

Open terminal sudo mkdir -p /data/db

In same terminal run mongod

Window user open the terminal or command prompt inside bin folder of mongo db server.

Run the command as mongod to start the server. Don’t close this terminal.

Then open another terminal inside bin folder and run the command as mongosh. It mongo mongo shell which help to interact with database.

In mongo shell we need to write the commands.

Show databases;

Or

Show dbs to check databases present in mongo database.

use databasename;

use mydb; this command it check database already present it will switch to database else it will create and switch to that database.

show collections ; this command is use to display all collection like tables in current databases.

Mongo db provided pre defined object ie db

db.createCollection(“Sample”) this command create the collection. Collection is case sensitive.

collection is like a table. In mongo db inside collection we can add more than one documents in the form of json format.

db.collectionName.insertOne({key:value});

**db.Sample.insertOne({name:"Raj",age:21});**

To view all documents from Sample collection.

db.collectionName.find();

mongo db internally create pre defined field for each document with unique alphanumerical values.

Retrieve all fields and specific fields

db.Employees.find(); like select \* from employees in mysql

db.Employees.find({},{name:1}); \_id and name

db.Employees.find({},{name:1,salary:1); name,salary and \_id

db.Employees.find({},{name:1,salary:1,\_id:0}); retrieve name and salary

like select name,salary from employee in mysql

retrieve document from collection with condition.

mydb> db.Employees.find({\_id:101});

[ { \_id: 101, name: 'Ravi', age: 21, deptId: 100, salary: 45000 } ]

mydb> db.Employees.find({age:28});

[ { \_id: 104, name: 'Lex', age: 28, deptId: 102, salary: 25000 } ]

mydb> db.Employees.find({name:'Neena'});

[ { \_id: 108, name: 'Neena', age: 27, deptId: 102, salary: 26000 } ]

mydb>

db.Employees.find({salary:{$gt:25000}});

db.Employees.find({salary:{$gte:25000}});

db.Employees.find({salary:{$lt:25000}});

db.Employees.find({salary:{$lte:25000}});

update the document

db.Employees.updateOne({\_id:101},{$set:{salary:48000}});

db.Employees.updateMany({deptId:101},{$set:{salary:40000}});

remove the document

db.Employees.deleteOne({\_id:102});

db.Employees.deleteMany({deptId:101});

create another collection students

\_id sname age tech (java, python, C or C++).

In json value can be number, string type, Boolean type, array type.

Creating student collection with skillset as array value

db.Student.insertOne({\_id:1,sname:"Raj",age:21,skillset:["Java","Python"]});

db.Student.insertOne({\_id:2,sname:"Steven",age:23,skillset:["Java","Python","Angular","React js"]});

db.Student.insertOne({\_id:3,sname:"Leena",age:25,skillset:["C"]});

db.Student.insertOne({\_id:4,sname:"Veena",age:23});

db.Student.find({skillset:”Java”});