

## 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

2. 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 mongoddb 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:{>25000}});
```

```
db.Employees.find({salary:{>=25000}});
```

```
db.Employees.find({salary:{<25000}});
```

```
db.Employees.find({salary:{<=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"});
```