

Evening session :: Spring MVC(revision + remaining concepts + CRM project)
Tommo morning session :: Spring MongoDB(crud operations project)
On Saturday/Sunday ::SpringRest(9.00AM to 2.00PM)
From monday onwards ::Microservices(2 sessions per day[morning/evening])[videos will be uploaded]

SpringData MongoDB

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=> Spring data provides unified model to work with both SQL and NoSQL DB s/ws.
=> SQL DB s/w are oracle, postgresql,mysql and etc(DB tables based)
=> NoSQL Dbs/w are MongoDB,Cassandra,Couchbase,neo4j etc...(key-value based,document based,graph based etc...)
=> If data is having fixed format and schema then we need to go SQL DB/sw.
=> If data is dynamically growing and no fixed format then go for NoSQL DB/sw.

Difference b/w SQL and NoSQL

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refer:: 19_04_2023_SpringBoot_mongodb_images

MongoDB

=====

=> It is document-based NOSQL DB s/w.
=> It internally maintains the data in the form of JSON Documents
JSON :: Java Script Object Notation

eg#1.

```
=>{
    "Name": "sachin",
    "address": {
        "city": "Bandra",
        "country" : "IND",
        "State" : "Mumbai"
    }
    "PhoneNumbers": ["111-222-333","999-888-777-66"]
}
```

eg#2.

```
{
    "emp_details":[
        {
            "emp_name":"sachin",
            "email": "sachin@mi.com",
            "job_profile": "batsman"
        },
        {
            "emp_name":"dravid",
            "email": "dravid@rcb.com",
            "job_profile": "keeper"
        },
        {
            "emp_name":"dhoni",
            "email": "dhoni@csk.com",
            "job_profile": "captain"
        }
    ]
}
```

MongoDB software installation

MongoDB download
link:: https://fastdl.mongodb.org/windows/mongodb-windows-x86_64-6.0.5-signed.msi

select windows => select msi -> download
Install the setup file just like normal software(double click install)
Installation video link :: https://www.youtube.com/watch?v=1y5sAnn0ans&ab_channel=CSCORNERSunitaRai

MongoDB port no :: 27017

Note: we have multiple mongodb gui tools or clients s/w like compass,robot3t etc...

To start mongodb software:: C:\Program Files\MongoDB\Server\4.4\bin\mongo.exe

SQL Terminologies

Physical db software(like oracle,mysql)
|---> Logical db (SID)
|=> db tables(rows and columns)

=> Db table maintains records in the form of rows and columns

NoSQL Terminologies

Physical DB software(like MongoDB)
|=> Logical DB1
|=> Collection1(document1,document2,...)[JSON]

Difference b/w SQL and No SQL

Table <=====> Collection
Record <=====> Document

MongoDB shell commands

1. add <mongodb_home>\bin folder to path environment variable
path :: C:\Program Files\MongoDB\Server\4.4\bin
2. open mongodb shell using mongo.exe file from command prompt of any location
cmd> mongo

3. To list all logical DBs
cmd> show dbs
MYDB 0.000GB
admin 0.000GB
config 0.000GB
local 0.000GB

4. To create a new logical DB
cmd> use fsDB
switched to db fsDB

Note:: untill u add a collection to logical db, the newly created logical db will not appear in the list of logical dbs.

5. To Create a collection with one document

```

cmd> db.customer.insertOne({cno:7,cname:"dhoni",cadd:"CSK",avg:53})
cmd> db.customer.insertOne({cno:10,cname:"sachin",cadd:"mi",avg:54.5})
cmd> db.customer.insertOne({cno:18,cname:"kohli",cadd:"RCB",avg:54})
cmd> db.customer.insertOne({cno:63,cname:'SKY',cadd:'mi',avg:45.0})

```

6. To list out documents of the collection

```

cmd> > db.customer.find().pretty()
{
  "_id" : ObjectId("643f5667caab5d65806450fc"),
  "cno" : 10,
  "cname" : "sachin",
  "cadd" : "mi",
  "avg" : 54.5
}
{
  "_id" : ObjectId("643f56c8caab5d65806450fd"),
  "cno" : 7,
  "cname" : "dhoni",
  "cadd" : "CSK",
  "avg" : 53
}
{
  "_id" : ObjectId("643f56d8caab5d65806450fe"),
  "cno" : 18,
  "cname" : "kohli",
  "cadd" : "RCB",
  "avg" : 54
}

```

7. To insert many documents at once into collection

```

> db.customer.insertMany([{cno:19,cname:"dravid",cadd:"RCB"},
{cno:45,cname:"rohith"}])
{
  "acknowledged" : true,
  "insertedIds" : [
    ObjectId("643f597ccaab5d65806450ff"),
    ObjectId("643f597ccaab5d6580645100")
  ]
}

```

8. To display the documents in a pretty fashion

```

> db.customer.find().pretty()
{
  "_id" : ObjectId("643f5667caab5d65806450fc"),
  "cno" : 10,
  "cname" : "sachin",
  "cadd" : "mi",
  "avg" : 54.5
}
{
  "_id" : ObjectId("643f56c8caab5d65806450fd"),
  "cno" : 7,
  "cname" : "dhoni",
  "cadd" : "CSK",
  "avg" : 53
}
{
  "_id" : ObjectId("643f56d8caab5d65806450fe"),
  "cno" : 18,

```

```

    "cname" : "kohli",
    "cadd" : "RCB",
    "avg" : 54
  }
  {
    "_id" : ObjectId("643f597ccaab5d65806450ff"),
    "cno" : 19,
    "cname" : "dravid",
    "cadd" : "RCB"
  }
  {
    "_id" : ObjectId("643f597ccaab5d6580645100"),
    "cno" : 45,
    "cname" : "rohith"
  }
}

```

Note:: <https://www.mongodb.com/docs/manual/introduction/>

9. Inserting document to a collection with array values

```

> db.customer.insertOne({cno:9,cname:'lara',mobileNo:
[9997776655,676676554]})
{
  "acknowledged" : true,
  "insertedId" : ObjectId("643f5bc7caab5d6580645101")
}

> db.customer.find().pretty()
{
  "_id" : ObjectId("643f5667caab5d65806450fc"),
  "cno" : 10,
  "cname" : "sachin",
  "cadd" : "mi",
  "avg" : 54.5
}
{
  "_id" : ObjectId("643f56c8caab5d65806450fd"),
  "cno" : 7,
  "cname" : "dhoni",
  "cadd" : "CSK",
  "avg" : 53
}
{
  "_id" : ObjectId("643f56d8caab5d65806450fe"),
  "cno" : 18,
  "cname" : "kohli",
  "cadd" : "RCB",
  "avg" : 54
}
{
  "_id" : ObjectId("643f597ccaab5d65806450ff"),
  "cno" : 19,
  "cname" : "dravid",
  "cadd" : "RCB"
}
{
  "_id" : ObjectId("643f597ccaab5d6580645100"),
  "cno" : 45,
  "cname" : "rohith"
}

```

```
{
  "_id" : ObjectId("643f5bc7caab5d6580645101"),
  "cno" : 9,
  "cname" : "lara",
  "mobileNo" : [
    9997776655,
    676676554
  ]
}
```

10. To find docs of a collection with condition

```
> db.customer.find({cname:'lara'}).pretty()
{
  "_id" : ObjectId("643f5bc7caab5d6580645101"),
  "cno" : 9,
  "cname" : "lara",
  "mobileNo" : [
    9997776655,
    676676554
  ]
}
```

```
> db.customer.find({cname:'sachin',cadd:'mi'}).pretty()
{
  "_id" : ObjectId("643f5667caab5d65806450fc"),
  "cno" : 10,
  "cname" : "sachin",
  "cadd" : "mi",
  "avg" : 54.5
}
```

```
> db.customer.find({cadd:'mi'}).pretty()
{
  "_id" : ObjectId("643f5667caab5d65806450fc"),
  "cno" : 10,
  "cname" : "sachin",
  "cadd" : "mi",
  "avg" : 54.5
}
{
  "_id" : ObjectId("643f5d37caab5d6580645102"),
  "cno" : 63,
  "cname" : "SKY",
  "cadd" : "mi",
  "avg" : 45
}
```

11. To delete mongodb document

```
> db.customer.remove({cno:63})
> db.customer.deleteOne({cno:45})
{ "acknowledged" : true, "deletedCount" : 1 }
> db.customer.deleteMany({cno:18})
{ "acknowledged" : true, "deletedCount" : 1 }
```

12. To drop a collection

```
> db.customer.drop()
true
> show collections(not finding customer collection)
> show dbs(not finding fsDB logical db also)
```

MYDB	0.000GB
admin	0.000GB
config	0.000GB
local	0.000GB