

FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)
DEPARTMENT OF COMPUTER APPLICATIONS

ADVANCED DBMS LAB

(Semester & Batch: S2 MCA 2020 B Batch)

CYCLE -3

NoSQL Database – Designing, Query Processing,

CO 3	Configuration of NoSQL database
CO 4	Apply CRUD operations and retrieve data in a NoSQL environment.

1. Install the MongoDB Compass GUI and configure it.
2. Create a collection student consists of details like rollno, name, phoneno, marks, address, year of course etc

NoSQL code:

```
> show dbs
admin      0.000GB
config     0.000GB
local      0.000GB
mymongodb  0.000GB
> use StudentB6
switched to db StudentB6
> db.createCollection("student")
  \{ "ok" : 1 }
```

3. Insert the details of the multiple students (atleast 5) in the form of documents in the student collection.

NoSQL CODE:

```
>
db.student.insertMany([{"roll_id":101,name:"Appu",phoneno:9496867367,mark:45
,address:"moozhikkal",year:2012},{roll_id:102,name:"Ammu",phoneno:94968673
67,mark:45,address:"mol",year:2012},{roll_id:103,name:"Anu",phoneno:949686
7367,mark:48,address:"mh",year:2020},{roll_id:104,name:"midhu",phoneno:949
6867367,mark:51,address:"mr",year:2020}]]
{
```

```

    "acknowledged" : true,
    "insertedIds" : [
      ObjectId("61543b48b516465b01d989eb"),
      ObjectId("61543b48b516465b01d989ec"),
      ObjectId("61543b48b516465b01d989ed"),
      ObjectId("61543b48b516465b01d989ee")
    ]
  }
}

```

4. Retrieve the fields rollno, name, phoneno, marks, city for all the documents in the collection student.

NoSQL CODE:

```

>
db.student.find({name:{$eq:"Ammu"}},{_id:0,roll_no:1,name:1,address:1,phoneno:1,mark:1})

{ "name" : "Ammu", "mark" : 45, "address" : "mol" }

```

5. Display the details of students who achieved a score more than 90 and are from 'Thrissur'.

NoSQL CODE:

```

> db.student.find({$and:[{mark:{$gt:90}},{address:"Thrissur "}]})

```

OUTPUT:

```

{ "_id" : ObjectId("61543b48b516465b01d989ee"), "roll_id" : 104, "name" : "midhu", "phoneno" : 9496867367, "mark" : 95, "address" : " Thrissur ", "year" : 2020 }

```

6. Update the phone number of Sujith in the student collection. Retrieve the updated information.

NoSQL CODE:

```

> db.student.updateOne({name:"Sujith"},{$set:{phoneno:96325874}})

{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }

```

7. Update the year of course in all the documents in the student collection to 2021. Also retrieve the updated information.

NoSQL CODE:

```
> db.student.updateMany({year:2020},{set:{year:2021}})

{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }

> db.student.find()

{ "_id" : ObjectId("61543b48b516465b01d989eb"), "roll_id" : 101, "name" : "Abhilash", "phoneno" : 9496867367, "mark" : 45, "address" : "moozhikkal", "year" : 2012 }
{ "_id" : ObjectId("61543b48b516465b01d989ec"), "roll_id" : 102, "name" : "Ammu", "phoneno" : 9496867367, "mark" : 45, "address" : "mol", "year" : 2012 }
{ "_id" : ObjectId("61543b48b516465b01d989ed"), "roll_id" : 103, "name" : "Anu", "phoneno" : 9496867367, "mark" : 48, "address" : "mh", "year" : 2021 }
{ "_id" : ObjectId("61543b48b516465b01d989ee"), "roll_id" : 104, "name" : "Sujith", "phoneno" : 96325874, "mark" : 95, "address" : "Thrisur", "year" : 2021 }
```

8. Delete the details of the student whose name is 'Abhilash' from the student collection

NoSQL CODE:

```
> db.student.deleteOne({name:"Abhilash"})

{ "acknowledged" : true, "deletedCount" : 1 }

> db.student.find()

{ "_id" : ObjectId("61543b48b516465b01d989eb"), "roll_id" : 101, "name" : "Appu", "phoneno" : 9496867367, "mark" : 45, "address" : "moozhikkal", "year" : 2012 }
{ "_id" : ObjectId("61543b48b516465b01d989ec"), "roll_id" : 102, "name" : "Ammu", "phoneno" : 9496867367, "mark" : 45, "address" : "mol", "year" : 2012 }
{ "_id" : ObjectId("61543b48b516465b01d989ed"), "roll_id" : 103, "name" : "Anu", "phoneno" : 9496867367, "mark" : 48, "address" : "mh", "year" : 2021 }
```

9. Retrieve the number of students per department from the student collection.

NoSQL CODE:

```
> db.student.find().count()
```

10. Arrange the name of the students in ascending order along with all the columns.

NoSQL CODE:

```
> db.student.find().sort({roll_id:-1})

{ "_id" : ObjectId("61543b48b516465b01d989ed"), "roll_id" : 103, "name" :
"Anu", "phoneno" : 9496867367, "mark" : 48, "address" : "mh", "year" :
2021 }
{ "_id" : ObjectId("61543b48b516465b01d989ec"), "roll_id" : 102, "name" :
"Ammu", "phoneno" : 9496867367, "mark" : 45, "address" : "mol", "year" :
2012 }
{ "_id" : ObjectId("61543b48b516465b01d989eb"), "roll_id" : 101, "name" :
"Appu", "phoneno" : 9496867367, "mark" : 45, "address" : "moozhikkal",
"year" : 2012 }
```