

ASSIGNMENT-CO4

Aim: To create a student Database with the fields (SRN,SName,Degree,Sem,CGPA).

use student

switched to db student

```
> db.createCollection("students")
{ "ok" : 1 }
```

```
> show collections
```

```
students
```

```
>
```

```
db.students.insert({SRN:'101',SName:'Raichal',Degree:'MCA',Sem:2,CGP
A:8.8},)
```

```
WriteResult({ "nInserted" : 1 })
```

```
>
```

```
db.students.insert({ SRN:'102',SName:'Riya',Degree:'BCA',Sem:2,CGPA:8.89},
... {SRN:'103',SName:'Sona',Degree:'BCA',Sem:2,CGPA:9.0})
```

```
WriteResult({ "nInserted" : 1 })
```

```
> db.students.insert({SRN:'103',SName:'Sona',Degree:'BCA',Sem:1,CGPA:8.1})
```

```
WriteResult({ "nInserted" : 1 })
```

```
>
```

```
db.students.insert({ SRN:'104',SName:'Sneha',Degree:'BCA',Sem:5,CGPA:8.1})
```

```
WriteResult({ "nInserted" : 1 })
```

```
>
```

```
db.students.insert({ SRN:'105',SName:'Roshini',Degree:'MCA',Sem:3,CGPA:7.5
},
```

```
... {SRN:'Tony',SName:'Yuva',Degree:'BCA',Sem:3,CGPA:7})
```

```
WriteResult({ "nInserted" : 1 })
```

```
>
```

```
db.students.insert({ SRN:'106',SName:'Rohini',Degree:'BCA',Sem:3,CGPA:7.5})
```

```
>
```

```
db.students.insert({ SRN:'107',SName:'Olivia',Degree:'BCA',Sem:4,CGPA:7.6})
```

```
> db.students.insert({SRN:'108',SName:'Joe',Degree:'BCA',Sem:4,CGPA:9.9})
```

```
WriteResult({ "nInserted" : 1 })
```

```

>
db.students.insert({SRN:'109',SName:'Ruby',Degree:'BCA',Sem:5,CGPA:9.4})
WriteResult({ "nInserted" : 1 })
> db.students.insert({SRN:'110',SName:'Ava',Degree:'BCA',Sem:6,CGPA:9.3})
WriteResult({ "nInserted" : 1 })

```

1.Display all the documents.

```

> db.students.find().pretty()
{
  "_id" : ObjectId("6278a2f1b79ecfcdcb9b9753"),
  "SRN" : "101",
  "SName" : "Raichal",
  "Degree" : "MCA",
  "Sem" : 2,
  "CGPA" : 8.8
}
{
  "_id" : ObjectId("6278a498b79ecfcdcb9b9754"),
  "SRN" : "102",
  "SName" : "Riya",
  "Degree" : "BCA",
  "Sem" : 2,
  "CGPA" : 8.89
}
{
  "_id" : ObjectId("6278a509b79ecfcdcb9b9755"),
  "SRN" : "103",
  "SName" : "Sona",
  "Degree" : "BCA",
  "Sem" : 1,
  "CGPA" : 8.1
}
{
  "_id" : ObjectId("6278a54fb79ecfcdcb9b9756"),
  "SRN" : "104",
  "SName" : "Sneha",
  "Degree" : "BCA",
  "Sem" : 5,
  "CGPA" : 8.1
}
{
  "_id" : ObjectId("6278a5edb79ecfcdcb9b9757"),
  "SRN" : "105",
  "SName" : "Roshini",
  "Degree" : "MCA",

```

```

    "Sem" : 3,
    "CGPA" : 7.5
  }
  {
    "_id" : ObjectId("6278a656b79ecfcdcb9b9758"),
    "SRN" : "106",
    "SName" : "Rohini",
    "Degree" : "BCA",
    "Sem" : 3,
    "CGPA" : 7.5
  }
  {
    "_id" : ObjectId("6278a6a7b79ecfcdcb9b9759"),
    "SRN" : "107",
    "SName" : "Olivia",
    "Degree" : "BCA",
    "Sem" : 4,
    "CGPA" : 7.6
  }
  {
    "_id" : ObjectId("6278a6cbb79ecfcdcb9b975a"),
    "SRN" : "108",
    "SName" : "Joe",
    "Degree" : "BCA",
    "Sem" : 4,
    "CGPA" : 9.9
  }
  {
    "_id" : ObjectId("6278a6fab79ecfcdcb9b975b"),
    "SRN" : "109",
    "SName" : "Ruby",
    "Degree" : "BCA",
    "Sem" : 5,
    "CGPA" : 9.4
  }
  {
    "_id" : ObjectId("6278a73ab79ecfcdcb9b975c"),
    "SRN" : "110",
    "SName" : "Ava",
    "Degree" : "BCA",
    "Sem" : 6,
    "CGPA" : 9.3
  }
}

```

```

> db.students.find({}, {SName:1})
{ "_id" : ObjectId("6278a2f1b79ecfcdcb9b9753"), "SName" : "Raichal" }

```

```

{ "_id" : ObjectId("6278a498b79ecfcdcb9b9754"), "SName" : "Riya" }
{ "_id" : ObjectId("6278a509b79ecfcdcb9b9755"), "SName" : "Sona" }
{ "_id" : ObjectId("6278a54fb79ecfcdcb9b9756"), "SName" : "Sneha" }
{ "_id" : ObjectId("6278a5edb79ecfcdcb9b9757"), "SName" : "Roshini" }
{ "_id" : ObjectId("6278a656b79ecfcdcb9b9758"), "SName" : "Rohini" }
{ "_id" : ObjectId("6278a6a7b79ecfcdcb9b9759"), "SName" : "Olivia" }
{ "_id" : ObjectId("6278a6cbb79ecfcdcb9b975a"), "SName" : "Joe" }
{ "_id" : ObjectId("6278a6fab79ecfcdcb9b975b"), "SName" : "Ruby" }
{ "_id" : ObjectId("6278a73ab79ecfcdcb9b975c"), "SName" : "Ava" }

```

2. Display all the students in BCA.

db.students.find({Degree:'BCA'})

```

{ "_id" : ObjectId("6278a498b79ecfcdcb9b9754"), "SRN" : "102", "SName" :
"Riya", "Degree" : "BCA", "Sem" : 2, "CGPA" : 8.89 }
{ "_id" : ObjectId("6278a509b79ecfcdcb9b9755"), "SRN" : "103", "SName" :
"Sona", "Degree" : "BCA", "Sem" : 1, "CGPA" : 8.1 }
{ "_id" : ObjectId("6278a54fb79ecfcdcb9b9756"), "SRN" : "104", "SName" :
"Sneha", "Degree" : "BCA", "Sem" : 5, "CGPA" : 8.1 }
{ "_id" : ObjectId("6278a656b79ecfcdcb9b9758"), "SRN" : "106", "SName" :
"Rohini", "Degree" : "BCA", "Sem" : 3, "CGPA" : 7.5 }
{ "_id" : ObjectId("6278a6a7b79ecfcdcb9b9759"), "SRN" : "107", "SName" :
"Olivia", "Degree" : "BCA", "Sem" : 4, "CGPA" : 7.6 }
{ "_id" : ObjectId("6278a6cbb79ecfcdcb9b975a"), "SRN" : "108", "SName" :
"Joe", "Degree" : "BCA", "Sem" : 4, "CGPA" : 9.9 }
{ "_id" : ObjectId("6278a6fab79ecfcdcb9b975b"), "SRN" : "109", "SName" :
"Ruby", "Degree" : "BCA", "Sem" : 5, "CGPA" : 9.4 }
{ "_id" : ObjectId("6278a73ab79ecfcdcb9b975c"), "SRN" : "110", "SName" :
"Ava", "Degree" : "BCA", "Sem" : 6, "CGPA" : 9.3 }

```

3.Display all the students in ascending order.

db.students.find({}, {SName:1, _id:0}).sort({SName:1})

```

{ "SName" : "Ava" }
{ "SName" : "Joe" }
{ "SName" : "Olivia" }
{ "SName" : "Raichal" }
{ "SName" : "Riya" }
{ "SName" : "Rohini" }
{ "SName" : "Roshini" }
{ "SName" : "Ruby" }
{ "SName" : "Sneha" }
{ "SName" : "Sona" }

```

4.Display all the first five students.

> **db.students.find().limit(5)**

```
{ "_id" : ObjectId("6278a2f1b79ecfcdcb9b9753"), "SRN" : "101", "SName" :  
"Raichal", "Degree" : "MCA", "Sem" : 2, "CGPA" : 8.8 }  
{ "_id" : ObjectId("6278a498b79ecfcdcb9b9754"), "SRN" : "102", "SName" :  
"Riya", "Degree" : "BCA", "Sem" : 2, "CGPA" : 8.89 }  
{ "_id" : ObjectId("6278a509b79ecfcdcb9b9755"), "SRN" : "103", "SName" :  
"Sona", "Degree" : "BCA", "Sem" : 1, "CGPA" : 8.1 }  
{ "_id" : ObjectId("6278a54fb79ecfcdcb9b9756"), "SRN" : "104", "SName" :  
"Sneha", "Degree" : "BCA", "Sem" : 5, "CGPA" : 8.1 }  
{ "_id" : ObjectId("6278a5edb79ecfcdcb9b9757"), "SRN" : "105", "SName" :  
"Roshini", "Degree" : "MCA", "Sem" : 3, "CGPA" : 7.5 }  
>
```

5.Display students 5,6,7

> **db.students.find().skip(4).limit(3)**

```
{ "_id" : ObjectId("6278a5edb79ecfcdcb9b9757"), "SRN" : "105", "SName" :  
"Roshini", "Degree" : "MCA", "Sem" : 3, "CGPA" : 7.5 }  
{ "_id" : ObjectId("6278a656b79ecfcdcb9b9758"), "SRN" : "106", "SName" :  
"Helen", "Degree" : "BCA", "Sem" : 3, "CGPA" : 7.5, "name" : "Helen" }  
{ "_id" : ObjectId("6278a6a7b79ecfcdcb9b9759"), "SRN" : "107", "SName" :  
"Olivia", "Degree" : "BCA", "Sem" : 4, "CGPA" : 7.6 }  
>
```

6.Display the degree of all the students.

> **db.students.find({}, {Degree:1, SName:1, _id:0})**

```
{ "SName" : "Raichal", "Degree" : "MCA" }  
{ "SName" : "Riya", "Degree" : "BCA" }  
{ "SName" : "Sona", "Degree" : "BCA" }  
{ "SName" : "Sneha", "Degree" : "BCA" }  
{ "SName" : "Roshini", "Degree" : "MCA" }  
{ "SName" : "Helen", "Degree" : "BCA" }  
{ "SName" : "Olivia", "Degree" : "BCA" }  
{ "SName" : "Joe", "Degree" : "BCA" }  
{ "SName" : "Ruby", "Degree" : "BCA" }  
{ "SName" : "Ava", "Degree" : "BCA" }  
>
```

7. Display student details of 5,6,7 in desc order percentage

db.students.find().skip(4).limit(3).sort({CGPA:-1})

```
{ "_id" : ObjectId("6278a2f1b79ecfcdcb9b9753"), "SRN" : "101", "SName" :  
"Raichal", "Degree" : "MCA", "Sem" : 2, "CGPA" : 8.8 }  
{ "_id" : ObjectId("6278a54fb79ecfcdcb9b9756"), "SRN" : "104", "SName" :  
"Sneha", "Degree" : "BCA", "Sem" : 5, "CGPA" : 8.1 }
```

```
{ "_id" : ObjectId("6278a509b79ecfcdcb9b9755"), "SRN" : "103", "SName" : "Sona", "Degree" : "BCA", "Sem" : 1, "CGPA" : 8.1 }
```

8.Display the number of students in BCA

```
db.students.count({Degree:'BCA'})
```

8

9. Display all the degree without "_i"

```
> db.students.find({Degree:{$not:/_i/}})
```

```
{ "_id" : ObjectId("6278a2f1b79ecfcdcb9b9753"), "SRN" : "101", "SName" : "Raichal", "Degree" : "MCA", "Sem" : 2, "CGPA" : 8.8 }
{ "_id" : ObjectId("6278a498b79ecfcdcb9b9754"), "SRN" : "102", "SName" : "Riya", "Degree" : "BCA", "Sem" : 2, "CGPA" : 8.89 }
{ "_id" : ObjectId("6278a509b79ecfcdcb9b9755"), "SRN" : "103", "SName" : "Sona", "Degree" : "BCA", "Sem" : 1, "CGPA" : 8.1 }
{ "_id" : ObjectId("6278a54fb79ecfcdcb9b9756"), "SRN" : "104", "SName" : "Sneha", "Degree" : "BCA", "Sem" : 5, "CGPA" : 8.1 }
{ "_id" : ObjectId("6278a5edb79ecfcdcb9b9757"), "SRN" : "105", "SName" : "Roshini", "Degree" : "MCA", "Sem" : 3, "CGPA" : 7.5 }
{ "_id" : ObjectId("6278a656b79ecfcdcb9b9758"), "SRN" : "106", "SName" : "Helen", "Degree" : "BCA", "Sem" : 3, "CGPA" : 7.5, "name" : "Helen" }
{ "_id" : ObjectId("6278a6a7b79ecfcdcb9b9759"), "SRN" : "107", "SName" : "Olivia", "Degree" : "BCA", "Sem" : 4, "CGPA" : 7.6 }
{ "_id" : ObjectId("6278a6cbb79ecfcdcb9b975a"), "SRN" : "108", "SName" : "Joe", "Degree" : "BCA", "Sem" : 4, "CGPA" : 9.9 }
{ "_id" : ObjectId("6278a6fab79ecfcdcb9b975b"), "SRN" : "109", "SName" : "Ruby", "Degree" : "BCA", "Sem" : 5, "CGPA" : 9.4 }
{ "_id" : ObjectId("6278a73ab79ecfcdcb9b975c"), "SRN" : "110", "SName" : "Ava", "Degree" : "BCA", "Sem" : 6, "CGPA" : 9.3 }
>
```

10.Display the distinct degrees.

```
db.students.distinct("Degree")
```

```
[ "BCA", "MCA" ]
```

11. Display all the BCA students with CGPA>6 but less than 7.1

```
> db.students.find({CGPA:{$gte:6,$lt:7.1}}, {Degree:"BCA"})
```

12.Display all the BCA students and in 6th sem.

```
> db.students.find({$and:[{Degree:"BCA"},{Sem:6}]})
```

```
{ "_id" : ObjectId("6278a73ab79ecfcdcb9b975c"), "SRN" : "110", "SName" : "Ava", "Degree" : "BCA", "Sem" : 6, "CGPA" : 9.3 }
```

2.Employee Database.

Create an employee database with the

fields: {eid,ename,dept,desig,salary,yoj,address{ dno,street,locality,city }}

```
> show collections
```

```
employee
```

```
> db.employee.find().pretty()
```

```
{
  "_id" : ObjectId("628bb6a6e0fb0884062d19a6"),
  "eid" : 101,
  "ename" : "Daniel",
  "dept" : "Analytics",
  "desig" : "developer",
  "salary" : 60000,
  "yoj" : 2000,
  "address" : [
    {
      "dno" : 11,
      "street" : "A11",
      "Locality" : "Technopark",
      "city" : "Tvm"
    }
  ],
  "age" : 26
}
{
  "_id" : ObjectId("628bb6a6e0fb0884062d19a7"),
  "eid" : 102,
  "ename" : "Rahul",
```

```
"dept" : "Product",
"desig" : "developer",
"salary" : 75000,
"yoj" : 2015,
"address" : [
    {
        "dno" : 122,
        "street" : "Kakkanad",
        "Locality" : "Infopark",
        "city" : "Kochi"
    }
],
"age" : 26
}
{
    "_id" : ObjectId("628bb6a6e0fb0884062d19a8"),
    "eid" : 103,
    "ename" : "Sara",
    "dept" : "HR",
    "desig" : "recruit",
    "salary" : 60000,
    "yoj" : 2011,
    "address" : [
        {
            "dno" : 122,
            "street" : "Cherthala",
            "Locality" : "Infopark",
            "city" : "Kochi"
        }
    ],
```



```
"age" : 26
}
{
  "_id" : ObjectId("628bb6a6e0fb0884062d19a9"),
  "eid" : 104,
  "ename" : "Yamini",
  "dept" : "Testing",
  "desig" : "Tester",
  "salary" : 35000,
  "yoj" : 2017,
  "address" : [
    {
      "dno" : 122,
      "street" : "Kakkanad",
      "Locality" : "Infopark",
      "city" : "Kochi"
    }
  ],
  "age" : 26
}
{
  "_id" : ObjectId("628bb8f553164b078699cc7b"),
  "eid" : 105,
  "ename" : "Sushin",
  "dept" : "R&D",
  "desig" : "Manager",
  "salary" : 66000,
  "yoj" : 2021,
  "address" : [
    {
```

```

        "dno" : 122,
        "street" : "Cherthala",
        "Locality" : "Infopark",
        "city" : "Kochi"
    }
],
    "age" : 26
}
{
    "_id" : ObjectId("628bb8f553164b078699cc7c"),
    "eid" : 106,
    "ename" : "Tibin",
    "dept" : "Logistics",
    "design" : "SeniorHead",
    "salary" : 90000,
    "yoj" : 2022,
    "address" : [
        {
            "dno" : 11,
            "street" : "A11",
            "Locality" : "Technopark",
            "city" : "Tvm"
        }
    ],
    "age" : 26
}

```

1.Display all the employees with salary in the range(50000,75000).

```
> db.employee.find({salary:{$lt:75000,$gt:50000}})
```

```
{ "_id" : ObjectId("628bb6a6e0fb0884062d19a6"), "eid" : 101, "ename" : "Daniel", "dept" :
"Analytics", "desig" : "developer", "salary" : 60000, "yoj" : 2000, "address" : [ { "dno" : 11,
"street" : "A11", "Locality" : "Technopark", "city" : "Tvm" } ], "age" : 26 }

{ "_id" : ObjectId("628bb6a6e0fb0884062d19a8"), "eid" : 103, "ename" : "Sara", "dept" :
"HR", "desig" : "recruit", "salary" : 60000, "yoj" : 2011, "address" : [ { "dno" : 122, "street" :
"Cherthala", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26 }

{ "_id" : ObjectId("628bb8f553164b078699cc7b"), "eid" : 105, "ename" : "Sushin", "dept" :
"R&D", "desig" : "Manager", "salary" : 66000, "yoj" : 2021, "address" : [ { "dno" : 122,
"street" : "Cherthala", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26 }
```

2.Display all the employees with design developer

```
> db.employee.find({desig:"developer"},{ename:1,_id:0})

{ "ename" : "Daniel" }

{ "ename" : "Rahul" }
```

3.Display the salary of Rahul

```
> db.employee.find({ename:"Rahul"},{salary:1,_id:0})

{ "salary" : 75000 }
```

4.Display the city of employee.

```
> db.employee.find({},{address:{city:1},_id:0,ename:1})

{ "ename" : "Daniel", "address" : [ { "city" : "Tvm" } ] }

{ "ename" : "Rahul", "address" : [ { "city" : "Kochi" } ] }

{ "ename" : "Sara", "address" : [ { "city" : "Kochi" } ] }

{ "ename" : "Yamini", "address" : [ { "city" : "Kochi" } ] }

{ "ename" : "Sushin", "address" : [ { "city" : "Kochi" } ] }

{ "ename" : "Tibin", "address" : [ { "city" : "Tvm" } ] }
```

5.Update the salary of developers by 5000.

```
> db.employee.find({desig:"developer"},{salary:1,_id:0,ename:1})
```

```
{ "ename" : "Daniel", "salary" : 60000 }
{ "ename" : "Rahul", "salary" : 75000 }
> db.employee.updateMany({desig:"developer"},{$inc:{salary:5000}})
{ "acknowledged" : true, "matchedCount" : 2, "modifiedCount" : 2 }
> db.employee.find({ desig:"developer"},{ salary:1,_id:0,ename:1 })
{ "ename" : "Daniel", "salary" : 65000 }
{ "ename" : "Rahul", "salary" : 80000 }
```

6.Add field age to employee.

```
Db.employee.updateMany({},{$set:{age:26}})
{ "age" : 26 }
```

7.Remove yoj from Rahul

```
> db.employee.updateOne({ename:"Rahul"},{$unset:{yoj:""}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.employee.find({ename:"Rahul"})
{ "_id" : ObjectId("628bb6a6e0fb0884062d19a7"), "eid" : 102, "ename" : "Rahul", "dept" :
"Product", "desig" : "developer", "salary" : 80000, "address" : [ { "dno" : 122, "street" :
"Kakkanad", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26 }
>
```

8.Add an array field project to Rahul..

```
> db.employee.find({ename:"Rahul"})
{ "_id" : ObjectId("628bb6a6e0fb0884062d19a7"), "eid" : 102, "ename" : "Rahul", "dept" :
"Product", "desig" : "developer", "salary" : 80000, "address" : [ { "dno" : 122, "street" :
"Kakkanad", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26, "project" : [ "" ] }
>
```

9.Add p2 and p3 project to Rahul

```
> db.employee.find({ename:"Rahul"})
```

```
{ "_id" : ObjectId("628bb6a6e0fb0884062d19a7"), "eid" : 102, "ename" : "Rahul", "dept" :
"Product", "desig" : "developer", "salary" : 80000, "address" : [ { "dno" : 122, "street" :
"Kakkanad", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26, "project" : [ "", "p2",
"p3" ] }
```

10.Remove p3 from Rahul.

```
db.employee.updateOne({ename:"Rahul"},{$pull:{project:"p3"}})
```

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

```
> db.employee.find({ename:"Rahul"})
```

```
{ "_id" : ObjectId("628bb6a6e0fb0884062d19a7"), "eid" : 102, "ename" : "Rahul", "dept" :
"Product", "desig" : "developer", "salary" : 80000, "address" : [ { "dno" : 122, "street" :
"Kakkanad", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26, "project" : [ "", "p2" ] }
```

11.Add a new embedded object “contacts” with “email” and “phone” as array objects to Rahul.

```
>
```

```
db.employee.update({ename:"Rahul"},{$push:{contacts:{phone:"3214120311",email:"rahulkrishna342@gmail.com"}}})
```

```
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

```
> db.employee.find({ename:"Rahul"})
```

```
{ "_id" : ObjectId("628bb6a6e0fb0884062d19a7"), "eid" : 102, "ename" : "Rahul", "dept" :
"Product", "desig" : "developer", "salary" : 80000, "address" : [ { "dno" : 122, "street" :
"Kakkanad", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26, "project" : [ "", "p2" ],
"contacts" : [ { "phone" : "3214120311", "email" : "rahulkrishna342@gmail.com" } ] }
```

12.Add two phone numbers to Rahul.

```
>
```

```
db.employee.update({ename:"Rahul"},{$addToSet:{'contact.phone':[9132412341,9812123421]}})
```

```
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

```
> db.employee.find({ename:"Rahul"})
```

```
{ "_id" : ObjectId("628bb6a6e0fb0884062d19a7"), "eid" : 102, "ename" : "Rahul", "dept" :  
"Product", "desig" : "developer", "salary" : 80000, "address" : [ { "dno" : 122, "street" :  
"Kakkanad", "Locality" : "Infopark", "city" : "Kochi" } ], "age" : 26, "project" : [ "", "p2" ],  
"contacts" : [ { "phone" : "3214120311", "email" : "rahulkrishna342@gmail.com" } ],  
"contact" : { "phone" : [ [ 9132412341, 9812123421 ] ] } }
```