PROGRAM -1

AIM: To build a sample collections/documents to perform query operations.

Create database college and collection students & insert student details into it.

CODE:

```
use college
switched to db college

> db.createCollection('student');
{ "ok" : 1 }

> db.student.insert({SRN:'100',sname:'jeff',degree:'bsc',sem:'1',cgpa:'8.0'});
WriteResult({ "nInserted" : 1 })
> db.student.insert({SRN:'101',sname:'jerr',degree:'bsc',sem:'1',cgpa:'7.9'});
WriteResult({ "nInserted" : 1 })
> db.collection.remove({SRN:'100',sname:'jeff',degree:'bsc',sem:'1',cgpa:'8.0'});
WriteResult({ "nRemoved" : 0 })
> db.student.insert({SRN:'102',sname:'RAHUL',degree:'bca',sem:'1',cgpa:'7.0'});
WriteResult({ "nInserted" : 1 })
> db.student.insert({SRN:'103',sname:'catherine',degree:'bca',sem:'2',cgpa:'6.9'});
WriteResult({ "nInserted" : 1 })
> db.student.insert({SRN:'104',sname:'kevin',degree:'bca',sem:'3',cgpa:'6.5'});
WriteResult({ "nInserted" : 1 })
> db.student.insert({SRN:'105',sname:'jual',degree:'btech',sem:'4',cgpa:'6.4'});
WriteResult({ "nInserted" : 1 })
> db.student.insert({SRN:'106',sname:'jeni',degree:'bca',sem:'5',cgpa:'6.7'});
WriteResult({ "nInserted" : 1 })
> db.student.insert({SRN:'107',sname:'miya',degree:'bsc',sem:'6',cgpa:'7.6'});
WriteResult({ "nInserted" : 1 })
```

> db.student.insert({SRN:'108',sname:'bincy',degree:'bsc',sem:'6',cgpa:'6.2'});

WriteResult({ "nInserted" : 1 })

1)>db.students.find()

{ "_id" : ObjectId("62789f90efe9de5c891c1993"), "SRN" : "100", "sname" : "jeff", "degree" : "bsc", "sem" : "1", "cgpa" : "8.0" }

{ "_id" : ObjectId("6278a012efe9de5c891c1994"), "SRN" : "101", "sname" : "jerr", "degree" : "bsc", "sem" : "1", "cgpa" : "7.9" }

{ "_id" : ObjectId("6278a2feefe9de5c891c1995"), "SRN" : "102", "sname" : "RAHUL", "degree" : "bca", "sem" : "1", "cgpa" : "7.0" }

{ "_id" : ObjectId("6278a330efe9de5c891c1996"), "SRN" : "103", "sname" : "catherine", "degree" : "bca", "sem" : "2", "cgpa" : "6.9" }

{ "_id" : ObjectId("6278a364efe9de5c891c1997"), "SRN" : "104", "sname" : "kevin", "degree" : "bca", "sem" : "3", "cgpa" : "6.5" }

{ "_id" : ObjectId("6278a3b1efe9de5c891c1998"), "SRN" : "105", "sname" : "jual", "degree" : "btech", "sem" : "4", "cgpa" : "6.4" }

{ "_id" : ObjectId("6278a3e6efe9de5c891c1999"), "SRN" : "106", "sname" : "jeni", "degree" : "bca", "sem" : "5", "cgpa" : "6.7" }

{ "_id" : ObjectId("6278a42fefe9de5c891c199a"), "SRN" : "107", "sname" : "miya", "degree" : "bsc", "sem" : "6", "cgpa" : "7.6" }

{ "_id" : ObjectId("6278a45defe9de5c891c199b"), "SRN" : "108", "sname" : "bincy", "degree" : "bsc", "sem" : "6", "cgpa" : "6.2" }

PROGRAM -2

AIM: Create a Database 'Student' with the fields SRN, SName, degree, semester, CGPA and create a collection 'Students'.

1) Display all the documents.
2) Display all the students in BCA.
3) Display all the students in ascending order
4) Display all the first five students.
5) Display students 5,6,7
6) Display the degree of student 'Anu'.
7) Display student details of 5,6,7 in descending order of percentage.
8) Display the number of students in BCA
9) Display all the degrees without "_id"
10) Display the distinct degrees.
11) Display all the BCA students with CGPA>6 but less than 7.1
12) Display all the BCA students and in 2nd sem.

CODE:

use student

switched to db student

```
> db.createCollection('stud1');
{ "ok" : 1 }


> db.stud1.insert({SRN:'100',sname:'jeff',degree:'bsc',sem:'1',cgpa:'8.0'});

WriteResult({ "nInserted" : 1 })

> db.stud1.insert({SRN:'101',sname:'jerr',degree:'bsc',sem:'1',cgpa:'7.9'});

WriteResult({ "nInserted" : 1 })

> db.collection.remove({SRN:'100',sname:'jeff',degree:'bsc',sem:'1',cgpa:'8.0'});

WriteResult({ "nRemoved" : 0 })

> db.stud1.insert({SRN:'102',sname:'RAHUL',degree:'bca',sem:'1',cgpa:'7.0'});

WriteResult({ "nInserted" : 1 })

> db.stud1.insert({SRN:'103',sname:'catherine',degree:'bca',sem:'2',cgpa:'6.9'});

WriteResult({ "nInserted" : 1 })

> db.stud1.insert({SRN:'104',sname:'kevin',degree:'bca',sem:'3',cgpa:'6.5'});
```

WriteResult({ "nInserted" : 1 })

> db.stud1.insert({SRN:'105',sname:'jual',degree:'btech',sem:'4',cgpa:'6.4'});

WriteResult({ "nInserted" : 1 })

> db.stud1.insert({SRN:'106',sname:'jeni',degree:'bca',sem:'5',cgpa:'6.7'});

WriteResult({ "nInserted" : 1 })

> db.stud1.insert({SRN:'107',sname:'miya',degree:'bsc',sem:'6',cgpa:'7.6'});

WriteResult({ "nInserted" : 1 })

> db.stud1.insert({SRN:'108',sname:'bincy',degree:'bsc',sem:'6',cgpa:'6.2'});

WriteResult({ "nInserted" : 1 })

1)db.stud1.find().pretty()

{
    "_id" : ObjectId("62789f90efe9de5c891c1993"),
    "SRN" : "100",
    "sname" : "jeff",
    "degree" : "bsc",
    "sem" : "1",
    "cgpa" : "8.0"
}
{
    "_id" : ObjectId("6278a012efe9de5c891c1994"),
    "SRN" : "101",
    "sname" : "jerr",
    "degree" : "bsc",
    "sem" : "1",
    "cgpa" : "7.9"
}
{
    "_id" : ObjectId("6278a2feefe9de5c891c1995"),
    "SRN" : "102",
    "sname" : "RAHUL",

```
        "degree" : "bca",

        "sem" : "1",

        "cgpa" : "7.0"

}

{

        "_id" : ObjectId("6278a330efe9de5c891c1996"),

        "SRN" : "103",

        "sname" : "catherine",

        "degree" : "bca",

        "sem" : "2",

        "cgpa" : "6.9"

}

{

        "_id" : ObjectId("6278a364efe9de5c891c1997"),

        "SRN" : "104",

        "sname" : "kevin",

        "degree" : "bca",

        "sem" : "3",

        "cgpa" : "6.5"

}

{

        "_id" : ObjectId("6278a3b1efe9de5c891c1998"),

        "SRN" : "105",

        "sname" : "jual",

        "degree" : "btech",

        "sem" : "4",

        "cgpa" : "6.4"

}

{

        "_id" : ObjectId("6278a3e6efe9de5c891c1999"),
```

```
        "SRN" : "106",

        "sname" : "jeni",

        "degree" : "bca",

        "sem" : "5",

        "cgpa" : "6.7"

}

{

        "_id" : ObjectId("6278a42fefe9de5c891c199a"),

        "SRN" : "107",

        "sname" : "miya",

        "degree" : "bsc",

        "sem" : "6",

        "cgpa" : "7.6"

}

{

        "_id" : ObjectId("6278a45defe9de5c891c199b"),

        "SRN" : "108",

        "sname" : "bincy",

        "degree" : "bsc",

        "sem" : "6",

        "cgpa" : "6.2"

}

{

        "_id" : ObjectId("6278b14eefe9de5c891c199c"),

        "SRN" : "109",

        "sname" : "ancy",

        "degree" : "bca",

        "sem" : "6",

        "cgpa" : "6.5"

}
```

>

2) db.stud1.find({Degree:'BCA'})

{ "_id" : ObjectId("6278a2feefe9de5c891c1995"), "SRN" : "102", "sname" : "RAHUL", "degree" : "bca", "sem" : "1", "cgpa" : "7.0" }

{ "_id" : ObjectId("6278a330efe9de5c891c1996"), "SRN" : "103", "sname" : "catherine", "degree" : "bca", "sem" : "2", "cgpa" : "6.9" }

{ "_id" : ObjectId("6278a364efe9de5c891c1997"), "SRN" : "104", "sname" : "kevin", "degree" : "bca", "sem" : "3", "cgpa" : "6.5" }

{ "_id" : ObjectId("6278a3e6efe9de5c891c1999"), "SRN" : "106", "sname" : "jeni", "degree" : "bca", "sem" : "5", "cgpa" : "6.7" }

3) db.stud1.find().sort({sname:1});

{ "_id" : ObjectId("6278a2feefe9de5c891c1995"), "SRN" : "102", "sname" : "RAHUL", "degree" : "bca", "sem" : "1", "cgpa" : "7.0" }

{ "_id" : ObjectId("6278a45defe9de5c891c199b"), "SRN" : "108", "sname" : "bincy", "degree" : "bsc", "sem" : "6", "cgpa" : "6.2" }

{ "_id" : ObjectId("6278a330efe9de5c891c1996"), "SRN" : "103", "sname" : "catherine", "degree" : "bca", "sem" : "2", "cgpa" : "6.9" }

{ "_id" : ObjectId("62789f90efe9de5c891c1993"), "SRN" : "100", "sname" : "jeff", "degree" : "bsc", "sem" : "1", "cgpa" : "8.0" }

{ "_id" : ObjectId("6278a3e6efe9de5c891c1999"), "SRN" : "106", "sname" : "jeni", "degree" : "bca", "sem" : "5", "cgpa" : "6.7" }

{ "_id" : ObjectId("6278a012efe9de5c891c1994"), "SRN" : "101", "sname" : "jerr", "degree" : "bsc", "sem" : "1", "cgpa" : "7.9" }

{ "_id" : ObjectId("6278a3b1efe9de5c891c1998"), "SRN" : "105", "sname" : "jual", "degree" : "btech", "sem" : "4", "cgpa" : "6.4" }

{ "_id" : ObjectId("6278a364efe9de5c891c1997"), "SRN" : "104", "sname" : "kevin", "degree" : "bca", "sem" : "3", "cgpa" : "6.5" }

{ "_id" : ObjectId("6278a42fefe9de5c891c199a"), "SRN" : "107", "sname" : "miya", "degree" : "bsc", "sem" : "6", "cgpa" : "7.6" }

4) db.stud1.find().limit(5);

{ "_id" : ObjectId("62789f90efe9de5c891c1993"), "SRN" : "100", "sname" : "jeff", "degree" : "bsc", "sem" : "1", "cgpa" : "8.0" }

{ "_id" : ObjectId("6278a012efe9de5c891c1994"), "SRN" : "101", "sname" : "jerr", "degree" : "bsc", "sem" : "1", "cgpa" : "7.9" }

{ "_id" : ObjectId("6278a2feefe9de5c891c1995"), "SRN" : "102", "sname" : "RAHUL", "degree" : "bca", "sem" : "1", "cgpa" : "7.0" }

{ "_id" : ObjectId("6278a330efe9de5c891c1996"), "SRN" : "103", "sname" : "catherine", "degree" : "bca", "sem" : "2", "cgpa" : "6.9" }

{ "_id" : ObjectId("6278a364efe9de5c891c1997"), "SRN" : "104", "sname" : "kevin", "degree" : "bca", "sem" : "3", "cgpa" : "6.5" }

5) db.stud1.find().skip(4).limit(3);

{ "_id" : ObjectId("6278a364efe9de5c891c1997"), "SRN" : "104", "sname" : "kevin", "degree" : "bca", "sem" : "3", "cgpa" : "6.5" }

{ "_id" : ObjectId("6278a3b1efe9de5c891c1998"), "SRN" : "105", "sname" : "jual", "degree" : "btech", "sem" : "4", "cgpa" : "6.4" }

{ "_id" : ObjectId("6278a3e6efe9de5c891c1999"), "SRN" : "106", "sname" : "jeni", "degree" : "bca", "sem" : "5", "cgpa" : "6.7" }

6) db.stud1.find({sname:'RAHUL'},{sname:1,degree:1});

{ "_id" : ObjectId("6278a2feefe9de5c891c1995"), "sname" : "RAHUL", "degree" : "bca" }

7) db.stud1.find().sort({cgpa:-1}).skip(4).limit(3);

{ "_id" : ObjectId("6278a330efe9de5c891c1996"), "SRN" : "103", "sname" : "catherine", "degree" : "bca", "sem" : "2", "cgpa" : "6.9" }

{ "_id" : ObjectId("6278a3e6efe9de5c891c1999"), "SRN" : "106", "sname" : "jeni", "degree" : "bca", "sem" : "5", "cgpa" : "6.7" }

{ "_id" : ObjectId("6278a364efe9de5c891c1997"), "SRN" : "104", "sname" : "kevin", "degree" : "bca", "sem" : "3", "cgpa" : "6.5" }

8)
db.stud1.find({degree:'bca'}).count();
4

9) db.stud1.find({},{degree:1,_id:0});

{ "degree" : "bsc" }

{ "degree" : "bsc" }

{ "degree" : "bca" }

{ "degree" : "bca" }

{ "degree" : "bca" }

{ "degree" : "btech" }

{ "degree" : "bca" }

{ "degree" : "bsc" }

{ "degree" : "bsc" }

{ "degree" : "bca" }

10) db.stud1.distinct("degree");

["bca", "bsc", "btech"]

11) db.stud1.find({degree:'bca',sem:'6'},{sname:1});

{ "_id" : ObjectId("6278b14eefe9de5c891c199c"), "sname" : "ancy" }

12) db.stud1.find({$and:[{degree:"bca"},{cgpa:{$gt:"6"}},{cgpa:{$lt:"7.1"}}]})

{ "_id" : ObjectId("6278a2feefe9de5c891c1995"), "SRN" : "102", "sname" : "RAHUL",
"degree" : "bca", "sem" : "1", "cgpa" : "7.0" }

{ "_id" : ObjectId("6278a330efe9de5c891c1996"), "SRN" : "103", "sname" : "catherine",
"degree" : "bca", "sem" : "2", "cgpa" : "6.9" }

{ "_id" : ObjectId("6278a364efe9de5c891c1997"), "SRN" : "104", "sname" : "kevin",
"degree" : "bca", "sem" : "3", "cgpa" : "6.5" }

{ "_id" : ObjectId("6278a3e6efe9de5c891c1999"), "SRN" : "106", "sname" : "jeni", "degree"
: "bca", "sem" : "5", "cgpa" : "6.7" }

{ "_id" : ObjectId("6278b14eefe9de5c891c199c"), "SRN" : "109", "sname" : "ancy",
"degree" : "bca", "sem" : "6", "cgpa" : "6.5" }

>

PROGRAM-3

AIM:Create an employee database with the fields: {eid, ename, dept, desig, salary, yoj, address {dno,street,locality,city}}

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

2) Display all the employees with design developer

3) Display the salary of Rahul

4) Display the city of employee.

5) Update the salary of developers by 5000.

6) Add field age to employee.

7) Remove yoj from Rahul

8) Add an array field project to Rahul..

9) Add p2 and p3 project to Rahul

10) Remove p3 from Rahul.

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

CODE:

> use emp

> db.emp.createCollection("employee")

>db.emp.insert({eid:"101",ename:"manoj",dept:"hr",desig:"developer",salary:"60000",yoj:"2020",address:[{"street":"karikode","locality":"karikode","city":"kollam"}]});

>db.emp.insert({eid:"102",ename:"jeff",dept:"hr",desig:"designer",salary:"65000",yoj:"2012",address:[{"street":"tvm","locality":"pattam","city":"tvm"}]});

>db.emp.insert({eid:"103",ename:"sree",dept:"manager",desig:"developer",salary:"15000",yoj:"2021",address:[{"street":"kochi","locality":"kochi","city":"ernakulam"}]});

>db.emp.insert({eid:"104",ename:"rahul",dept:"manager",desig:"designer",salary:"9000",yoj:"2012",address:[{"street":"karikode","locality":"karikode","city":"kollam"}]});

>db.emp.insert({eid:"105",ename:"abi",dept:"manager",desig:"developer",salary:"95000",yoj:"2000",address:[{"street":"tvm","locality":"thambanoor","city":"tvm"}]});

>db.emp.insert({eid:"107",ename:"alan",dept:"clerk",desig:"hod",salary:"65000",yoj:"2000",address:[{"street":"uman","locality":"vilang","city":"kzkd"}]});

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

```
> db.emp.find({salary:{$lt:75000,$gt:50000}})
{ "_id" : ObjectId("62821fe7817d2ed07de60a5f"), "eid" : "107", "ename" : "alan", "dept" : "clerk", "desig" : "hod", "salary" : 65000, "yoj" : "2000", "address" : [ "134", "uman", "vilang", "kzkde", 10 ], "project" : [ 10 ] }
>
```

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

```
> db.emp.find({desig:"developer"},{ename:1,_id:0})
{ "ename" : "manoj" }
{ "ename" : "sree" }
{ "ename" : "abi" }
>
```

3) db.employee.find({ename:"rahul"},{salary:1,_id:0})

```
>  db.emp.find({ename:"rahul"},{salary:1,_id:0})
{ "salary" : "9000" }
>
```

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

```
db.emp.find({},{address:{city:1},_id:0,ename:1})
"ename" : "manoj", "address" : [ { "city" : "kollam" } ] }
"ename" : "stefi", "address" : [ { "city" : "tvm" } ] }
"ename" : "sree", "address" : [ { "city" : "ernakulam" } ] }
"ename" : "rahul", "address" : [ { "city" : "kollam" } ] }
"ename" : "abi", "address" : [ { "city" : "tvm" } ] }
"ename" : "anupama", "address" : [ { "city" : "tvm" } ] }
"ename" : "alan", "address" : [ { "city" : "kannur" } ] }
"ename" : "alan", "address" : [ { "city" : "kannur" } ] }
```

5) db.employee.updateMany({desig:"developer"},{$inc:{salary:5000}})

6) db.employee.updateMany({},{$set:{age:26}})

```
> db.emp.updateMany({},{$set:{age:26}})
{ "acknowledged" : true, "matchedCount" : 5, "modifiedCount" : 5 }
> db.emp.find()
{ "_id" : ObjectId("62a210c69893a89f84c2780f"), "eid" : "101", "ename" : "manoj", "dept" : "hr", "desig" : "developer", "salary" : "60000", "yoj" : "2020", "address" : [ { "street" : "karikode", "locality" : "ka
rikode", "city" : "kollam" } ], "age" : 26 }
{ "_id" : ObjectId("62a210f79893a89f84c27810"), "eid" : "102", "ename" : "stefi", "dept" : "hr", "desig" : "designer", "salary" : "65000", "yoj" : "2012", "address" : [ { "street" : "tvm", "locality" : "pattam",
"city" : "tvm" } ], "age" : 26 }
{ "_id" : ObjectId("62a211289893a89f84c27811"), "eid" : "103", "ename" : "sree", "dept" : "manager", "desig" : "developer", "salary" : "15000", "yoj" : "2021", "address" : [ { "street" : "kochi", "locality" : "k
ochi", "city" : "ernakulam" } ], "age" : 26 }
{ "_id" : ObjectId("62a211779893a89f84c27812"), "eid" : "104", "ename" : "rahul", "dept" : "manager", "desig" : "designer", "salary" : "9000", "yoj" : "2012", "address" : [ { "street" : "karikode", "locality" :
"karikode", "city" : "kollam" } ], "age" : 26 }
{ "_id" : ObjectId("62a211b79893a89f84c27813"), "eid" : "105", "ename" : "abi", "dept" : "manager", "desig" : "developer", "salary" : "95000", "yoj" : "2000", "address" : [ { "street" : "tvm", "locality" : "tham
banoor", "city" : "tvm" } ], "age" : 26 }
```

7) db.employee.updateOne({ename:"rahul"},{$unset:{yoj:""}})

```
> db.emp.updateOne({ename:"rahul"},{$unset:{yoj:""}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.emp.find({ename:"rahul"})
{ "_id" : ObjectId("62a211779893a89f84c27812"), "eid" : "104", "ename" : "rahul", "dept" : "manager", "desig" : "designer", "salary" : "9000", "address" : [ { "street" : "karikode", "locality" : "karikode", "cit
y" : "kollam" } ], "age" : 26 }
>
```

8) db.employee.updateMany({"ename":"rahul"},{$push:{"project":"p1"}})

```
> db.emp.updateMany({"ename":"rahul"},{$push:{"project":"p1"}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
```

9)db.employee.updateMany({ename:"rahul"},{$addToSet:{"project":["p2","p3"]}})

```
db.emp.updateMany({ename:"rahul"},{$addToSet:{"project":["p2","p3"]}})
"acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
```

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

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

```
> db.emp.update({ename:"rahul"},{$push:{contacts:{phone:"6658478541",email:"rahul42@gmail.com"}}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.emp.find({'ename':'rahul'})
{ "_id" : ObjectId("62a211779893a89f84c27812"), "eid" : "104", "ename" : "rahul", "dept" : "manager", "desig" : "designer", "salary" : "9000", "addres
y" : "kollam" } ], "age" : 26, "project" : [ "p1", [ "p2", "p3" ] ], "contacts" : [ { "phone" : "6658478541", "email" : "rahul42@gmail.com" } ] }
>
```

PROGRAM -4

AIM: Create a database named college and then create a collection named students. Insert some values into it. Write a MongoDB Query to:

1) Display details of students who have their name starting with the   letter 'C' using $regex operator
2) Display details of students who have their name ending with the   letter 'r' using $regex operator
3) Display details of students who are having 'CS' as their department using $regex operator
4) Remove details of student who are having 'EC' as their department

CODE:

1) db.student.find({SName:{$regex:"^c"}})

2) db.student.find({SName:{$regex:"r$"}})

3) db.student.find({Dept : {$regex : "cs"}})

4) db.student.remove({Dept : {$regex : "ec"}})

OUTPUT:

```
> db.student.find({SName:{$regex:"^c"}})
{ "_id" : ObjectId("62a5a4048b183deba5f51e69"), "SRN" : 102, "SName" : "catherin", "Dept" : "cs", "sem" : 3, "CGPA" : 8 }
{ "_id" : ObjectId("62a5a40e8b183deba5f51e6a"), "SRN" : 103, "SName" : "camil", "Dept" : "ec", "sem" : 3, "CGPA" : 9 }
> db.student.find({SName:{$regex:"r$"}})
{ "_id" : ObjectId("62a5a4198b183deba5f51e6b"), "SRN" : 104, "SName" : "amar", "Dept" : "cs", "sem" : 3, "CGPA" : 9 }
{ "_id" : ObjectId("62a5a4218b183deba5f51e6c"), "SRN" : 105, "SName" : "lavar", "Dept" : "ec", "sem" : 4, "CGPA" : 5 }
> db.student.find({Dept : {$regex : "cs"}})
{ "_id" : ObjectId("62a5a4048b183deba5f51e69"), "SRN" : 102, "SName" : "catherin", "Dept" : "cs", "sem" : 3, "CGPA" : 8 }
{ "_id" : ObjectId("62a5a4198b183deba5f51e6b"), "SRN" : 104, "SName" : "amar", "Dept" : "cs", "sem" : 3, "CGPA" : 9 }
> db.student.remove({Dept : {$regex : "ec"}})
WriteResult({ "nRemoved" : 2 })
>
```

PROGRAM -5

AIM: Create database 'candidate' and collection 'details'.

1)Query customer who are either male or younger than 25?

2) Calculate total purchase amount for males and females using aggregate method

3) Select customers who are older than 25 and calculate the average purchase amount for males and females

4)sort the data based on average amount.

CODE:

```
> use candidate
> db.createCollection("details")
>db.details.insert({"name":"soni","age":21,"gender":"female","amount":7000});
> db.details.insert({"name":"san","age":22,"gender":"male","amount":6000});
>db.details.insert({"name":"anu","age":42,"gender":"female","amount":20000})>
db.details.insert({"name":"sree","age":32,"gender":"male","amount":40000});
>db.details.insert({"name":"anam","age":22,"gender":"female","amount":200);
```

1) db.details.find({$or:[{'gender':'male'},{'age':{$lt:25}}]})


```
> db.details.find({$or:[{"gender":"male"},{"age":{$lt:25}}]})
{ "_id" : ObjectId("628b40110762967f2ffe2cc5"), "name" : "stef", "age" : 21, "gender" : "female", "amount" : 70000 }
{ "_id" : ObjectId("628b40230762967f2ffe2cc6"), "name" : "san", "age" : 22, "gender" : "male", "amount" : 6000 }
{ "_id" : ObjectId("628b40510762967f2ffe2cc8"), "name" : "sree", "age" : 32, "gender" : "male", "amount" : 40000 }
{ "_id" : ObjectId("628b40710762967f2ffe2cc9"), "name" : "alok", "age" : 22, "gender" : "male", "amount" : 1000 }
{ "_id" : ObjectId("628b40e90762967f2ffe2cca"), "name" : "anam", "age" : 20, "gender" : "female", "amount" : 2000 }
```

2) db.details.aggregate([{$group:{_id:"$gender",'total amount':{$sum:'$amount'}}}])


```
> db.details.aggregate([{$group:{_id:"$gender",'total amount':{$sum:'$amount'}}}])
{ "_id" : "male", "total amount" : 47000 }
{ "_id" : "female", "total amount" : 92000 }
```

3) db.details.aggregate([{$match:{"age":{$gt:25}}},{$group:{_id:"$gender",'total amount':{$avg:'$amount'}}}])


```
> db.details.aggregate([{$match:{"age":{$gt:25}}},{$group:{_id:"$gender",'total amount':{$avg:'$amount'}}}]);
{ "_id" : "female", "total amount" : 20000 }
{ "_id" : "male", "total amount" : 40000 }
```

4)db.details.aggregate([{$match:{"age":{$gt:25}}},{$group:{_id:"$gender",'total amount':{$avg:'$amount'}}},{$sort:{avg:1}}])

```
> db.details.aggregate([{$match:{"age":{$gt:25}}},{$group:{_id:"$gender",'total amount':{$avg:'$amount'}}},{$sort:{avg:1}}])
{ "_id" : "female", "total amount" : 20000 }
{ "_id" : "male", "total amount" : 40000 }
>
```

PROGRAM -6

AIM: Create a database named college and then create a collection named studlist. Insert some values into it .

 Write a MongoDB Query to:

1. Display name (both fname and lname) and mark of all female students in MCA department.

2. Display the details of student who secured highest mark in the course MCA

3. Display all male students who secured A+ grade.

4. Display the names of the top three students in Mechanical department.

5. Display the details of female students [fname,lname,grade,mark,contact] who achieved a mark more than 90.

6. Display the details of students who secured mark, more than 80 but less than 90.

7. Display the details of students whose name starts with 'V'

 8. Display all students from Kollam

 9. Display all students who does not belong to neither Kollam nor Thiruvananthapuram

10. Display all female students who belong to either Kollam or Thiruvananthapuram

CODE:

```
db.studlist3.insert({'fname':'catherine','lname':'m','depart':'mca','grade':'A','gender':'female','contact':'99878967','mark':'84','location':'ekm'});

WriteResult({ "nInserted" : 1 })

>
db.studlist3.insert({'fname':'tom','lname':'A','depart':'civil','grade':'B','gender':'male','contact':'997778967','mark':'67','location':'ekm'});

WriteResult({ "nInserted" : 1 })

>
db.studlist3.insert({'fname':'tessy','lname':'A','depart':'mechanical','grade':'A','gender':'female','contact':'99778967','mark':'83','location':'kollam'});

WriteResult({ "nInserted" : 1 })

>
db.studlist3.insert({'fname':'jeri','lname':'J','depart':'electrical','grade':'B+','gender':'male','contact':'99775467','mark':'75','location':'trivandrum'});

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

>
db.studlist3.insert({'fname':'vismaya','lname':'sebastian','depart':'mechanical','grade':'A','gende
r':'female','contact':'9875467','mark':'90','location':'kottayam'});

WriteResult({ "nInserted" : 1 })

1. > db.studlist.find({'depart':'mca','gender':'female'},{'fname':1,'lname':1,'mark':1});

{ "_id" : ObjectId("6294d34a02ae8e7edd958641"), "fname" : "catherine", "lname" : "m",
"mark" : "84" }

{ "_id" : ObjectId("62960c30500c4e4ad9c061a8"), "fname" : "catherine", "lname" : "m",
"mark" : "84" }

2. > db.studlist.find().sort({"mark":-1}).limit(1)

3.
>db.studlist.find({gender:'male',grade:'A+'},{fname:1,lname:1,gender:1,dept:1,loc:1,grade:1,
mark:1})

4. > db.studlist3.find({"depart":"mechanical"}).sort({"mark":-1}).limit(3).pretty()

{
    "_id" : ObjectId("62961485500c4e4ad9c061af"),

    "fname" : "soja",

    "lname" : "sebastian",

    "depart" : "mechanical",

    "grade" : "66",

    "gender" : "female",

    "contact" : "9875467",

    "mark" : "B",

    "location" : "trivandrum"

}

{
    "_id" : ObjectId("62960cca500c4e4ad9c061ad"),

    "fname" : "vismaya",

    "lname" : "sebastian",

    "depart" : "mechanical",

"grade" : "A",

        "gender" : "female",

        "contact" : "9875467",

        "mark" : "90",

        "location" : "kottayam"

}

{

        "_id" : ObjectId("62960c96500c4e4ad9c061ab"),

        "fname" : "tessy",

        "lname" : "A",

        "depart" : "mechanical",

        "grade" : "A",

        "gender" : "female",

        "contact" : "99778967",

        "mark" : "83",

        "location" : "kollam"

}
5.
db.studlist3.find({"mark":{$gt:90},"gender":"female"},{"fname":1,"lname":1,"grade":1,"mark":1,"contact":1}).pretty()

{

        "_id" : ObjectId("62960c96500c4e4ad9c061ab"),

        "fname" : "tessy",

        "lname" : "A",

        "depart" : "mechanical",

        "grade" : "A",

        "gender" : "female",

        "contact" : "99778967",

        "mark" : "83",

        "location" : "kollam"

}

6. > db.studlist3.find({$and:[{mark:{$gt:80}},{mark:{$lt:90}}]}).pretty()

{

    "_id" : ObjectId("62960c96500c4e4ad9c061ab"),

    "fname" : "tessy",

    "lname" : "A",

    "depart" : "mechanical",

    "grade" : "A",

    "gender" : "female",

    "contact" : "99778967",

    "mark" : "83",

    "location" : "kollam"

}

{

    "_id" : ObjectId("62961042500c4e4ad9c061ae"),

    "fname" : "sona",

    "lname" : "sebastian",

    "depart" : "mca",

    "grade" : "A",

    "gender" : "female",

    "contact" : "9875467",

    "mark" : "85",

    "location" : "trivandrum"

}

7. > db.studlist3.find({"fname":{$regex:"v"}},{"fname":1}).pretty()

{ "_id" : ObjectId("62960cca500c4e4ad9c061ad"), "fname" : "vismaya" }

8. db.studlist3.find({"location":"kollam"}).pretty()

{

    "_id" : ObjectId("62960b68500c4e4ad9c061a3"),

    "fname" : "jeff",

```
        "lname" : "justin",

        "depart" : "mca",

        "grade" : "A+",

        "gender" : "male",

        "contact" : "9875467",

        "mark" : "90",

        "location" : "kollam"

}

{

        "_id" : ObjectId("62960c96500c4e4ad9c061ab"),

        "fname" : "tessy",

        "lname" : "A",

        "depart" : "mechanical",

        "grade" : "A",

        "gender" : "female",

        "contact" : "99778967",

        "mark" : "83",

        "location" : "kollam"

}

{

        "_id" : ObjectId("6296168b500c4e4ad9c061b0"),

        "fname" : "anu",

        "lname" : "t",

        "depart" : "mechanical",

        "grade" : "96",

        "gender" : "female",

        "contact" : "9875467",

        "mark" : "A+",

        "location" : "kollam"

}
```

```
{
    "_id" : ObjectId("629616c8500c4e4ad9c061b1"),
    "fname" : "anu",
    "lname" : "t",
    "depart" : "mechanical",
    "grade" : "A+",
    "gender" : "female",
    "contact" : "9875467",
    "mark" : "96",
    "location" : "kollam"
}
```

9. > db.studlist3.find({$nor:[{location:"kollam"},{location:"trivandrum"}]}).pretty()

```
{
    "_id" : ObjectId("62960c77500c4e4ad9c061a9"),
    "fname" : "catherine",
    "lname" : "m",
    "depart" : "mca",
    "grade" : "A",
    "gender" : "female",
    "contact" : "99878967",
    "mark" : "84",
    "location" : "ekm"
}
{
    "_id" : ObjectId("62960c85500c4e4ad9c061aa"),
    "fname" : "tom",
    "lname" : "A",
    "depart" : "civil",
    "grade" : "B",
    "gender" : "male",
    "contact" : "997778967",
```

```
        "mark" : "67",

        "location" : "ekm"

    }

    {

        "_id" : ObjectId("62960cca500c4e4ad9c061ad"),

        "fname" : "vismaya",

        "lname" : "sebastian",

        "depart" : "mechanical",

        "grade" : "A",

        "gender" : "female",

        "contact" : "9875467",

        "mark" : "90",

        "location" : "kottayam"

    }

10. > db.studlist3.find({$or:[{location:"kollam"},{location:"trivandrum"}]}).pretty()

    {

        "_id" : ObjectId("62960b68500c4e4ad9c061a3"),

        "fname" : "jeff",

        "lname" : "justin",

        "depart" : "mca",

        "grade" : "A+",

        "gender" : "male",

        "contact" : "9875467",

        "mark" : "90",

        "location" : "kollam"

    }

    {

        "_id" : ObjectId("62960c96500c4e4ad9c061ab"),

        "fname" : "tessy",

        "lname" : "A",

        "depart" : "mechanical",
```

```
        "grade" : "A",

        "gender" : "female",

        "contact" : "99778967",

        "mark" : "83",

        "location" : "kollam"

}

{

        "_id" : ObjectId("62960ca7500c4e4ad9c061ac"),

        "fname" : "jeri",

        "lname" : "J",

        "depart" : "electrical",

        "grade" : "B+",

        "gender" : "male",

        "contact" : "99775467",

        "mark" : "75",

        "location" : "trivandrum"

}

{

        "_id" : ObjectId("62961042500c4e4ad9c061ae"),

        "fname" : "sona",

        "lname" : "sebastian",

        "depart" : "mca",

        "grade" : "A",

        "gender" : "female",

        "contact" : "9875467",

        "mark" : "85",

        "location" : "trivandrum"

}

{

        "_id" : ObjectId("62961485500c4e4ad9c061af"),
```

```
        "fname" : "soja",

        "lname" : "sebastian",

        "depart" : "mechanical",

        "grade" : "66",

        "gender" : "female",

        "contact" : "9875467",

        "mark" : "B",

        "location" : "trivandrum"

}
{

        "_id" : ObjectId("6296168b500c4e4ad9c061b0"),

        "fname" : "anu",

        "lname" : "t",

        "depart" : "mechanical",

        "grade" : "96",

        "gender" : "female",

        "contact" : "9875467",

        "mark" : "A+",

        "location" : "kollam"

}
{

        "_id" : ObjectId("629616c8500c4e4ad9c061b1"),

        "fname" : "anu",

        "lname" : "t",

        "depart" : "mechanical",

        "grade" : "A+",

        "gender" : "female",

        "contact" : "9875467",

        "mark" : "96",

        "location" : "kollam"
```

}