

LAB ASSIGNMENT 6

NOSQL

QUESTION:

Create a database named college and then create a collection named studlist. Insert some values into it [You can use the data in [test.json file].

```
> use colleges
switched to db colleges
> db.createCollection("StudList")
{ "ok" : 1 }
> db.StudList.insert({fname:"jolsna",lname:"prakash",gender:"female",place:"kozhikode",contact:9035675895,department:"MCA",mark:90,grade:"A+"})
WriteResult({ "nInserted" : 1 })
> db.StudList.insert({fname:"vyga",lname:"k",gender:"female",place:"kollam",contact:9035675845,department:"MCA",mark:87,grade:"A"})
WriteResult({ "nInserted" : 1 })
> db.StudList.insert({fname:"vishnu",lname:"rajeev",gender:"male",place:"kollam",contact:8976675845,department:"Mech",mark:98,grade:"A+"})
WriteResult({ "nInserted" : 1 })
> db.StudList.insert({fname:"soorya",lname:"p",gender:"female",place:"thiruvananthapuram",contact:8976676945,department:"Mech",mark:95,grade:"A+"})
WriteResult({ "nInserted" : 1 })
> db.StudList.insert({fname:"karthik",lname:"krishna",gender:"male",place:"thrissur",contact:9076676945,department:"MCA",mark:65,grade:"B"})
WriteResult({ "nInserted" : 1 })
> db.StudList.insert({fname:"kris",lname:"krishna",gender:"male",place:"kollam",contact:7076676945,department:"MCA",mark:98,grade:"A+"})
WriteResult({ "nInserted" : 1 })
> db.StudList.insert({fname:"swathi",lname:"krishna",gender:"female",place:"kollam",contact:7074576945,department:"Mech",mark:89,grade:"A"})
WriteResult({ "nInserted" : 1 })
> db.StudList.insert({fname:"Adhithi",lname:"roy",gender:"female",place:"kottayam",contact:7074006945,department:"Mech",mark:79,grade:"B+"})
WriteResult({ "nInserted" : 1 })
```

```
> db.StudList.find().pretty()
{
  "_id" : ObjectId("629659bf73bd207720f3f24b"),
  "fname" : "jolsna",
  "lname" : "prakash",
  "gender" : "female",
  "place" : "kzhikode",
  "contact" : 9035675895,
  "department" : "MCA",
  "mark" : 90,
  "grade" : "A+"
}
{
  "_id" : ObjectId("629659e873bd207720f3f24c"),
  "fname" : "vyga",
  "lname" : "k",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 9035675845,
  "department" : "MCA",
  "mark" : 87,
  "grade" : "A"
}
{
  "_id" : ObjectId("62965a1e73bd207720f3f24d"),
  "fname" : "vishnu",
  "lname" : "rajeev",
  "gender" : "male",
  "place" : "kollam",
  "contact" : 8976675845,
  "department" : "Mech",
  "mark" : 98,
  "grade" : "A+"
}
{
  "_id" : ObjectId("62965a6f73bd207720f3f24e"),
  "fname" : "soorya",
  "lname" : "p",
  "gender" : "female",
  "place" : "thiruvananthapuram",
  "contact" : 8976676945,
  "department" : "Mech",
  "mark" : 95,
  "grade" : "A+"
}
{
  "_id" : ObjectId("62965ab973bd207720f3f24f"),
  "fname" : "karthik",
  "lname" : "krishna",
  "gender" : "male",
  "place" : "thrissur",
  "contact" : 9076676945,
  "department" : "MCA",
  "mark" : 65,
  "grade" : "B"
}
{
  "_id" : ObjectId("62965b0173bd207720f3f250"),
```

```

"mark" : 95,
"grade" : "A+"

  "_id" : ObjectId("62965ab973bd207720f3f24f"),
  "fname" : "karthik",
  "lname" : "krishna",
  "gender" : "male",
  "place" : "thrissur",
  "contact" : 9076676945,
  "department" : "MCA",
  "mark" : 65,
  "grade" : "B"

  "_id" : ObjectId("62965b0173bd207720f3f250"),
  "fname" : "kris",
  "lname" : "krishna",
  "gender" : "male",
  "place" : "kollam",
  "contact" : 7076676945,
  "department" : "MCA",
  "mark" : 98,
  "grade" : "A+"

  "_id" : ObjectId("62965b2873bd207720f3f251"),
  "fname" : "swathi",
  "lname" : "krishna",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 7074576945,
  "department" : "Mech",
  "mark" : 89,
  "grade" : "A"

  "_id" : ObjectId("62965b5c73bd207720f3f252"),
  "fname" : "Adhithi",
  "lname" : "roy",
  "gender" : "female",
  "place" : "kottayam",
  "contact" : 7074006945,
  "department" : "Mech",
  "mark" : 79,
  "grade" : "B+"

```

Write a MongoDB Query to:

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

```

> db.StudList.find({gender:"female",department:"MCA"},{fname:1,lname:1,mark:1}).pretty()
{
  "_id" : ObjectId("629659bf73bd207720f3f24b"),
  "fname" : "jolsna",
  "lname" : "prakash",
  "mark" : 90
}
{
  "_id" : ObjectId("629659e873bd207720f3f24c"),
  "fname" : "vyga",
  "lname" : "k",
  "mark" : 87
}

```

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

```

> db.StudList.find({department:"MCA"},{_id:0}).sort({mark:-1}).limit(1).pretty()
{
  "fname" : "kris",
  "lname" : "krishna",
  "gender" : "male",
  "place" : "kollam",
  "contact" : 7076676945,
  "department" : "MCA",
  "mark" : 98,
  "grade" : "A+"
}

```

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

```
> db.StudList.find({gender:"female",grade:"A+"},{_id:0})
{ "fname" : "jolsna", "lname" : "prakash", "gender" : "female", "place" : "kozhikode", "contact" : 9035675895, "department" : "MCA", "mark" : 90, "grade" : "A+" }
{ "fname" : "soorya", "lname" : "p", "gender" : "female", "place" : "thiruvananthapuram", "contact" : 8976676945, "department" : "Mech", "mark" : 95, "grade" : "A+" }
```

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

```
> db.StudList.find({department:"Mech"},{fname:1,lname:1}).sort({mark:-1}).limit(3)
{ "_id" : ObjectId("62965a1e73bd207720f3f24d"), "fname" : "vishnu", "lname" : "rajeev" }
{ "_id" : ObjectId("62965a6f73bd207720f3f24e"), "fname" : "soorya", "lname" : "p" }
{ "_id" : ObjectId("62965b2873bd207720f3f251"), "fname" : "swathi", "lname" : "krishna" }
```

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

```
> db.StudList.find({gender:"female",mark:{$gt:90}},{fname:1,lname:1,grade:1,contact:1,mark:1}).pretty()
{
  "_id" : ObjectId("62965a6f73bd207720f3f24e"),
  "fname" : "soorya",
  "lname" : "p",
  "contact" : 8976676945,
  "mark" : 95,
  "grade" : "A+"
}
```

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

```
> db.StudList.find({$and:[{mark:{$gt:80}},{mark:{$lt:90}}]},{}).pretty()
{
  "_id" : ObjectId("629659e873bd207720f3f24c"),
  "fname" : "vyga",
  "lname" : "k",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 9035675845,
  "department" : "MCA",
  "mark" : 87,
  "grade" : "A"
}
{
  "_id" : ObjectId("62965b2873bd207720f3f251"),
  "fname" : "swathi",
  "lname" : "krishna",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 7074576945,
  "department" : "Mech",
  "mark" : 89,
  "grade" : "A"
}
```

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

```

> db.StudList.find({fname:{$regex: '^v'}},{}).pretty()
{
  "_id" : ObjectId("629659e873bd207720f3f24c"),
  "fname" : "vyga",
  "lname" : "k",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 9035675845,
  "department" : "MCA",
  "mark" : 87,
  "grade" : "A"
}
{
  "_id" : ObjectId("62965a1e73bd207720f3f24d"),
  "fname" : "vishnu",
  "lname" : "rajeev",
  "gender" : "male",
  "place" : "kollam",
  "contact" : 8976675845,
  "department" : "Mech",
  "mark" : 98,
  "grade" : "A+"
}

```

8. Display all students from Kollam

```

> db.StudList.find({place:"kollam"},{_id:0}).pretty()
{
  "fname" : "vyga",
  "lname" : "k",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 9035675845,
  "department" : "MCA",
  "mark" : 87,
  "grade" : "A"
}
{
  "fname" : "vishnu",
  "lname" : "rajeev",
  "gender" : "male",
  "place" : "kollam",
  "contact" : 8976675845,
  "department" : "Mech",
  "mark" : 98,
  "grade" : "A+"
}
{
  "fname" : "kris",
  "lname" : "krishna",
  "gender" : "male",
  "place" : "kollam",
  "contact" : 7076676945,
  "department" : "MCA",
  "mark" : 98,
  "grade" : "A+"
}
{
  "fname" : "swathi",
  "lname" : "krishna",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 7074576945,
  "department" : "Mech",
  "mark" : 89,
  "grade" : "A"
}

```

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

```
> db.StudList.find({$nor:[{place:"kollam"},{place:"thiruvananthapuram"}]}).pretty()
{
  "_id" : ObjectId("629659bf73bd207720f3f24b"),
  "fname" : "jolsna",
  "lname" : "prakash",
  "gender" : "female",
  "place" : "kozhikode",
  "contact" : 9035675895,
  "department" : "MCA",
  "mark" : 90,
  "grade" : "A+"
}
{
  "_id" : ObjectId("62965ab973bd207720f3f24f"),
  "fname" : "karthik",
  "lname" : "krishna",
  "gender" : "male",
  "place" : "thrissur",
  "contact" : 9076676945,
  "department" : "MCA",
  "mark" : 65,
  "grade" : "B"
}
{
  "_id" : ObjectId("62965b5c73bd207720f3f252"),
  "fname" : "Adhithi",
  "lname" : "roy",
  "gender" : "female",
  "place" : "kottayam",
  "contact" : 7074006945,
  "department" : "Mech",
  "mark" : 79,
  "grade" : "B+"
}
```

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

```
> db.StudList.find({$or:[{place:"kollam"},{place:"thiruvananthapuram"}],gender:"female"}).pretty()
{
  "_id" : ObjectId("629659e873bd207720f3f24c"),
  "fname" : "vyga",
  "lname" : "k",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 9035675845,
  "department" : "MCA",
  "mark" : 87,
  "grade" : "A"
}
{
  "_id" : ObjectId("62965a6f73bd207720f3f24e"),
  "fname" : "soorya",
  "lname" : "p",
  "gender" : "female",
  "place" : "thiruvananthapuram",
  "contact" : 8976676945,
  "department" : "Mech",
  "mark" : 95,
  "grade" : "A+"
}
{
  "_id" : ObjectId("62965b2873bd207720f3f251"),
  "fname" : "swathi",
  "lname" : "krishna",
  "gender" : "female",
  "place" : "kollam",
  "contact" : 7074576945,
  "department" : "Mech",
  "mark" : 89,
  "grade" : "A"
}
```