

LAB ASSIGNMENT – 3**DATE: 02/02/2026****Name:- Snigdha Sucharita Kar****RollNo: UG/02/BTCSEAIML/2023/075****RegNO: AU/2023/0010993****Section :'E'****Schema**

{ roll_no, name, age, department, city, marks }

Roll No	Name	Age	Department	City	Marks
1	Amit	20	CSE	Kolkata	78
2	Neha	19	IT	Delhi	65
3	Ravi	21	CSE	Mumbai	82
4	Pooja	22	ECE	Chennai	70
5	Karan	20	IT	Kolkata	55

Initial Data**Database Name:** collegeDB_`YourRollNo`**Collection Name:** students_`YourRollNo`

```
test> use collegeDB_AIML075
switched to db collegeDB_AIML075
collegeDB_AIML075> db.createCollection("Students_AIML075")
{ ok: 1 }
collegeDB_AIML075> db.Students_AIML075.insertMany([{"roll_no":1,"name":"Amit","age":20,"dep": "CSE", "city": "Kolkata", "marks":78}, {"roll_no":2,"name":"Neha","age":19, "dep": "IT", "city": "Delhi", "marks":65}, {"roll_no":3,"name":"Ravi","age":21, "dep": "CSE", "city": "Mumbai", "marks":82}, {"roll_no":4,"name":"Pooja","age":22, "dep": "ECE", "city": "Chennai", "marks":70}, {"roll_no":5,"name":"Karan","age":20, "dep": "IT", "city": "Kolkata", "marks":55}])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('69804c5a86c63d39831e2621'),
    '1': ObjectId('69804c5a86c63d39831e2622'),
    '2': ObjectId('69804c5a86c63d39831e2623'),
    '3': ObjectId('69804c5a86c63d39831e2624'),
    '4': ObjectId('69804c5a86c63d39831e2625')
  }
}
```

Lab Questions

Q1. Display all student records from the collection.

```
collegeDB_AIML075> db.students_AIML075.find()
[
  {
    _id: ObjectId('69804c5a86c63d39831e2621'),
    roll_no: 1,
    name: 'Amit',
    age: 20,
    department: 'CSE',
    collegeDB_AIML075> -
      marks: 78
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2622'),
    roll_no: 2,
    name: 'Neha',
    age: 19,
    department: 'IT',
    city: 'Delhi',
    marks: 65
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2623'),
    roll_no: 3,
    name: 'Ravi',
    age: 21,
    department: 'CSE',
    city: 'Mumbai',
    marks: 82
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2624'),
    roll_no: 4,
    name: 'Pooja',
    age: 22,
    department: 'ECE',
    city: 'Chennai',
    marks: 70
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2625'),
    roll_no: 5,
    name: 'Karan',
    age: 20,
    department: 'IT',
  }
]
```

Q2. Display only the name and department of all students.

```
collegeDB_AIML075> db.Students_AIML075.find({}, {name:1, department:1, _id:0})
[
  { name: 'Amit', department: 'CSE' },
  { name: 'Neha', department: 'IT' },
  { name: 'Ravi', department: 'CSE' },
  { name: 'Pooja', department: 'ECE' },
  { name: 'Karan', department: 'IT' }
]
```

Q3. Find students belonging to the CSE department.

```
collegeDB_AIML075> db.Students_AIML075.find({department:"CSE"})
[ marks: 78
{,
  _id: ObjectId('69804c5a86c63d39831e2621'),
  roll_no: 1,Id('69804c5a86c63d39831e2622'),
  name: 'Amit',
  age: 20,eha',
  department: 'CSE',
  city: 'Kolkata' '',
  marks: 78lhi',
},marks: 65
{,
  _id: ObjectId('69804c5a86c63d39831e2623'),
  roll_no: 3,Id('69804c5a86c63d39831e2623'),
  name: 'Ravi',
  age: 21,avi',
  department: 'CSE',
  city: 'Mumbai',E',
  marks: 82mbai',
} marks: 82
] },
```

Q4. Find students whose age is greater than 20.

```
collegeDB_AIML075> db.Students_AIML075.find({age:{$gt:20}})
[ {
  _id: ObjectId('69804c5a86c63d39831e2623'),
  roll_no: 3,
  name: 'Ravi',
  age: 21,
  department: 'CSE',
  city: 'Mumbai',
  marks: 82
},
{
  _id: ObjectId('69804c5a86c63d39831e2624'),
  roll_no: 4,
  name: 'Pooja',
  age: 22,
  department: 'ECE',
  city: 'Chennai',
  marks: 70
}
]
```

Q5. Find students who scored less than 70 marks.

```
collegeDB_AIML075> db.Students_AIML075.find({marks:{$lt:70}})
[ {
  _id: ObjectId('69804c5a86c63d39831e2622'),
  roll_no: 2,
  name: 'Neha',
  age: 19,
  department: 'IT',
  city: 'Delhi',
  marks: 65
},
{
  _id: ObjectId('69804c5a86c63d39831e2625'),
  roll_no: 5,
  name: 'Karan',
  age: 20,
  department: 'IT',
  city: 'Kolkata',
  marks: 55
}
]
```

Q6. Display students belonging to Kolkata city.

```
collegeDB_AIML075> db.Students_AIML075.find({city:"Kolkata"})
[
  {
    _id: ObjectId('69804c5a86c63d39831e2621'),
    roll_no: 1,
    name: 'Amit',
    age: 20,
    department: 'CSE',
    city: 'Kolkata',
    marks: 78
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2625'),
    roll_no: 5,
    name: 'Karan',
    age: 20,
    department: 'IT',
    city: 'Kolkata',
    marks: 55
  }
]
```

Q7. Sort students by age in ascending order.

```
collegeDB_AIML075> db.Students_AIML075.find().sort({age:1})
[
  {
    _id: ObjectId('69804c5a86c63d39831e2622'),
    roll_no: 2,
    name: 'Neha',
    age: 19,
    department: 'IT',
    city: 'Delhi',
    marks: 65
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2621'),
    roll_no: 1,
    name: 'Amit',
    age: 20,
    department: 'CSE',
    city: 'Kolkata',
    marks: 78
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2625'),
    roll_no: 5,
    name: 'Karan',
    age: 20,
    department: 'IT',
    city: 'Kolkata',
    marks: 55
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2623'),
    roll_no: 3,
    name: 'Ravi',
    age: 21,
    department: 'CSE',
    city: 'Mumbai',
    marks: 82
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2624'),
    roll_no: 4,
    name: 'Pooja',
    age: 22,
    department: 'ECE',
    city: 'Chennai',
    marks: 70
  }
]
```

Q8. Sort students by marks in descending order.

```
[collegeDB_AIML075> db.Students_AIML075.find().sort({marks:-1})
[
  {
    _id: ObjectId('69804c5a86c63d39831e2623'),
    roll_no: 3,
    name: 'Ravi',
    age: 21,
    department: 'CSE',
    city: 'Mumbai',
    marks: 82
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2621'),
    roll_no: 1,
    name: 'Amit',
    age: 20,
    department: 'CSE',
    city: 'Kolkata',
    marks: 78
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2624'),
    roll_no: 4,
    name: 'Pooja',
    age: 22,
    department: 'ECE',
    city: 'Chennai',
    marks: 70
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2622'),
    roll_no: 2,
    name: 'Neha',
    age: 19,
    department: 'IT',
    city: 'Delhi',
    marks: 65
  },
]
```

Q9. Display only the first three student records.

```
[collegeDB_AIML075> db.Students_AIML075.find().limit(3)
[
  {
    _id: ObjectId('69804c5a86c63d39831e2621'),
    roll_no: 1,
    name: 'Amit',
    age: 20,
    department: 'CSE',
    city: 'Kolkata',
    marks: 78
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2622'),
    roll_no: 2,
    name: 'Neha',
    age: 19,
    department: 'IT',
    city: 'Delhi',
    marks: 65
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2623'),
    roll_no: 3,
    name: 'Ravi',
    age: 21,
    department: 'CSE',
    city: 'Mumbai',
    marks: 82
  }
]
```

Q10. Update the marks of student Neha to 72.

```
collegeDB_AIML075> db.Students_AIML075.updateOne({name:"Neha"}, {$set:{marks:72}})_
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

Q11. Increase the marks of all students by 5.

```
collegeDB_AIML075> db.Students_AIML075.updateMany({}, {$inc:{marks:5}})_
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 5,
  modifiedCount: 5,
  upsertedCount: 0
}
```

Q12. Delete the student having roll number 5.

```
collegeDB_AIML075> db.Students_AIML075.deleteOne({roll_no:5})_
{ acknowledged: true, deletedCount: 1 }
  acknowledged: true,
  insertedId: null,
  matchedCount: 5,
  modifiedCount: 5,
  upsertedCount: 0
}
```

Q13. Find students whose age is between 20 and 22.

```
[ acknowledged: true, deletedCount: 1 ]
{
  acknowledged: true,
  _id: ObjectId('69804c5a86c63d39831e2621'),
  roll_no: 1, 5,
  name: 'Amit', 5,
  age: 20,unt: 0
  department: 'CSE',
  city: 'Kolkata',
  marks: 83
},
{
  _id: ObjectId('69804c5a86c63d39831e2623'),
  roll_no: 3,
  name: 'Ravi',
  age: 21,
  department: 'CSE',
  city: 'Mumbai',
  marks: 87
},
{
  _id: ObjectId('69804c5a86c63d39831e2624'),
  roll_no: 4,
  name: 'Pooja',
  age: 22,
  department: 'ECE',
  city: 'Chennai',
  marks: 75
}
]
```

Q14. Display students belonging to either CSE or IT department.

```
collegeDB_AIML075> db.Students_AIML075.find({department:{$in:["CSE","IT"]}})
[
  {
    _id: ObjectId('69804c5a86c63d39831e2621'),
    roll_no: 1,
    name: 'Amit',
    age: 20,
    department: 'CSE',
    city: 'Kolkata',
    marks: 83
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2622'),
    roll_no: 2,
    name: 'Neha',
    age: 19,
    department: 'IT',
    city: 'Delhi',
    marks: 77
  },
  {
    _id: ObjectId('69804c5a86c63d39831e2623'),
    roll_no: 3,
    name: 'Ravi',
    age: 21,
    department: 'CSE',
    city: 'Mumbai',
    marks: 87
  }
]
```

MongoDB Compass - localhost:27017/collegeDB_AIML075.Students_AIML075

Connections Edit View Collection Help

Compass

My Queries

Data Modeling

CONNECTIONS (1)

localhost:27017

- admin
- collegeDB
- collegeDB_AIML075
 - Students_AIML075
 - config
 - local
 - test

localhost:27017 > collegeDB_AIML075 > Students_AIML075

Documents 4 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#) [Find](#) [Options](#)

[Explain](#) [Reset](#)

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```
_id: ObjectId('69804c5a86c63d39831e2621')
roll_no: 1
name: "Amit"
age: 20
department: "CSE"
city: "Kolkata"
marks: 83
```

```
_id: ObjectId('69804c5a86c63d39831e2622')
roll_no: 2
name: "Neha"
age: 19
department: "IT"
city: "Delhi"
marks: 77
```

```
_id: ObjectId('69804c5a86c63d39831e2623')
roll_no: 3
name: "Ravi"
age: 21
department: "CSE"
```

MongoDB Compass - localhost:27017/collegeDB_AIML075.Students_AIML075

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Documents 4 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#) [Find](#) [Options](#)

[Explain](#) [Reset](#)

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```
age: 19
department: "IT"
city: "Delhi"
marks: 77
```

```
_id: ObjectId('69804c5a86c63d39831e2623')
roll_no: 3
name: "Ravi"
age: 21
department: "CSE"
city: "Mumbai"
marks: 87
```

```
_id: ObjectId('69804c5a86c63d39831e2624')
roll_no: 4
name: "Pooja"
age: 22
department: "ECE"
city: "Chennai"
marks: 75
```