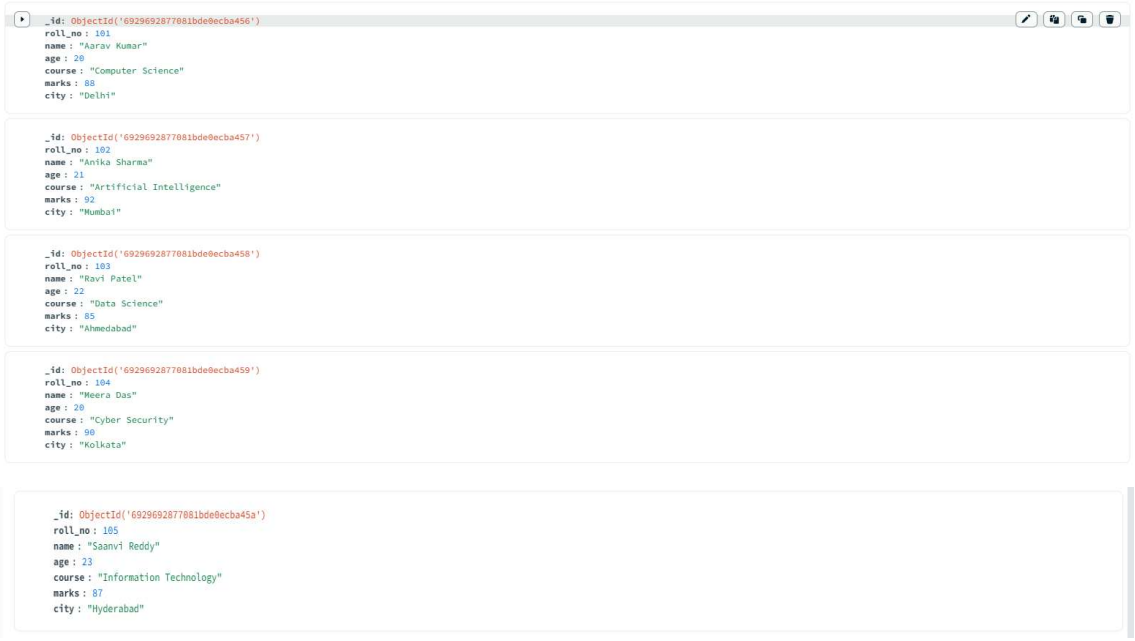
LAB-28/11/25

NoSQL

```
> use test
< switched to db test
>


  db.students.insertMany([
    { roll_no: 101, name: "Aarav Kumar", age: 20, course: "Computer Science", marks: 88, city: "Delhi" },
    { roll_no: 102, name: "Anika Sharma", age: 21, course: "Artificial Intelligence", marks: 92, city: "Mumbai" },
    { roll_no: 103, name: "Ravi Patel", age: 22, course: "Data Science", marks: 85, city: "Ahmedabad" },
    { roll_no: 104, name: "Meera Das", age: 20, course: "Cyber Security", marks: 90, city: "Kolkata" },
    { roll_no: 105, name: "Saanvi Reddy", age: 23, course: "Information Technology", marks: 87, city: "Hyderabad" }
  ])
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('6929692877081bde0ecba456'),
      '1': ObjectId('6929692877081bde0ecba457'),
      '2': ObjectId('6929692877081bde0ecba458'),
      '3': ObjectId('6929692877081bde0ecba459'),
      '4': ObjectId('6929692877081bde0ecba45a')
    }
  }
test>
```



QUERIES:

1. Student with highest marks

```
>_MONGOSH

> use test
< already on db test
> db.students.find().sort({ marks: -1 }).limit(1)
< {
    _id: ObjectId('6929692877081bde0ecba457'),
    roll_no: 102,
    name: 'Anika Sharma',
    age: 21,
    course: 'Artificial Intelligence',
    marks: 92,
    city: 'Mumbai'
  }
```

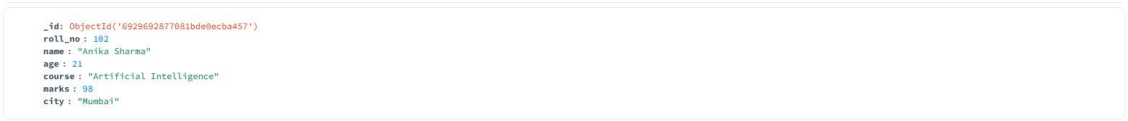
2. Find average marks

```
> db.students.aggregate([
    {
      $group: {
        _id: null,
        averageMarks: { $avg: "$marks" }
      }
    }
  ])
< {
    _id: null,
    averageMarks: 88.4
```

3. Update student anika sharma’s marks to 98

```
> db.students.updateOne(
    { name: "Anika Sharma" },
    { $set: { marks: 98 } }
  )
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
```

Updated in the database:



4. Find students who scored above 85

```
db.students.find(
  { marks: { $gt: 85 } },
  { name: 1, marks: 1, _id: 0 }
)
{
  name: 'Aarav Kumar',
  marks: 88
}
{
  name: 'Anika Sharma',
  marks: 98
}
{
  name: 'Meera Das',
  marks: 90
}
```

5. Find student from “Mumbai”

```
> db.students.find(
    { city: "Mumbai" },
    { name: 1, course: 1, _id: 0 }
  )
< {
    name: 'Anika Sharma',
    course: 'Artificial Intelligence'
  }
test>
```

6. Display name and marks of all students:

```
> db.students.find(
    {},
    { name: 1, marks: 1, _id: 0 }
  )
< {
    name: 'Aarav Kumar',
    marks: 88
  }
  {
    name: 'Anika Sharma',
    marks: 98
  }
  {
    name: 'Ravi Patel',
    marks: 85
  }
  {
    name: 'Meera Das',
    marks: 90
  }
  {
    name: 'Saanvi Reddy',
    marks: 87
  }
```

7. Sum of marks of all students

```
> db.students.aggregate([
    {
      $group: {
        _id: null,
        totalMarks: { $sum: "$marks" }
      }
    }
  ])
< {
    _id: null,
    totalMarks: 448
  }
test>
```