

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> |
```

<pre> _id: ObjectId('6929692877081bde0ecba456') roll_no: 101 name: "Aarav Kumar" age: 20 course: "Computer Science" marks: 88 city: "Delhi"</pre>
<pre> _id: ObjectId('6929692877081bde0ecba457') roll_no: 102 name: "Anika Sharma" age: 21 course: "Artificial Intelligence" marks: 92 city: "Mumbai"</pre>
<pre> _id: ObjectId('6929692877081bde0ecba458') roll_no: 103 name: "Ravi Patel" age: 22 course: "Data Science" marks: 85 city: "Ahmedabad"</pre>
<pre> _id: ObjectId('6929692877081bde0ecba459') roll_no: 104 name: "Meera Das" age: 20 course: "Cyber Security" marks: 90 city: "Kolkata"</pre>
<pre> _id: ObjectId('6929692877081bde0ecba45a') roll_no: 105 name: "Saanvi Reddy" age: 23 course: "Information Technology" marks: 87 city: "Hyderabad"</pre>

QUERIES:

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'
}
```

Find average marks

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

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:

```
{
  _id: ObjectId('6929692877081bde0ecba457'),
  roll_no: 102,
  name: "Anika Sharma",
  age: 21,
  course: "Artificial Intelligence",
  marks: 98,
  city: "Mumbai"
}
```

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
  }
]
```

Find student from "Mumbai"

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

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
}
```

Sum of marks of all students

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