

DBMS extra lab

Commands executed:

1. Insert
2. Update
3. Delete
4. count()
5. limit()
6. sort()
7. \$gt
8. \$lt
9. \$in
10. \$min
11. \$max
12. \$sum

```
mongosh mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000
Please enter a MongoDB connection string (Default: mongodb://localhost/): MONGODB
MONGODB
Current Mongosh Log ID: 646203e8e7559fb9f261e3f5
Connecting to:      mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+1.8.2
Using MongoDB:      6.0.6
Using Mongosh:      1.8.2

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

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The server generated these startup warnings when booting
2023-05-15T15:06:49.648+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

MONGODB> use students
students> db.students.insertOne({ID:242,name:[{"firstname":"Kaveri","lastname":"Zanzame"}],Branch:"CS",CGPA:9.9,city:"Pune"})
{
  acknowledged: true,
  insertedId: ObjectId("6462052ce7559fb9f261e3f6")
}
students> db.students.insertOne({ID:101,name:[{"firstname":"Suara","lastname":"Mahajan"}],Branch:"CS",CGPA:8,city:"Bangalore"})
{
  acknowledged: true,
  insertedId: ObjectId("64620586e7559fb9f261e3f7")
}
students> db.students.insertOne({ID:102,name:[{"firstname":"Shivani","lastname":"Patil"}],Branch:"MECH",CGPA:8.5,city:"Delhi"})
{
  acknowledged: true,
  insertedId: ObjectId("646205f7e7559fb9f261e3f8")
}
students> db.students.insertOne({ID:103,name:[{"firstname":"Aishwarya","lastname":"Pharande"}],Branch:"MECH",CGPA:9,city:"Mumbai"})
{
  acknowledged: true,
  insertedId: ObjectId("6462064e7559fb9f261e3f9")
}
students> db.students.insertOne({ID:104,name:[{"firstname":"Anvi","lastname":"Jain"}],Branch:"CIVIL",CGPA:7,city:"Pune"})
{
  acknowledged: true,
  insertedId: ObjectId("6462064e7559fb9f261e3fa")
}
students> db.students.insertOne({ID:104,name:[{"firstname":"Kinjal","lastname":"Mundel"}],Branch:"CIVIL",CGPA:7,city:"Pune"})
{
  acknowledged: true,
  insertedId: ObjectId("64620989e7559fb9f261e3fb")
}
students> db.students.insertOne({ID:104,name:[{"firstname":"Arya","lastname":"Pawar"}],Branch:"ENITC",CGPA:8,city:"Pune"})
{
  acknowledged: true,
  insertedId: ObjectId("646209aee7559fb9f261e3fc")
}
```

```
mongosh mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000
students> db.students.insertOne({ID:104,name:[{"firstname":"Arya","lastname":"Pawar"}],Branch:"ENTC",CGPA:8,city:"Pune"})
{ acknowledged: true,
  insertedId: ObjectId("646209aee7559fb9f261e3fc") }
students> db.students.find()
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { { firstname: 'Kaveri', lastname: 'Zanzane' } } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  },
  {
    _id: ObjectId("64620586e7559fb9f261e3f7"),
    ID: 101,
    Name: [ { { firstname: 'Swara', lastname: 'Mahajan' } } ],
    Branch: 'CS',
    CGPA: 8,
    City: 'Bangalore'
  },
  {
    _id: ObjectId("646205f7e7559fb9f261e3f8"),
    ID: 102,
    Name: [ { { firstname: 'Shivani', lastname: 'Patil' } } ],
    Branch: 'MECH',
    CGPA: 8.5,
    City: 'Delhi'
  },
  {
    _id: ObjectId("64620647e7559fb9f261e3f9"),
    ID: 103,
    Name: [ { { firstname: 'Aishwarya', lastname: 'Pharande' } } ],
    Branch: 'MECH',
    CGPA: 9,
    City: 'Mumbai'
  },
  {
    _id: ObjectId("64620964e7559fb9f261e3fa"),
    ID: 104,
    Name: [ { { firstname: 'Jasvi', lastname: 'Jain' } } ],
    Branch: 'CIVIL',
    CGPA: 7,
    City: 'Pune'
  },
  {
    _id: ObjectId("64620989e7559fb9f261e3fb"),
    ID: 105,
    Name: [ { { firstname: 'Kinjal', lastname: 'Hundal' } } ],
    Branch: 'CIVIL',
    CGPA: 7,
    City: 'Pune'
  },
  {
    _id: ObjectId("646209aee7559fb9f261e3fc"),
    ID: 106,
    Name: [ { { firstname: 'Arya', lastname: 'Pawar' } } ],
    Branch: 'ENTC',
    CGPA: 8,
    City: 'Pune'
  }
]
```

mongosh mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000

```
Branch: 'ENTC',
CGPA: 8,
City: 'Pune'
}
]
students> db.students.deleteMany({ID:104})
{ acknowledged: true, deletedCount: 2 }
students> db.students.find()
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  },
  {
    _id: ObjectId("64620586e7559fb9f261e3f7"),
    ID: 101,
    Name: [ { firstname: 'Suara', lastname: 'Mahajan' } ],
    Branch: 'CS',
    CGPA: 8,
    City: 'Banglore'
  },
  {
    _id: ObjectId("646205f7e7559fb9f261e3f8"),
    ID: 102,
    Name: [ { firstname: 'Shivani', lastname: 'Patil' } ],
    Branch: 'MECH',
    CGPA: 8.5,
    City: 'Delhi'
  },
  {
    _id: ObjectId("64620647e7559fb9f261e3f9"),
    ID: 103,
    Name: [ { firstname: 'Aishwarya', lastname: 'Pharande' } ],
    Branch: 'MECH',
    CGPA: 9,
    City: 'Mumbai'
  }
]
students>
```

mongosh mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000

```
_id: ObjectId("64620647e7559fb9f261e3f9"),
ID: 103,
Name: [ { firstname: 'Aishwarya', lastname: 'Pharande' } ],
Branch: 'MECH',
CGPA: 9,
City: 'Mumbai'
}
]
students> db.students.updateOne({ID:103},{ $set: { 'City': 'Pune' } })
students> db.students.find()
[ acknowledged: true,
  { insertedId: null,
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,unt: 1,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  },
  {
    _id: ObjectId("64620586e7559fb9f261e3f7"),
    ID: 101,
    Name: [ { firstname: 'Suara', lastname: 'Mahajan' } ],
    Branch: 'CS',
    CGPA: 8,
    City: 'Banglore'
  },
  {
    _id: ObjectId("646205f7e7559fb9f261e3f8"),
    ID: 102,
    Name: [ { firstname: 'Shivani', lastname: 'Patil' } ],
    Branch: 'MECH',
    CGPA: 8.5,
    City: 'Delhi'
  },
  {
    _id: ObjectId("64620647e7559fb9f261e3f9"),
    ID: 103,
    Name: [ { firstname: 'Aishwarya', lastname: 'Pharande' } ],
    Branch: 'MECH',
    CGPA: 9,
    City: 'Pune'
  }
]
students>
```

```
mongosh mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000
students> db.students.find({"ID":{"$gt:200}})
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  }
]
students> db.students.find({"ID":{"$lt:105}})
[
  {
    _id: ObjectId("64620586e7559fb9f261e3f7"),
    ID: 101,
    Name: [ { firstname: 'Swara', lastname: 'Mahajan' } ],
    Branch: 'CS',
    CGPA: 8,
    City: 'Bangalore'
  },
  {
    _id: ObjectId("646205f7e7559fb9f261e3f8"),
    ID: 102,
    Name: [ { firstname: 'Shivani', lastname: 'Patil' } ],
    Branch: 'MECH',
    CGPA: 8.5,
    City: 'Delhi'
  },
  {
    _id: ObjectId("64620647e7559fb9f261e3f9"),
    ID: 103,
    Name: [ { firstname: 'Aishwarya', lastname: 'Pharande' } ],
    Branch: 'MECH',
    CGPA: 9,
    City: 'Pune'
  }
]
students> db.students.find({"ID":{"$in:[242,101]}})
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  },
  {
    _id: ObjectId("64620586e7559fb9f261e3f7"),
    ID: 101,
    Name: [ { firstname: 'Swara', lastname: 'Mahajan' } ],
    Branch: 'CS',
    CGPA: 8,
    City: 'Bangalore'
  }
]
students> db.students.find({"ID":{"$in:[242,101]}})
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  },
  {
    _id: ObjectId("646205f7e7559fb9f261e3f8"),
    ID: 102,
    Name: [ { firstname: 'Shivani', lastname: 'Patil' } ],
    Branch: 'MECH',
    CGPA: 8.5,
    City: 'Delhi'
  },
  {
    _id: ObjectId("64620647e7559fb9f261e3f9"),
    ID: 103,
    Name: [ { firstname: 'Aishwarya', lastname: 'Pharande' } ],
    Branch: 'MECH',
    CGPA: 9,
    City: 'Pune'
  }
]
students> db.students.find({"ID":{"$in:[242,101]}})
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  },
  {
    _id: ObjectId("64620586e7559fb9f261e3f7"),
    ID: 101,
    Name: [ { firstname: 'Swara', lastname: 'Mahajan' } ],
    Branch: 'CS',
    CGPA: 8,
    City: 'Bangalore'
  }
]
students>
```

```
mongosh mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000
}
students> db.students.find().sort({CGPA:1})
[
  {
    _id: ObjectId("64620586e7559fb9f261e3f7"),
    ID: 101,
    Name: [ { firstname: 'Swara', lastname: 'Mahajan' } ],
    Branch: 'CS',
    CGPA: 8,
    City: 'Bangalore'
  },
  {
    _id: ObjectId("646205f7e7559fb9f261e3f8"),
    ID: 102,
    Name: [ { firstname: 'Shivani', lastname: 'Patil' } ],
    Branch: 'MECH',
    CGPA: 8.5,
    City: 'Delhi'
  },
  {
    _id: ObjectId("64620647e7559fb9f261e3f9"),
    ID: 103,
    Name: [ { firstname: 'Aishwarya', lastname: 'Pharande' } ],
    Branch: 'MECH',
    CGPA: 9,
    City: 'Pune'
  },
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  }
]
students> db.students.find().limit(1)
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  }
]
students> db.students.aggregate([{$count:"City"}])
[ { City: 4 } ]

mongosh mongodb://127.0.0.1:27017/MONGODB?directConnection=true&serverSelectionTimeoutMS=2000
CGPA: 8,
City: 'Bangalore'
},
{
  _id: ObjectId("646205f7e7559fb9f261e3f8"),
  ID: 102,
  Name: [ { firstname: 'Shivani', lastname: 'Patil' } ],
  Branch: 'MECH',
  CGPA: 8.5,
  City: 'Delhi'
},
{
  _id: ObjectId("64620647e7559fb9f261e3f9"),
  ID: 103,
  Name: [ { firstname: 'Aishwarya', lastname: 'Pharande' } ],
  Branch: 'MECH',
  CGPA: 9,
  City: 'Pune'
},
{
  _id: ObjectId("6462052ce7559fb9f261e3f6"),
  ID: 242,
  Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
  Branch: 'CS',
  CGPA: 9.9,
  City: 'Pune'
}
]
students> db.students.find().limit(1)
[
  {
    _id: ObjectId("6462052ce7559fb9f261e3f6"),
    ID: 242,
    Name: [ { firstname: 'Kaveri', lastname: 'Zanzane' } ],
    Branch: 'CS',
    CGPA: 9.9,
    City: 'Pune'
  }
]
students> db.students.aggregate([{$count:"City"}])
[ { City: 4 } ]
students> db.students.aggregate([{$count:"Branch"}])
[ { Branch: 4 } ]
students>

students> db.students.aggregate([{$group:{$_id:"$Branch",CGPA:{$min:"$CGPA"}}}])
{ _id: 'MECH', CGPA: 8.5 }, { _id: 'CS', CGPA: 8 } ]
students> db.students.aggregate([{$group:{$_id:"$Branch",CGPA:{$max:"$CGPA"}}}])
{ _id: 'MECH', CGPA: 9 }, { _id: 'CS', CGPA: 9.9 } ]
students> db.students.aggregate([{$group:{$_id:"$Branch",CGPA:{$sum:1}}}])
{ _id: 'CS', CGPA: 2 }, { _id: 'MECH', CGPA: 2 } ]
students>
```

