

ASSIGNMENT-4

FULL STACK DEVELOPMENT (MERN STACK)

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Creating Database Using MongoDB and Mongosh:

- Database Setup and Collection Creation:

```
test show dbs
CompassGlobally 48.00 KiB
demo 48.00 KiB
admin 48.00 KiB
aggregation 194.00 KiB
config 72.00 KiB
crud-node 188.00 KiB
crud-node-express 188.00 KiB
demoProject 88.00 KiB
demoProject_2 72.00 KiB
imageCompress 88.00 KiB
jshart 192.00 KiB
local 72.00 KiB
direct 72.00 KiB
sampath 68.00 KiB
srinivas 188.00 KiB
test 8.00 KiB
user 108.00 KiB

test use svitdb
switched to db svitdb
svitdb show db
MongoServerError: [COMMON-10001] 'db' is not a valid argument for 'show'.
svitdb db
svitdb
svitdb> db.student.insertMany([
...   { "name": "John", "age": 20, "grade": "A" },
...   { "name": "Alice", "age": 21, "grade": "B" },
...   { "name": "Bob", "age": 19, "grade": "C" },
...   { "name": "David", "age": 22, "grade": "A" },
...   { "name": "Mike", "age": 20, "grade": "B" },
...   { "name": "Emily", "age": 21, "grade": "A" },
...   { "name": "David", "age": 19, "grade": "C" },
...   { "name": "Sam", "age": 22, "grade": "B" },
...   { "name": "Ryan", "age": 20, "grade": "A" },
...   { "name": "Sophia", "age": 21, "grade": "B" }
... ]);
```

- Document Insertion:

```
svitdb> db.student.insertMany([
...   { "name": "John", "age": 20, "grade": "A" },
...   { "name": "Alice", "age": 21, "grade": "B" },
...   { "name": "Bob", "age": 19, "grade": "C" },
...   { "name": "David", "age": 22, "grade": "A" },
...   { "name": "Mike", "age": 20, "grade": "B" },
...   { "name": "Emily", "age": 21, "grade": "A" },
...   { "name": "David", "age": 19, "grade": "C" },
...   { "name": "Sam", "age": 22, "grade": "B" },
...   { "name": "Ryan", "age": 20, "grade": "A" },
...   { "name": "Sophia", "age": 21, "grade": "B" }
... ]);
{
  acknowledged: true,
  insertedIds: {
    0: ObjectId('65faac9b53ba990fda5082'),
    1: ObjectId('65faac9b53ba990fda5083'),
    2: ObjectId('65faac9b53ba990fda5084'),
    3: ObjectId('65faac9b53ba990fda5085'),
    4: ObjectId('65faac9b53ba990fda5086'),
    5: ObjectId('65faac9b53ba990fda5087'),
    6: ObjectId('65faac9b53ba990fda5088'),
    7: ObjectId('65faac9b53ba990fda5089'),
    8: ObjectId('65faac9b53ba990fda508a'),
    9: ObjectId('65faac9b53ba990fda508b')
  }
}
svitdb>
```

- Update Operation :

```
svitdb> db.student.updateOne(
...   { 'name': 'John' },
...   { $set: { 'grade': 'A+' } }
... );
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
svitdb> db.student.updateMany(
...   { 'age': 20 },
...   { $set: { 'grade': 'A+' } }
... );
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 5,
  modifiedCount: 5,
  upsertedCount: 0
}
svitdb>
```

- Deletion Operation:

```
mongosh mongod> use test
svitdb> db
svitdb> show collections
student
svitdb> db.student.find()
[
  {
    _id: ObjectId('65fah3de53be0940fda5096'),
    name: 'John',
    age: 20,
    grade: 'A'
  },
  {
    _id: ObjectId('65fah3de53be0940fda5097'),
    name: 'Alice',
    age: 21,
    grade: 'B'
  },
  {
    _id: ObjectId('65fah3de53be0940fda5098'),
    name: 'Bob',
    age: 19,
    grade: 'C'
  }
]
svitdb> db.student.deleteMany({ grade: 'C' });
{ acknowledged: true, deletedCount: 1 }
svitdb> db.student.deleteMany({ age: { $gt: 20 } });
{ acknowledged: true, deletedCount: 1 }
svitdb> db.student.find()
[
  {
    _id: ObjectId('65fah3de53be0940fda5096'),
    name: 'John',
    age: 20,
    grade: 'A'
  }
]
svitdb> s
```

- Index creation:

```
svitdb> db
svitdb
svitdb> show collections
student
svitdb> db.student.insertMany([
...   { "name": "John", "age": 20, "grade": "A" },
...   { "name": "Alice", "age": 21, "grade": "B" },
...   { "name": "Bob", "age": 19, "grade": "C" }
... ]);
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('65fab3deb538ed9409fda58996'),
    '1': ObjectId('65fab3deb538ed9409fda58997'),
    '2': ObjectId('65fab3deb538ed9409fda58998')
  }
}
svitdb> db.student.ensureIndex({ "name": 1 });
{ "name": 1 }
svitdb> db.student.ensureIndex({ "age": 1 });
{ "age": 1 }
svitdb> db.student.find();
{
  "_id": ObjectId('65fab3deb538ed9409fda58996'),
  "name": "John",
  "age": 20,
  "grade": "A"
},
{
  "_id": ObjectId('65fab3deb538ed9409fda58997'),
  "name": "Alice",
  "age": 21,
  "grade": "B"
},
{
  "_id": ObjectId('65fab3deb538ed9409fda58998'),
  "name": "Bob",
  "age": 19,
  "grade": "C"
}
```