

LAB – 10

Web Tech.

Name: Ayushi Gupta

Roll no.: 22CS3022

Branch: CSE

Ques] 1. Connect to a MongoDB server using MongoDB Compass.

2. Create a new database named "testdb" in MongoDB Compass.

3. Create a new collection named "students" in the "testdb" database.

**4. Insert ten documents into the "students" collection with the following fields:
name, age, and email.**

5. View the contents of the "students" collection.

6. Update the age of a specific student in the "students" collection.

**7. Delete a document from the "students" collection based on a specific
condition.**

**8. Use the aggregation pipeline to calculate the average age of all students in the
"students" collection.**

9. Create an index on the "name" field in the "students" collection.

10. Export the contents of the "students" collection to a JSON file.

**11. Perform a complex aggregation operation to find the top 5 oldest students in
the "students" collection.**

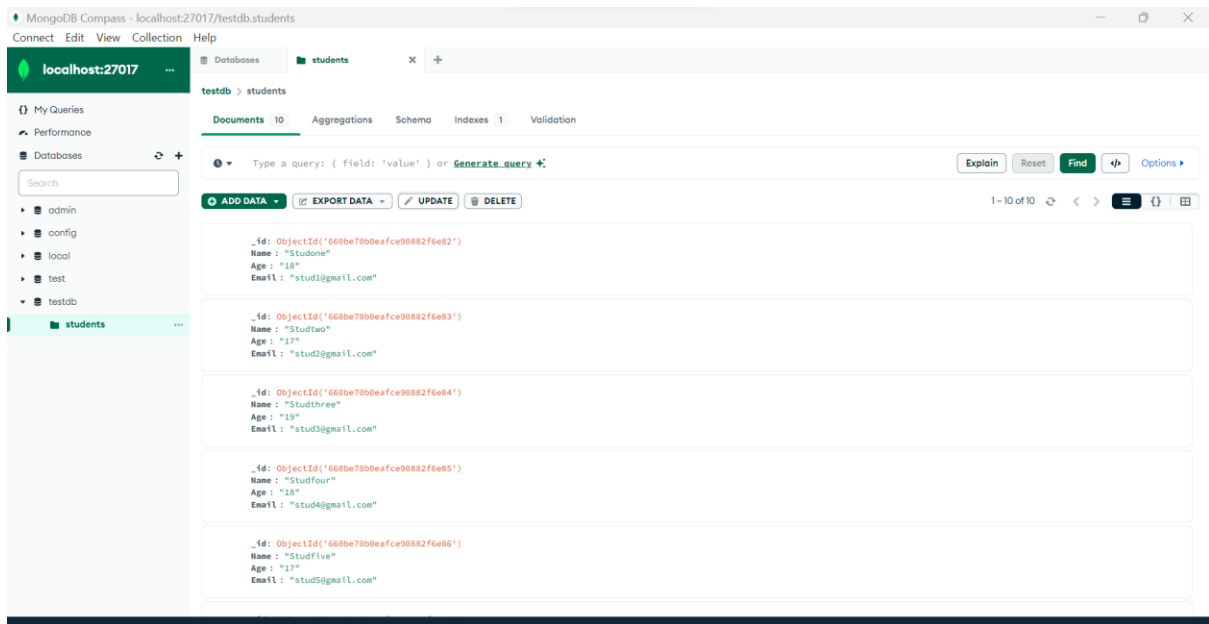
12. Create a geospatial index on a field representing the location of students.

**13. Use MongoDB Compass to visualize the data distribution in the "students"
collection.**

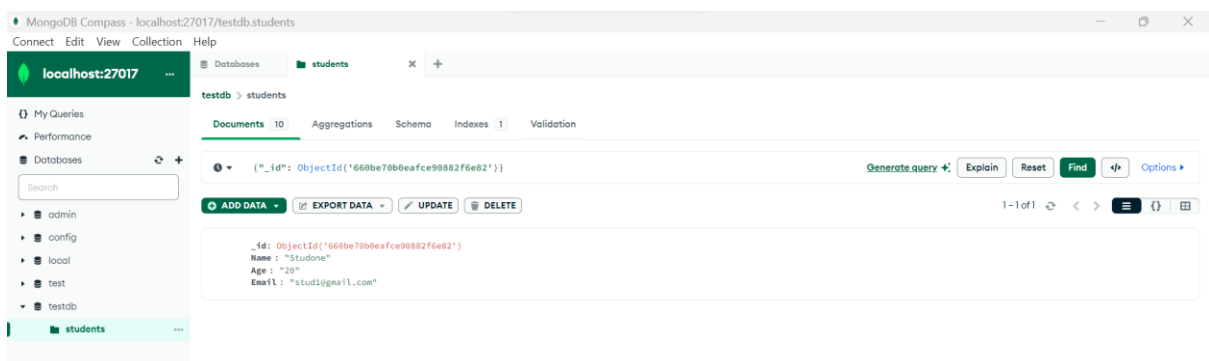
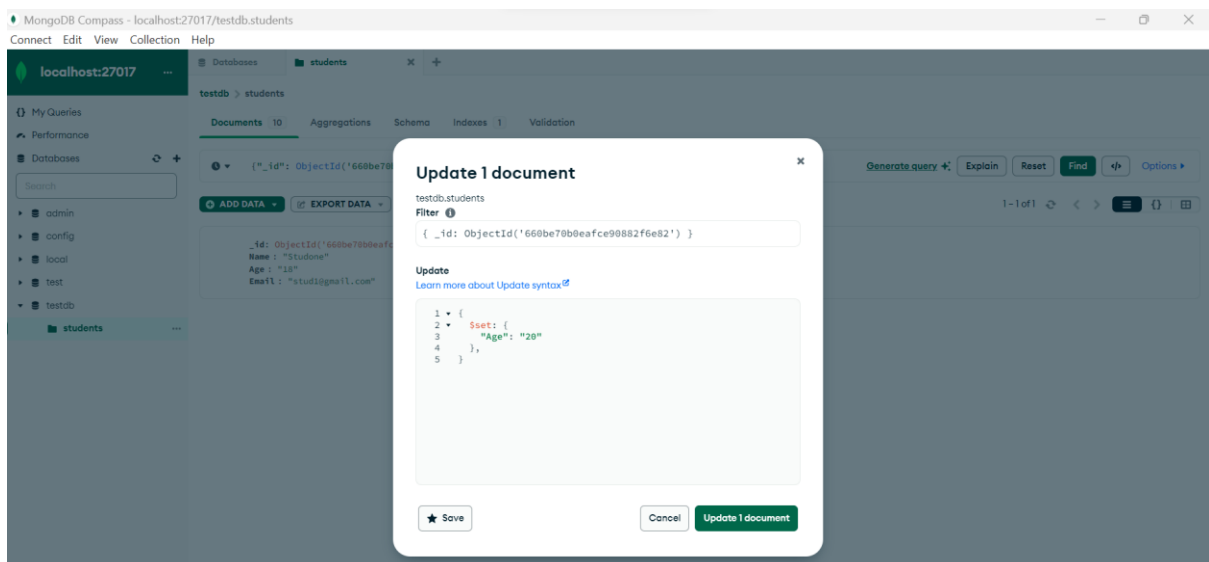
**14. Set up a data validation rule to ensure that documents in the "students"
collection must have a non-empty name field.**

Output:

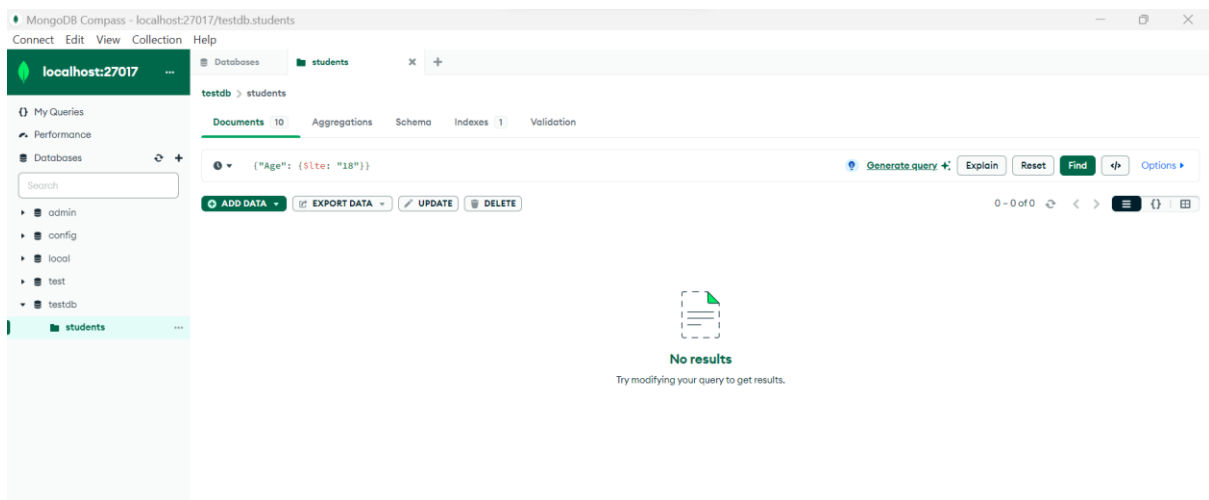
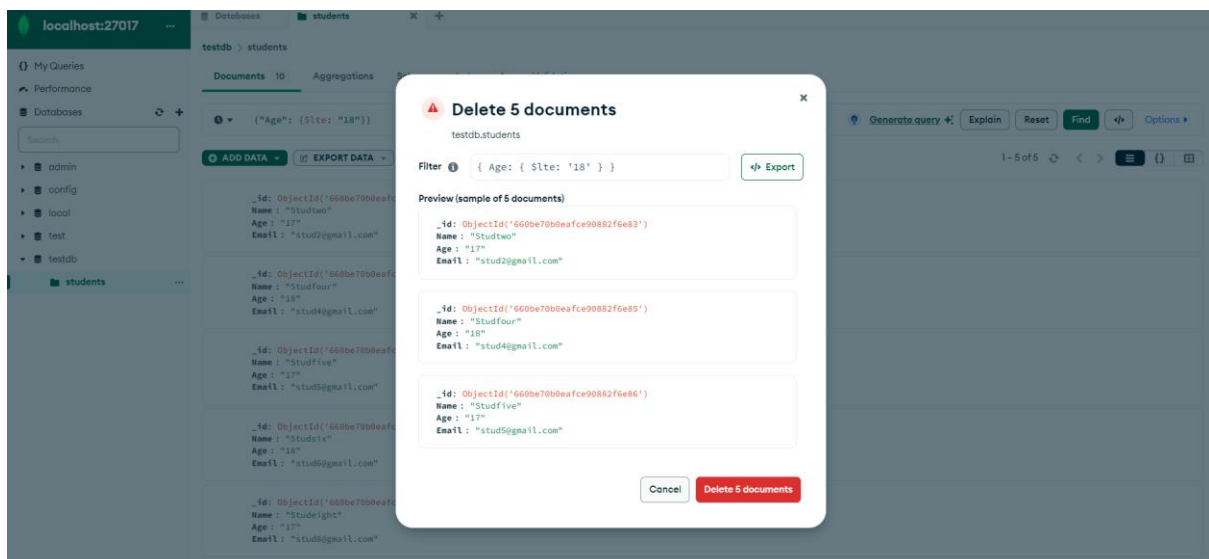
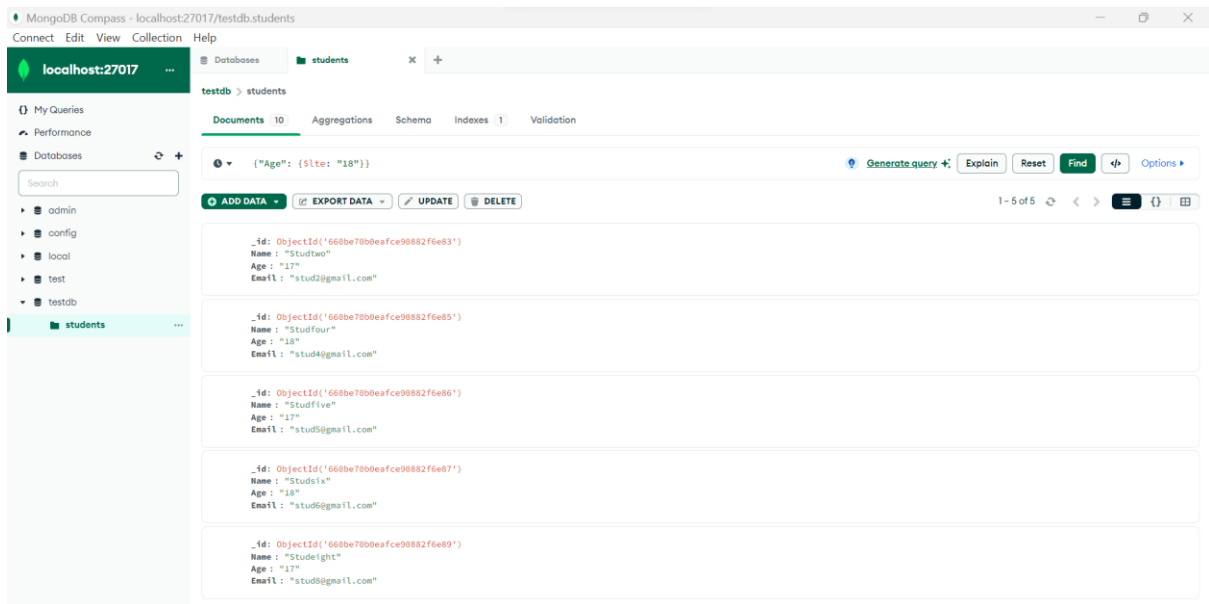
Step 1, 2, 3, 4, 5 =>



Step 6 =>



Step 7 =>



Step 8 =>

Stage1 \$group

1

2

3

4

5

6

7

8

9

```
{
  "_id": null,
  "averageAge": { "$avg": "$age" }
}
```

Output after \$group stage (Sample of 1 document)

```
_id: null
averageAge: 18.55555555555557
```

Step 9 =>

MongoDB Compass - localhost:27017/testdb.students

Connect Edit View Collection Help

localhost:27017

Databases students

testdb > students

Documents 10 Aggregations Schema Indexes 1 Validation

Create Index Refresh

VIEWING INDEXES SEARCH INDEXES

Name and Definition	Type	Size	Usage	Properties
> _id				UNIQUE

Create Index

testdb.students

Index fields

Name 1 (asc)

Options

Cancel Create Index

MongoDB Compass - localhost:27017/testdb.students

Connect Edit View Collection Help

localhost:27017

Databases students

testdb > students

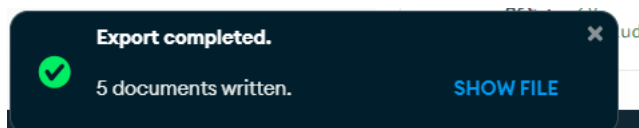
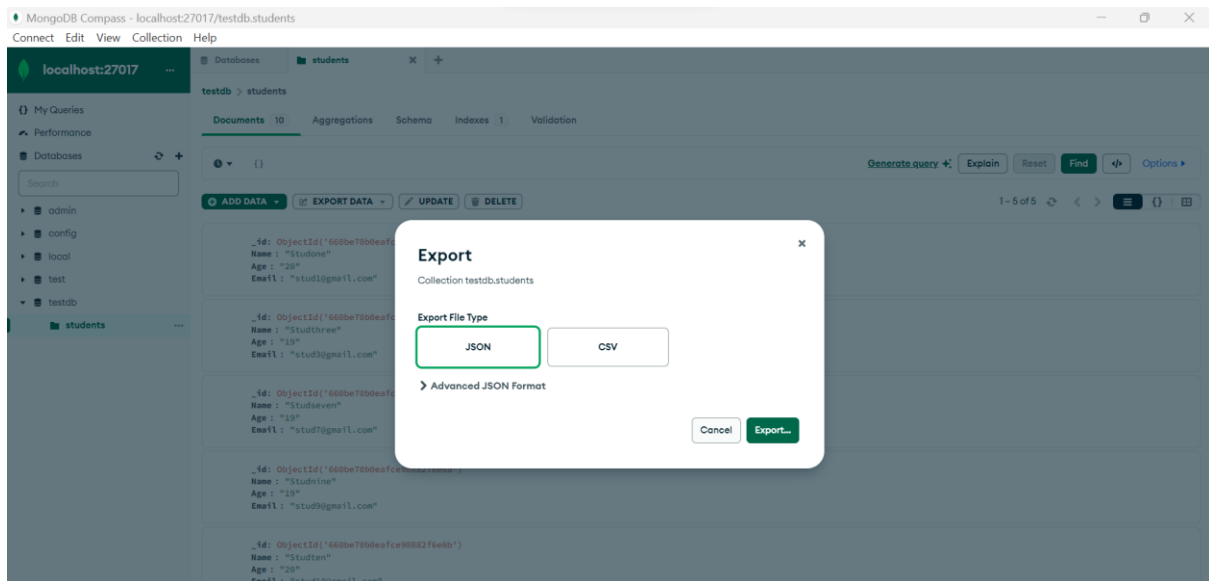
Documents 10 Aggregations Schema Indexes 1 Validation

Create Index Refresh

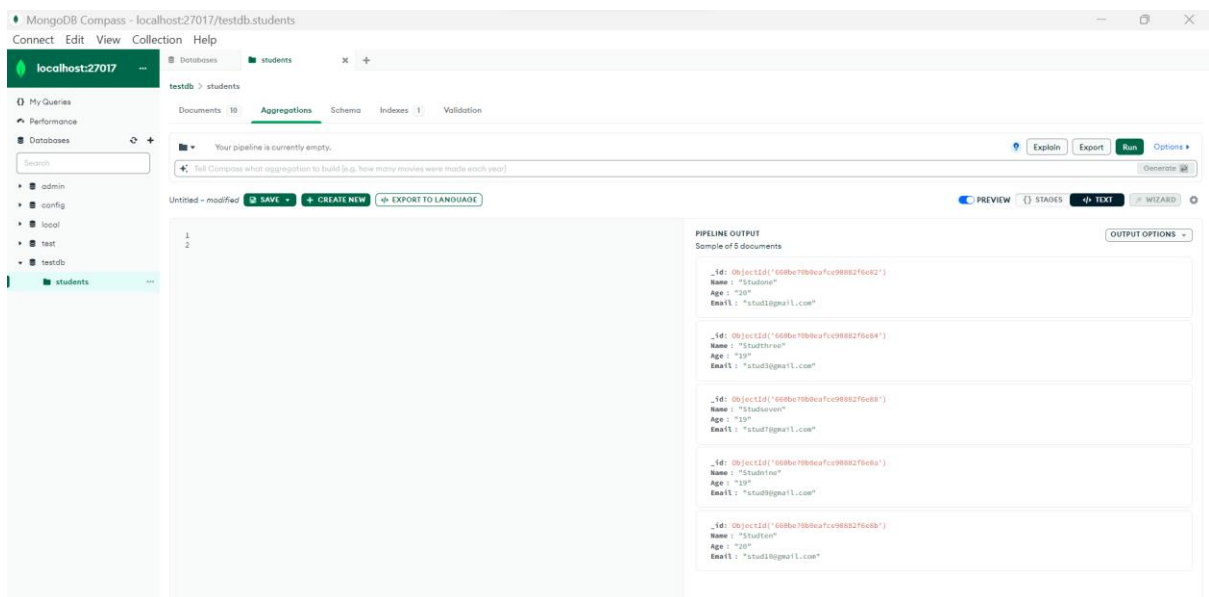
VIEWING INDEXES SEARCH INDEXES

Name and Definition	Type	Size	Usage	Properties
> Name_1	REGULAR	20.5 KB	0 (since Tue Apr 02 2024)	
> _id	REGULAR	36.9 KB	36 (since Tue Apr 02 2024)	UNIQUE

Step 10 =>



Step 11 =>



MongoDB Compass - localhost:27017/testdb.students

Connect Edit View Collection Help

localhost:27017 ...

Databases students X +

testdb > students

Documents 10 Aggregations Schema Indexes 1 Validation

Sort Limit

Tell Compass what aggregation to build (e.g. how many movies were made each year)

Generate

Untitled - modified SAVE + CREATE NEW EXPORT TO LANGUAGE

PREVIEW STAGES TEXT WIZARD

```
1 {
2   {
3     "$sort": { "age": -1 }
4   },
5   {
6     "$limit": 5
7   }
8 }
9
```

PIPELINE OUTPUT

Sample of 5 documents

OUTPUT OPTIONS

Sample of 5 documents

ObjectId('660be70b0eafce9882f6e6a')
Name: "Studnine"
Age: "19"
Email: "stud9@gmail.com"

ObjectId('660be70b0eafce9882f6e6b')
Name: "Studten"
Age: "20"
Email: "stud10@gmail.com"

ObjectId('660be70b0eafce9882f6e64')
Name: "Studthree"
Age: "19"
Email: "stud3@gmail.com"

ObjectId('660be70b0eafce9882f6e62')
Name: "Studone"
Age: "20"
Email: "stud1@gmail.com"

ObjectId('660be70b0eafce9882f6e68')
Name: "Studseven"
Age: "19"
Email: "stud7@gmail.com"

Step 12 =>

MongoDB Compass - localhost:27017/testdb.students

Connect Edit View Collection Help

localhost:27017 ...

Databases students X testdb +

testdb > students

Documents 10 Aggregations Schema Indexes 1 Validation

Create Index Refresh

VIEWING INDEXES SEARCH INDEXES

Name and Definition	Type	Size	Usage	Properties
> _id	REGULAR	36.9 KB	36 (since Tue Apr 02 2024)	UNIQUE
> location_2dsphere	GEOSPATIAL	8.2 KB	0 (since Tue Apr 02 2024)	

Step 13 =>

MongoDB Compass - localhost:27017/testdb.students

Connect Edit View Collection Help

localhost:27017 ...

Databases students X testdb +

testdb > students

Documents 10 Aggregations Schema Indexes 1 Validation

Generate query Reset Analyze Options

This report is based on a sample of 5 documents. Learn more

Looking for data modeling tools? Check out Hacholade Studio.

_id
objectid

Age
string

Email
string

Name
string