

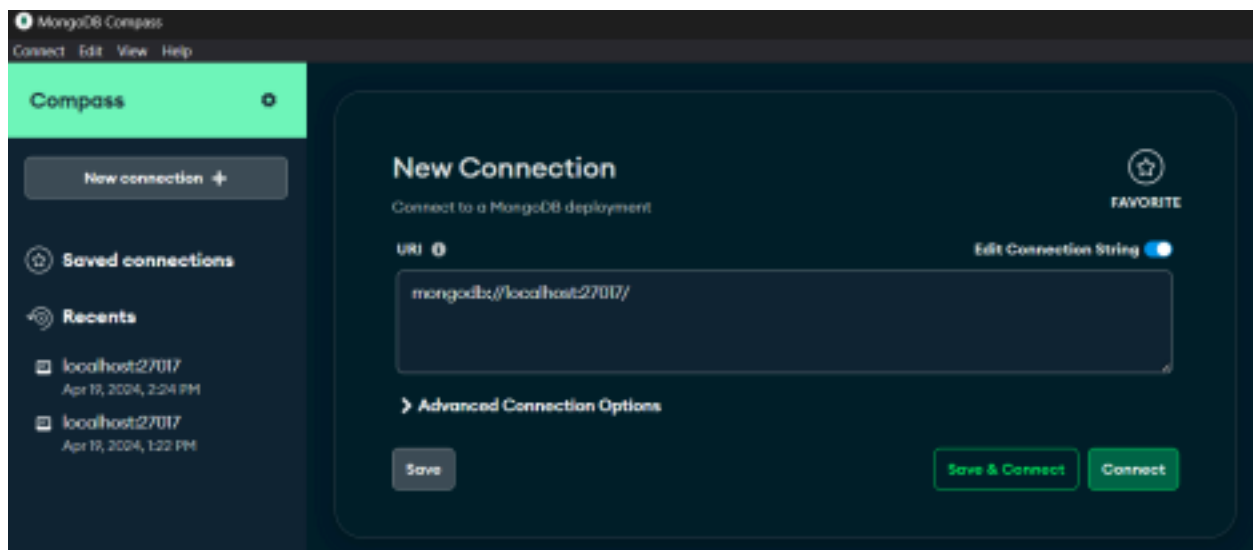
Web Technology

Lab Assignment 9

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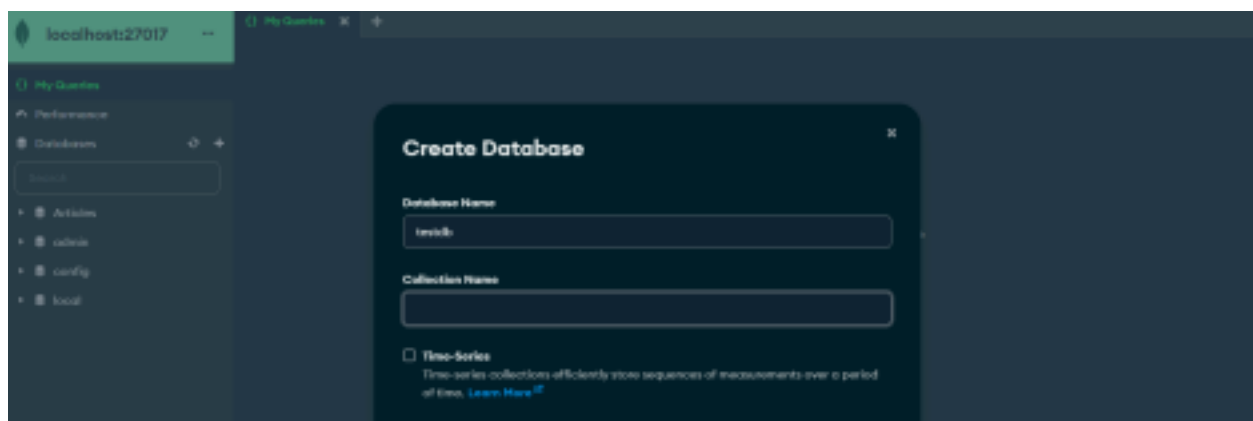
Q1 Connect to a MongoDB server using MongoDB Compass.

Ans



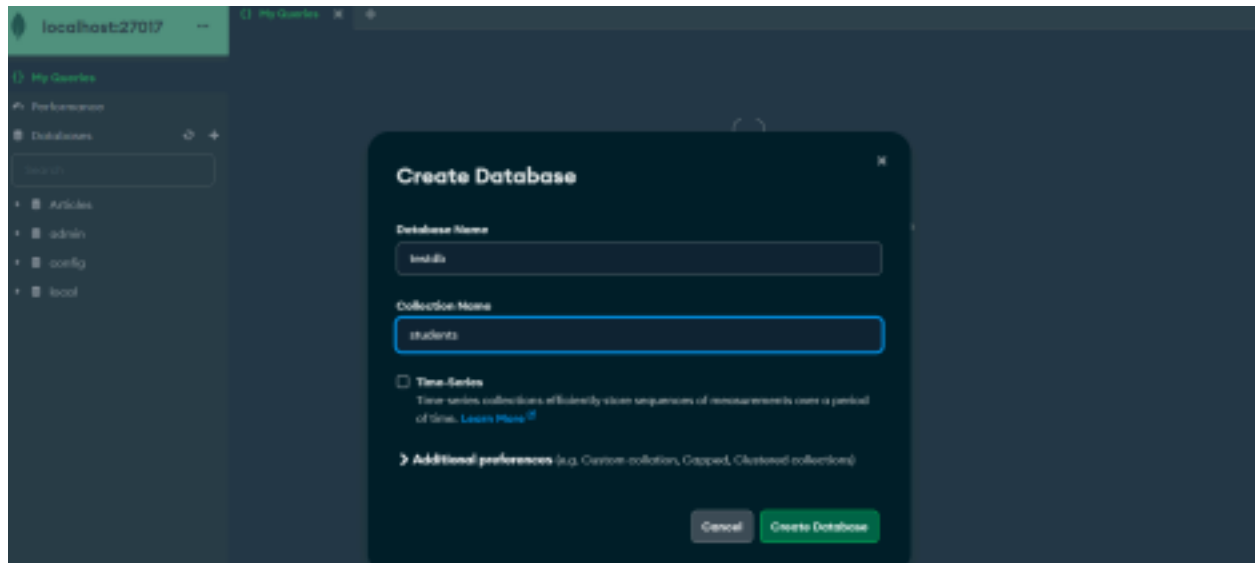
Q2. Create a new database named "testdb" in MongoDB Compass.

Ans



Q3. Create a new collection named "students" in the "testdb" database.

Ans



**Q4. Insert ten documents into the "students" collection with the following fields:
name, age, and email.**

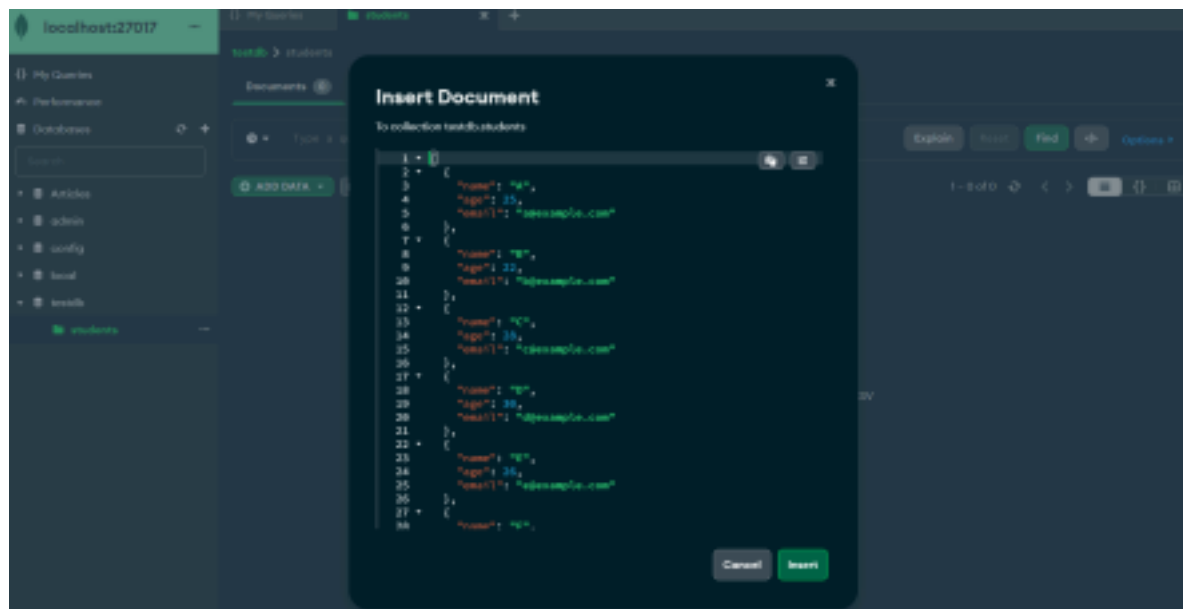
Ans

```
[
  {
    "name": "A",
    "age": 25,
    "email": "a@example.com"
  },
  {
    "name": "B",
    "age": 22,
    "email": "b@example.com"
  },
  {
    "name": "C",
    "age": 28,
    "email": "c@example.com"
  },
  {
    "name": "D",
    "age": 30,
    "email": "d@example.com"
  },
  {
    "name": "E",
    "age": 26,
```

```

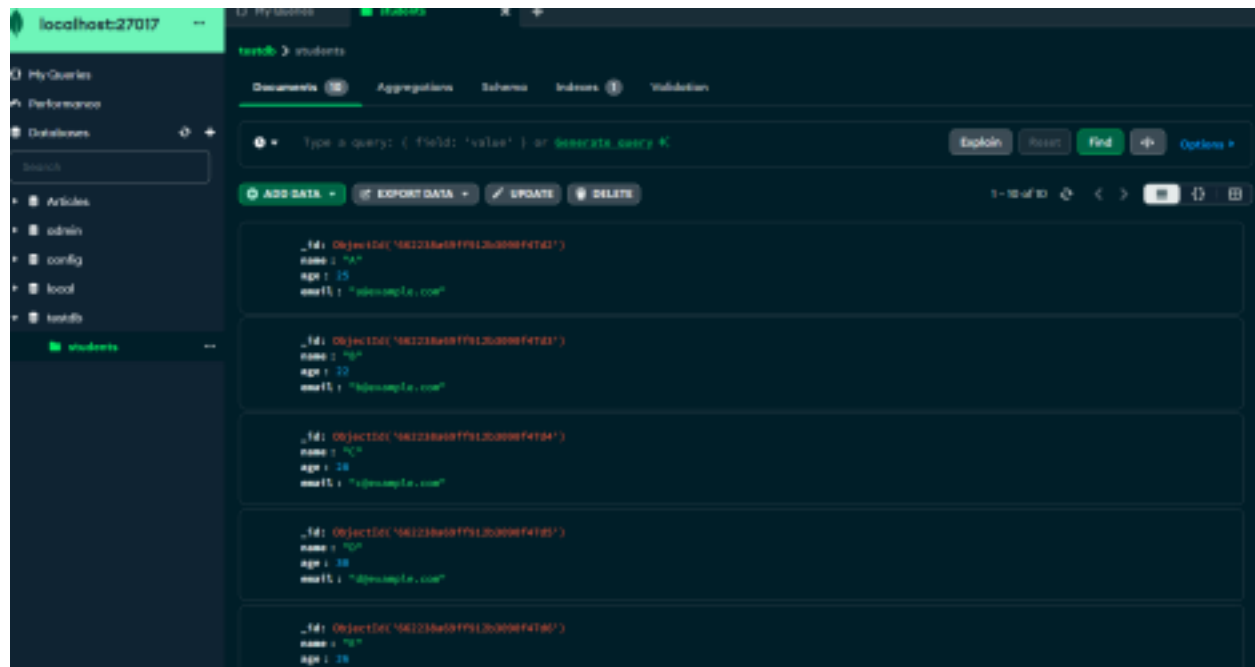
    "email": "e@example.com"
  },
  {
    "name": "F",
    "age": 24,
    "email": "f@example.com"
  },
  {
    "name": "G",
    "age": 27,
    "email": "g@example.com"
  },
  {
    "name": "H",
    "age": 29,
    "email": "h@example.com"
  },
  {
    "name": "I",
    "age": 23,
    "email": "i@example.com"
  },
  {
    "name": "J",
    "age": 31,
    "email": "j@example.com"
  }
]

```



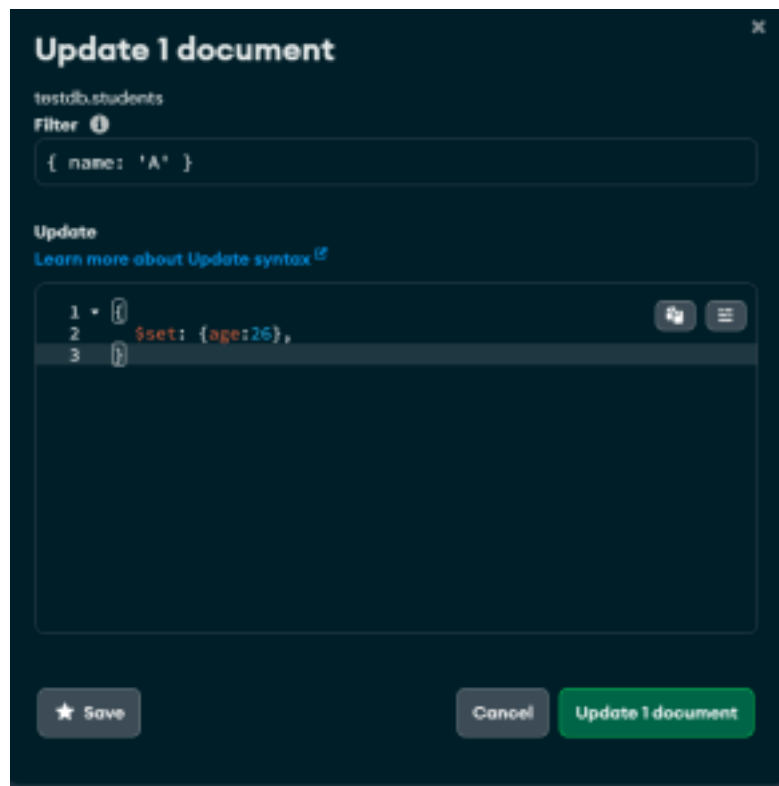
Q5. View the contents of the "students" collection.

Ans



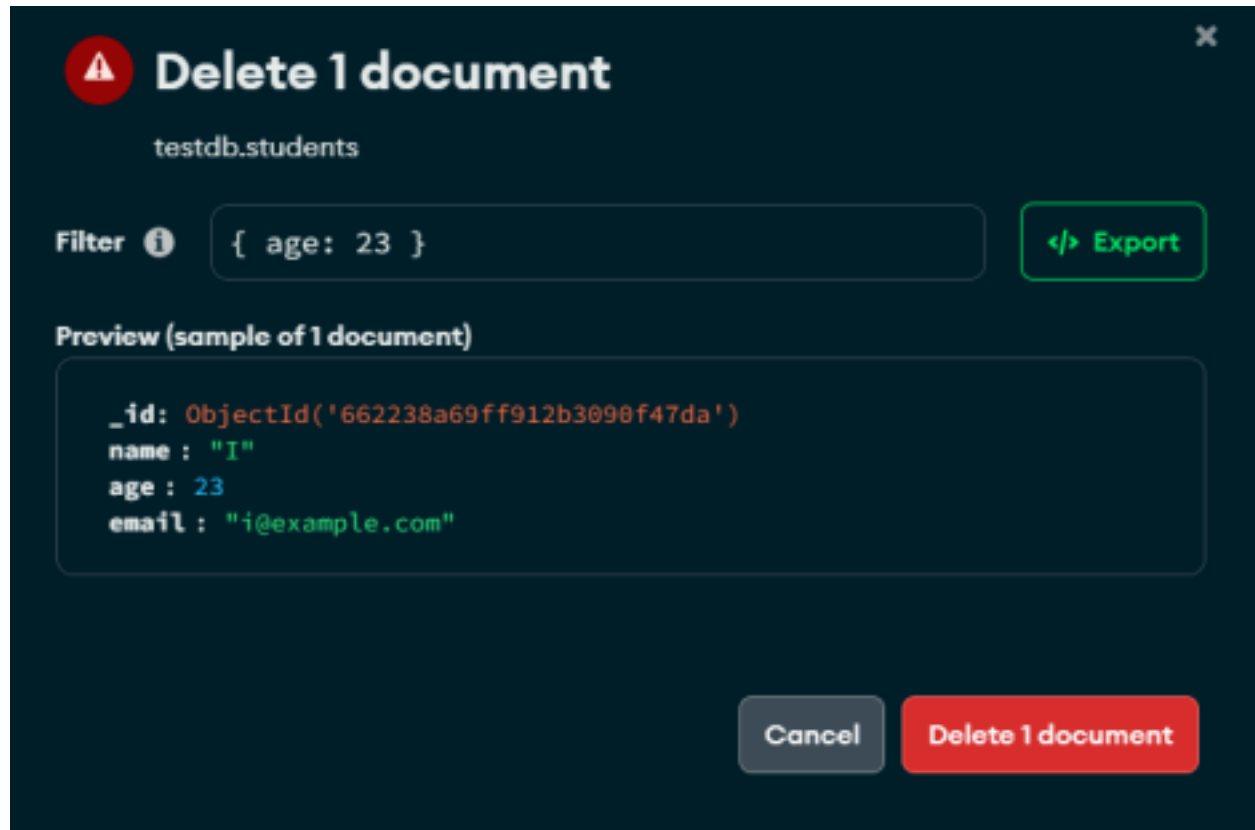
Q6. Update the age of a specific student in the "students" collection.

Ans



Q7. Delete a document from the "students" collection based on a specific condition.

Ans

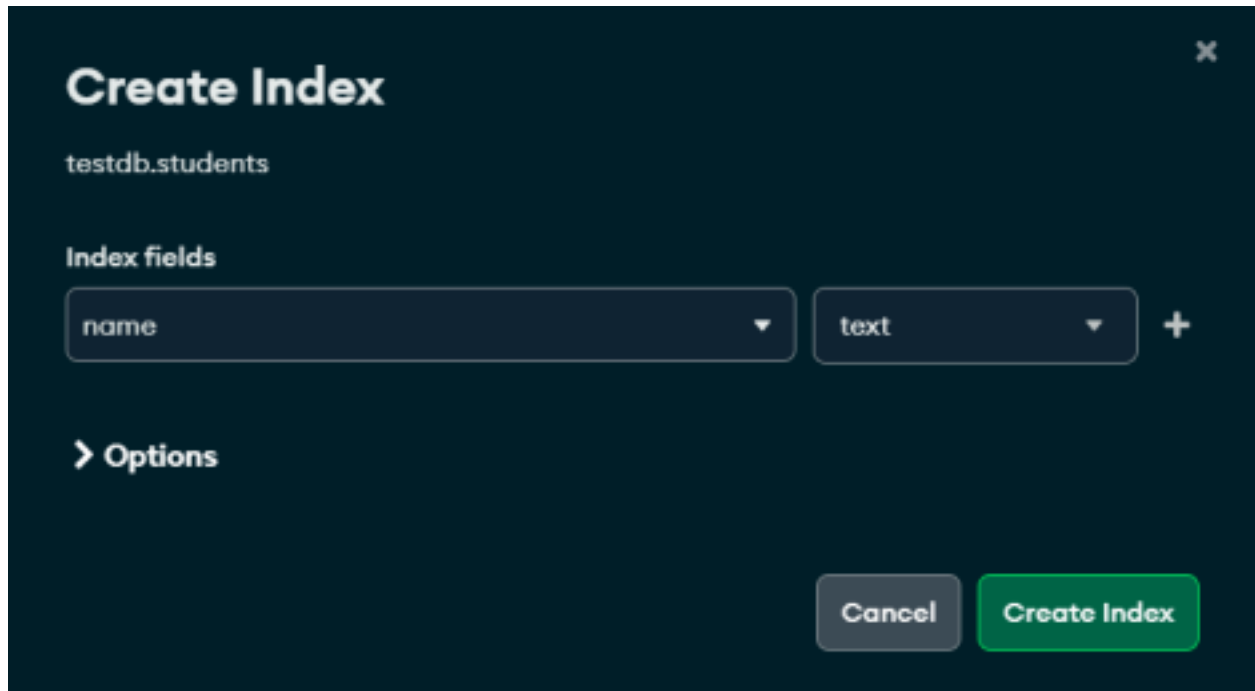


Q8. Use the aggregation pipeline to calculate the average age of all students in the "students" collection.

Ans



Q9. Create an index on the "name" field in the "students" collection. Ans



Create Index ✕

testdb.students

Index fields

name text +

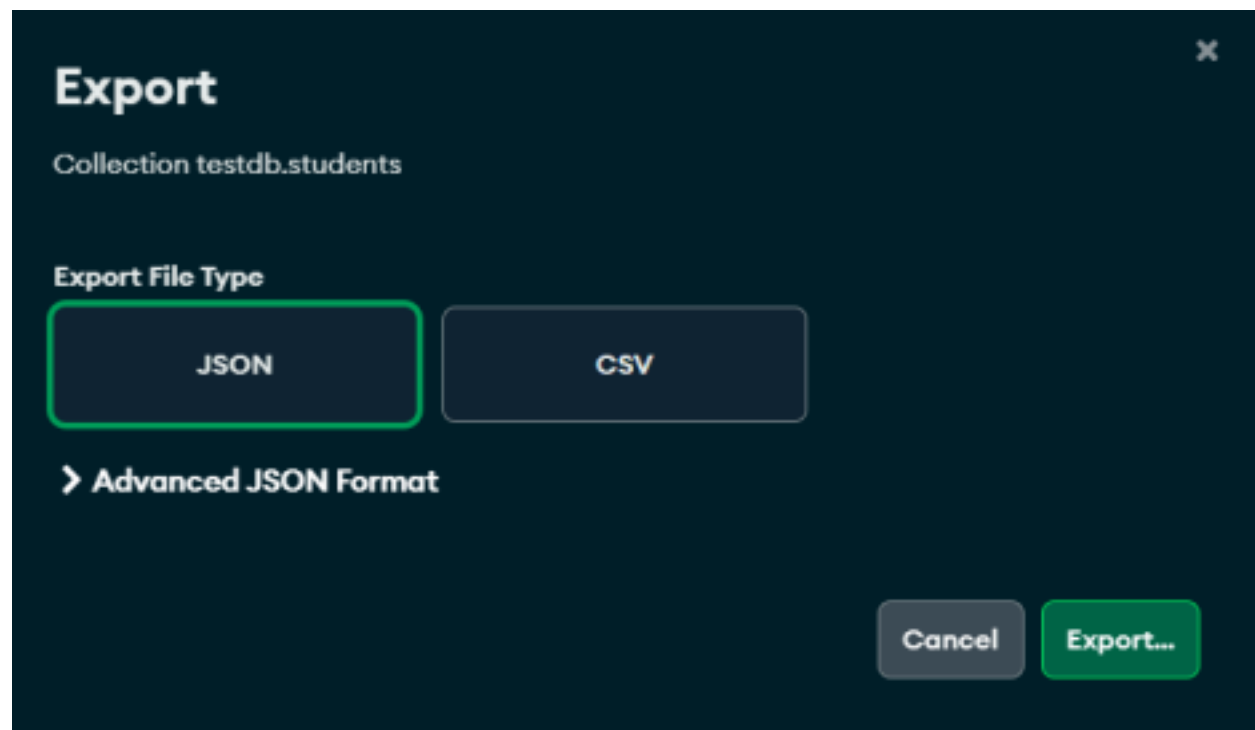
> Options

Cancel Create Index

This is a dark-themed dialog box titled "Create Index" with a close button (✕) in the top right corner. Below the title, the text "testdb.students" is displayed. Under the heading "Index fields", there are two input fields: the first contains "name" and the second contains "text", both with dropdown arrows. A plus sign (+) is to the right of the "text" field. Below this, there is a link "> Options". At the bottom right, there are two buttons: "Cancel" (disabled, grey) and "Create Index" (active, green).

Q10. Export the contents of the "students" collection to a JSON file.

Ans



Export ✕

Collection testdb.students

Export File Type

JSON CSV

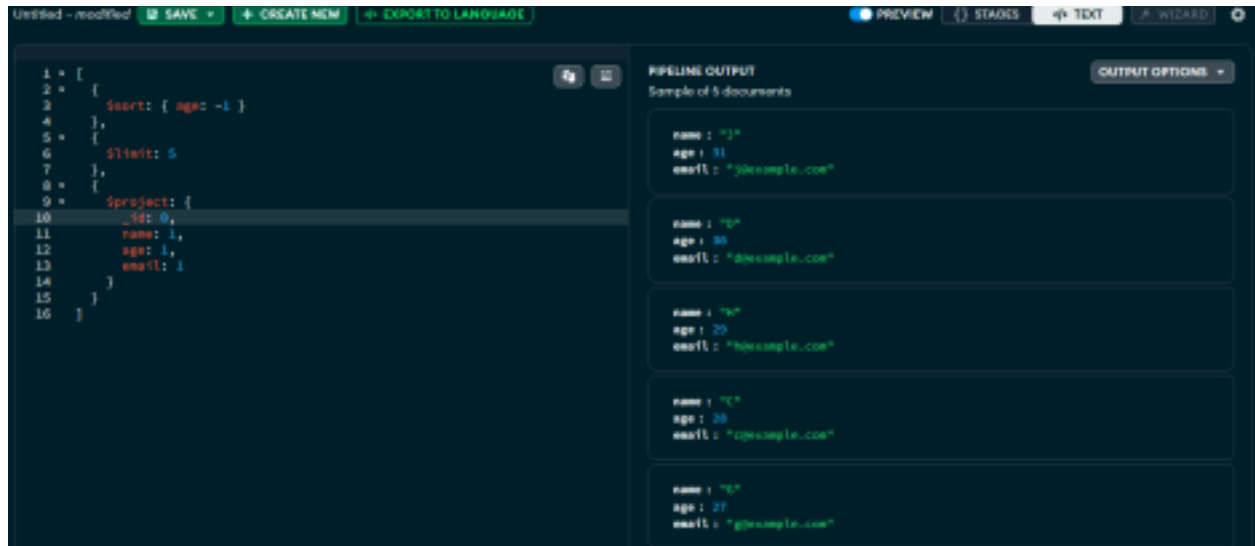
> Advanced JSON Format

Cancel Export...

This is a dark-themed dialog box titled "Export" with a close button (✕) in the top right corner. Below the title, the text "Collection testdb.students" is displayed. Under the heading "Export File Type", there are two buttons: "JSON" (active, green border) and "CSV" (disabled, grey). Below this, there is a link "> Advanced JSON Format". At the bottom right, there are two buttons: "Cancel" (disabled, grey) and "Export..." (active, green).

Q11. Perform a complex aggregation operation to find the top 5 oldest students in the "students" collection.

Ans



Q12. Create a geospatial index on a field representing the location of students.

Ans

Create Index

Refresh

VIEWING

INDEXES

SEARCH INDEXES

Name and Definition	Type	Size	Usage	Properties
> _id_	REGULAR ⓘ	36.9 KB	3 (since Fri Apr 19 2024)	UNIQUE ⓘ
> name_text	TEXT ⓘ	20.5 KB	0 (since Fri Apr 19 2024)	
> students_2dsphere	GEOSPATIAL ⓘ	8.2 KB	0 (since Fri Apr 19 2024)	

Q13. Use MongoDB Compass to visualize the data distribution in the "students" collection.

Ans



Q14. Set up a data validation rule to ensure that documents in the "students" collection must have a non-empty name field. Ans

Documents 9 Aggregations Schema Indexes 2 **Validation**

Validation Action ⓘ Error Validation Level ⓘ Strict

```
1 {
2   "bsonType": "object",
3   "required": ["name"],
4   "properties": {
5     "name": {
6       "bsonType": "string",
7       "minLength": 1
8     }
9   }
10 }
```

Validation modified

Cancel Update