

MongoDB CRUD Operations – Project Report

Task: Task 3 - CRUD Operations with MongoDB

Objective

To understand and perform **CRUD operations (Create, Read, Update, Delete)** using **MongoDB Compass**, focusing on practical data manipulation, filtering, and database management — a fundamental skill in MERN stack development.

Tools Used

- **MongoDB Compass** – GUI for MongoDB operations
 - **MongoDB Community Server** – Local database engine
 - **VS Code** – For reference and note keeping (optional)
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Database & Collection Details

- **Database Name:** crud-task
 - **Collection Name:** classA
 - **Document Structure:**
 - ```
{
```
  - ```
  "name": "veeresh",
```
 - ```
 "roll-no": "BU22CSEN0102281"
```
  - ```
}
```
 - Inserted multiple users manually through MongoDB Compass.
-

☐ CRUD Operations in MongoDB Compass

☐ Create

- Used the **“Insert Document”** feature in Compass to add users manually.
- Inserted at least 5 records with variations in:
 - name
 - roll-no
- **Example:**
- ```
{
```
- ```
  "name": "Veeresh Hedderi",
```
- ```
 "Roll-no": "BU22CSEN0102281"
```
- ```
}
```

● Read

- Used **"Documents" tab** to view all records.
 - Applied **filters** to retrieve specific data:
 - `{"age": { "$gt": 25 }}`
 - `{"role": "admin"}`
 - Used **projections** to view only name and email:
 - `{ "name": 1, "email": 1, "_id": 0 }`
 - Implemented sorting:
 - `{ "age": -1 }` (Descending order)
 - Pagination through **"Limit"** and **"Skip"** fields in Compass.
-

□ Update

- Used **"Edit Document"** in Compass:
 - Changed role from `"user"` to `"admin"`
 - Updated multiple records:
 - Used **Update Many** with:
 - Filter: `{}`
 - Update: `{"$inc": { "age": 1 } }`
-

● Delete

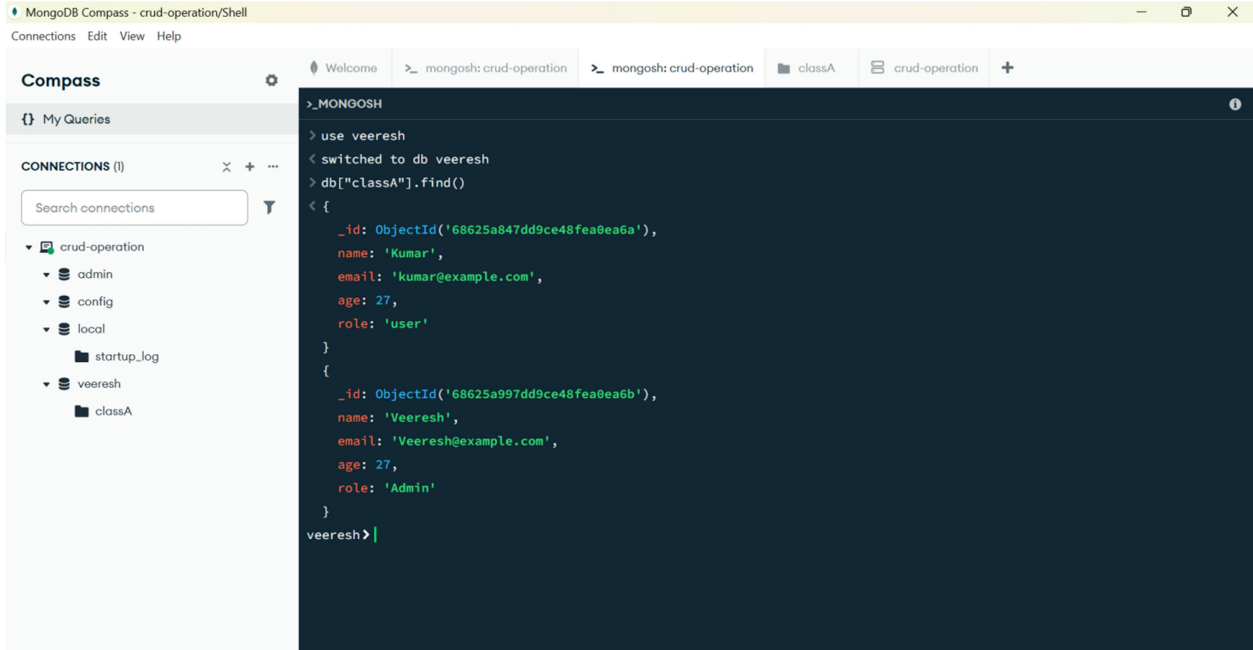
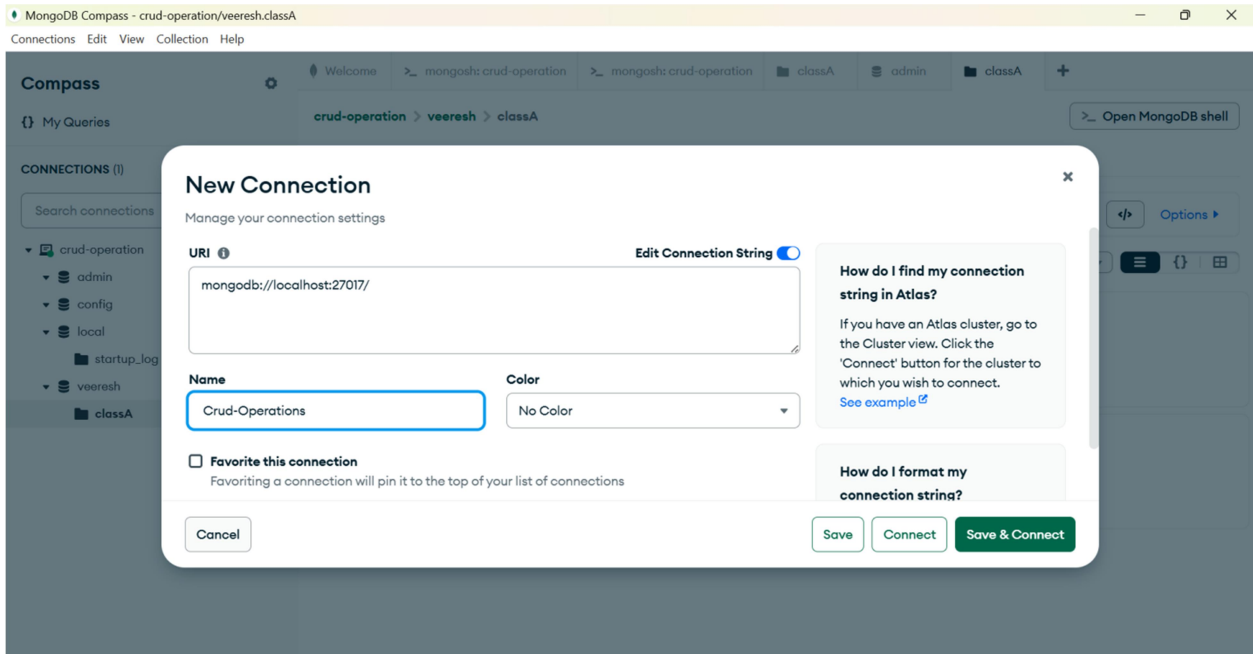
- Deleted a **single document** by clicking the trash icon or via filter:
 - `{ "_id": ObjectId("...") }`
- Deleted **multiple documents**:
 - Used filter: `{ "age": { "$gt": 50 } }`
 - Action: **"Delete Many"**
- Dropped the entire collection using **"Drop Collection"** button (optional if only test data was involved)

💡 Key Learnings

- Gained confidence using **MongoDB Compass** for all CRUD operations.
 - Learned to use **filtering, projections, and sorting** in a GUI interface.
 - Understood how to safely **update and delete** records conditionally.
 - Realized the importance of structured data and consistent schema usage even in NoSQL databases.
 - Identified and removed malformed string documents using `$exists` checks.
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✈ Conclusion

All tasks were completed successfully using **MongoDB Compass**. This hands-on activity provided a strong foundation in data manipulation and reinforced database concepts essential for full-stack development with the MERN stack.



Compass

My Queries

CONNECTIONS (1)

Search connections

- crud-operation
 - admin
 - config
 - local
 - startup_log
 - veeresh
 - classA**

crud-operation > veeresh > classA

Documents 2 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#)

Explain Reset Find Options

ADD DATA EXPORT DATA UPDATE DELETE

25 1 - 2 of 2

```

_id: ObjectId('68625a847dd9ce48fea9ea6a')
name: "Kumar"
email: "kumar@example.com"
age: 27
role: "user"

_id: ObjectId('68625a997dd9ce48fea9ea6b')
name: "Veeresh"
email: "Veeresh@example.com"
age: 27
role: "Admin"

```

Compass

My Queries

CONNECTIONS (1)

Search connections

- crud-operation
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 - classA

crud-operation

Open MongoDB shell Create database Refresh

Sort by Database Name

View

admin	Storage size: 20.48 kB	Collections: 0	Indexes: 1
config	Storage size: 36.86 kB	Collections: 0	Indexes: 2
local	Storage size: 36.86 kB	Collections: 1	Indexes: 1
veeresh	Storage size: 36.86 kB	Collections: 1	Indexes: 1



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