1. **Database setup and collection creation:**

//Create a new database called myDatabase

use myDatabase

>switched to db myDatabase

//Create a collection named users within myDatabase

db.createCollection("users")

>{ ok: 1 }

1. **Document Insertion:**

//Insert documents into the users collection

db.users.insertMany([

{"name":"John","email":"john@example.com","age":25},

{"name":"Alice","email":"alice@example.com","age":35},

{"name":"Bob","email":"bob@example.com","age":30}

])

>{

acknowledged: true,

insertedIds: {

'0': ObjectId('65fbfaaa93a9b3bebae854d4'),

'1': ObjectId('65fbfaaa93a9b3bebae854d5'),

'2': ObjectId('65fbfaaa93a9b3bebae854d6')

}

}

1. **Querying:**

//Query to retrive all users from the users collection

db.users.find()

>{

\_id: ObjectId('65fbfaaa93a9b3bebae854d4'),

name: 'John',

email: 'john@example.com',

age: 25

}

{

\_id: ObjectId('65fbfaaa93a9b3bebae854d5'),

name: 'Alice',

email: 'alice@example.com',

age: 35

}

{

\_id: ObjectId('65fbfaaa93a9b3bebae854d6'),

name: 'Bob',

email: 'bob@example.com',

age: 30

}

//Query to retrieve users with an age greater than or equal to 30

db.users.find({"age":{$gte:30}})

>{

\_id: ObjectId('65fbfaaa93a9b3bebae854d5'),

name: 'Alice',

email: 'alice@example.com',

age: 35

}

{

\_id: ObjectId('65fbfaaa93a9b3bebae854d6'),

name: 'Bob',

email: 'bob@example.com',

age: 30

}

1. **Update Operation:**

//Update the age of a user with a specific email address

db.users.updateOne(

{"email":"john@example.com"},

{$set:{"age":28}}

)

>{

acknowledged: true,

insertedId: null,

matchedCount: 1,

modifiedCount: 1,

upsertedCount: 0

}

1. **Deletion Operation:**

//Delete a user document based on specific email db.users.deleteOne({"email":"alice@example.com"})

>{

acknowledged: true,

deletedCount: 1

}

1. **Index Creation:**

// Index on email field of the users collection

db.users.createIndex({"email":1})

>email\_1