Creating a Database Using MongoDB and Mongosh

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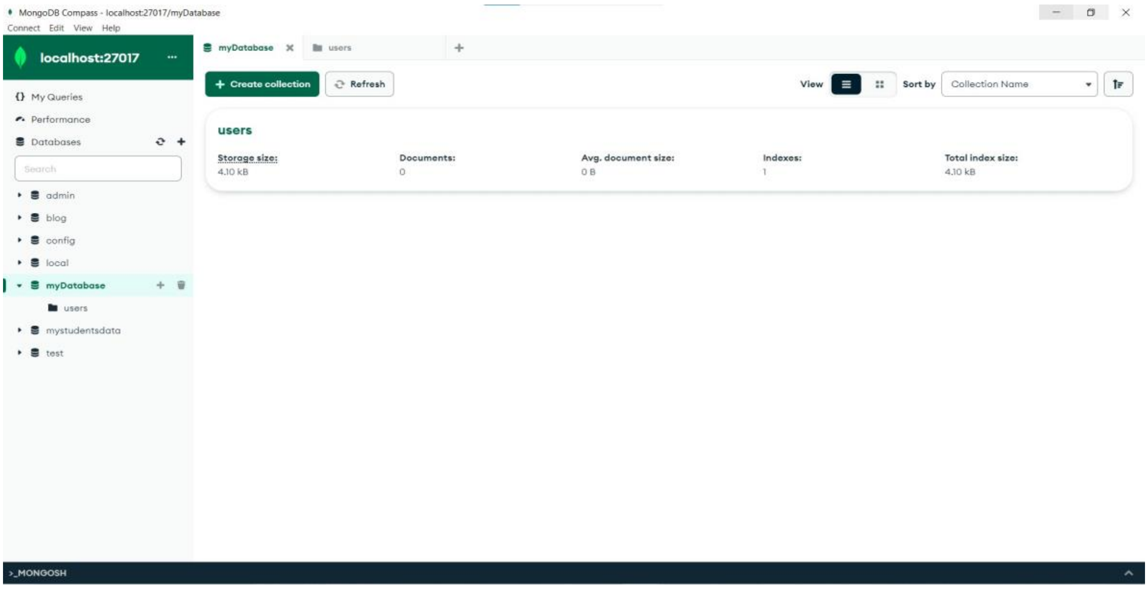
1. Database Setup:

- Open the mongoDB compass
- Create a new MongoDB database: myDatabase

2. Collection Creation:

- Create a collection within database: users

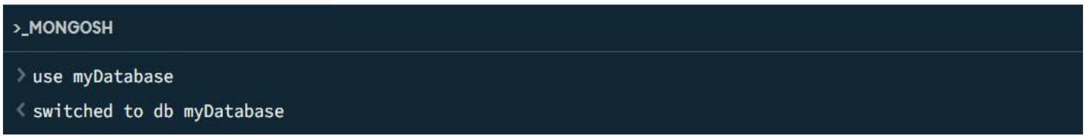


users

Storage size: 4.10 kB
Documents: 0
Avg. document size: 0 B
Indexes: 1
Total index size: 4.10 kB

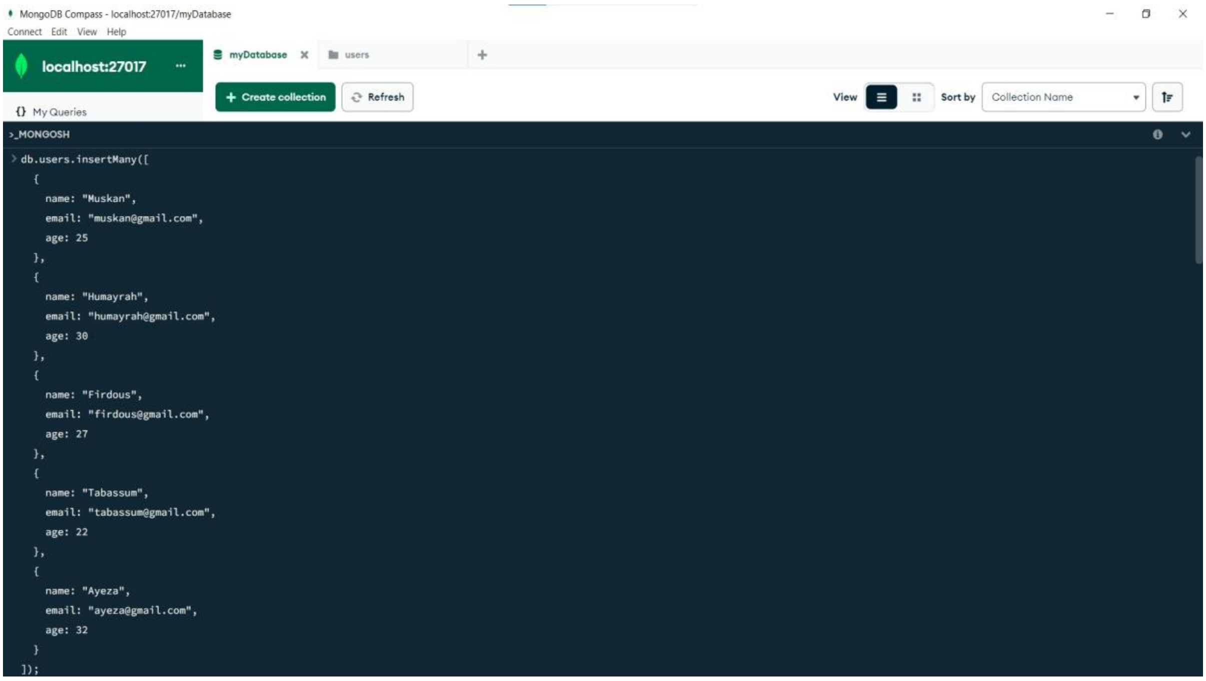
3. Document Insertion:

- Insert five documents into the users collection, each representing a user with fields such as name, email, and age.
- Before inserting into collection "`use db`" command to switch the current database context within MongoDB.



```
> use myDatabase
< switched to db myDatabase
```

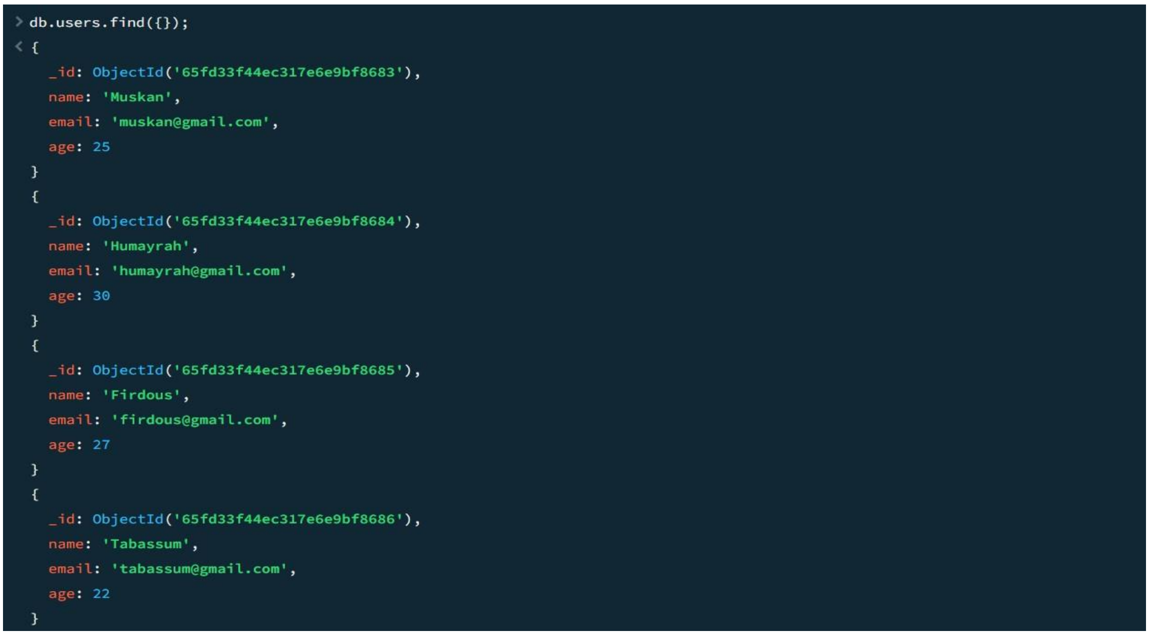
- `db.users.insertMany()` method is used to insert the documents into users collection as shown below.



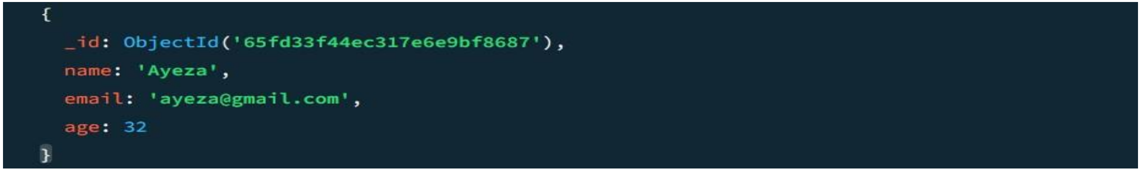
```
> db.users.insertMany([
    {
      name: "Muskan",
      email: "muskan@gmail.com",
      age: 25
    },
    {
      name: "Humayrah",
      email: "humayrah@gmail.com",
      age: 30
    },
    {
      name: "Firdous",
      email: "firdous@gmail.com",
      age: 27
    },
    {
      name: "Tabassum",
      email: "tabassum@gmail.com",
      age: 22
    },
    {
      name: "Ayeza",
      email: "ayeza@gmail.com",
      age: 32
    }
  ]);
```

4. Queries to retrieve:

- To retrieve all the users from the users collection.
  - `db.users.find({ });`

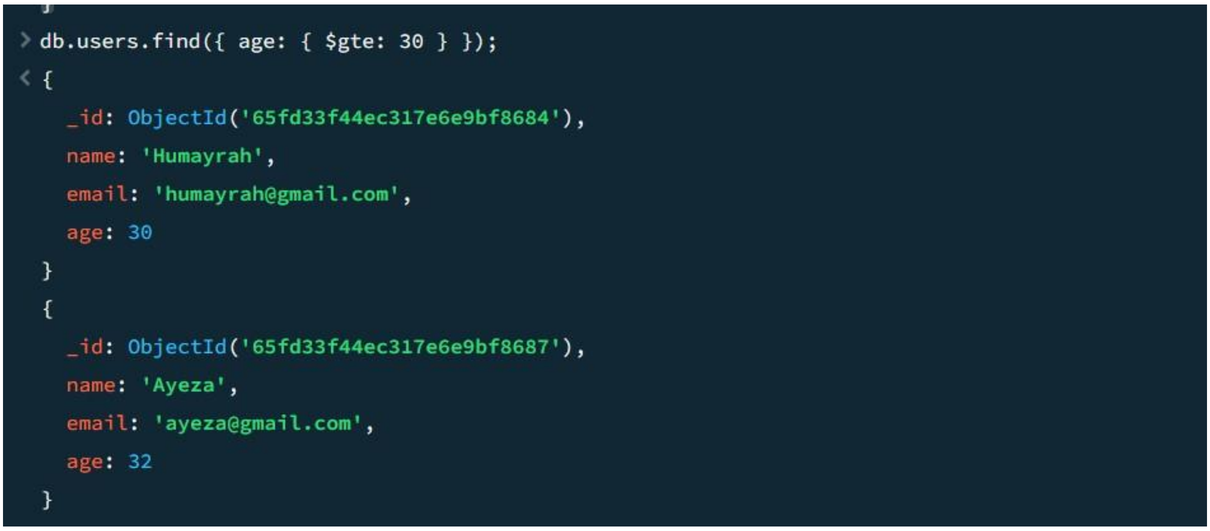


```
> db.users.find({});
< {
    _id: ObjectId('65fd33f44ec317e6e9bf8683'),
    name: 'Muskan',
    email: 'muskan@gmail.com',
    age: 25
  }
  {
    _id: ObjectId('65fd33f44ec317e6e9bf8684'),
    name: 'Humayrah',
    email: 'humayrah@gmail.com',
    age: 30
  }
  {
    _id: ObjectId('65fd33f44ec317e6e9bf8685'),
    name: 'Firdous',
    email: 'firdous@gmail.com',
    age: 27
  }
  {
    _id: ObjectId('65fd33f44ec317e6e9bf8686'),
    name: 'Tabassum',
    email: 'tabassum@gmail.com',
    age: 22
  }
```



```
  {
    _id: ObjectId('65fd33f44ec317e6e9bf8687'),
    name: 'Ayeza',
    email: 'ayeza@gmail.com',
    age: 32
  }
```

- To retrieve the specific users with an age greater than or equal to 30
    - `db.users.find({ age: { $gte: 30 } });`



```
> db.users.find({ age: { $gte: 30 } });
< {
    _id: ObjectId('65fd33f44ec317e6e9bf8684'),
    name: 'Humayrah',
    email: 'humayrah@gmail.com',
    age: 30
  }
  {
    _id: ObjectId('65fd33f44ec317e6e9bf8687'),
    name: 'Ayeza',
    email: 'ayeza@gmail.com',
    age: 32
  }
```

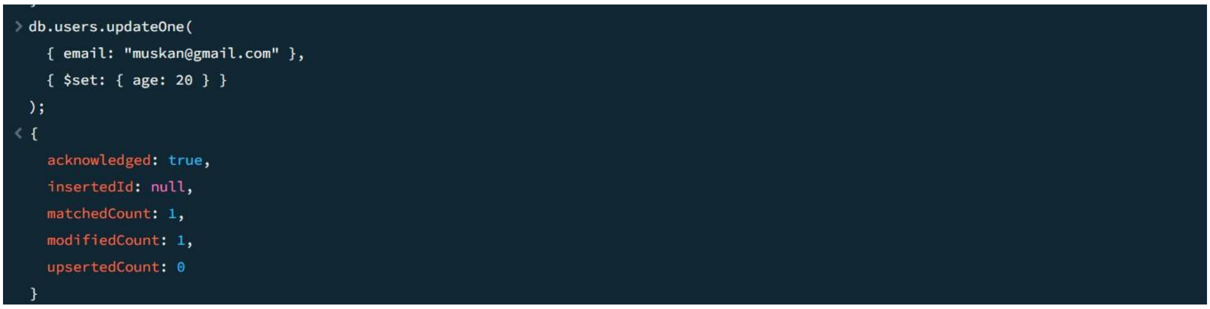
5. **Update Operation:**

- To update the age of a user with a specific email address in MongoDB, use the updateOne() method.
    - Db.users.updateOne(

      { email: "muskan@gmail.com" },

      { $set: { age: 20 } }

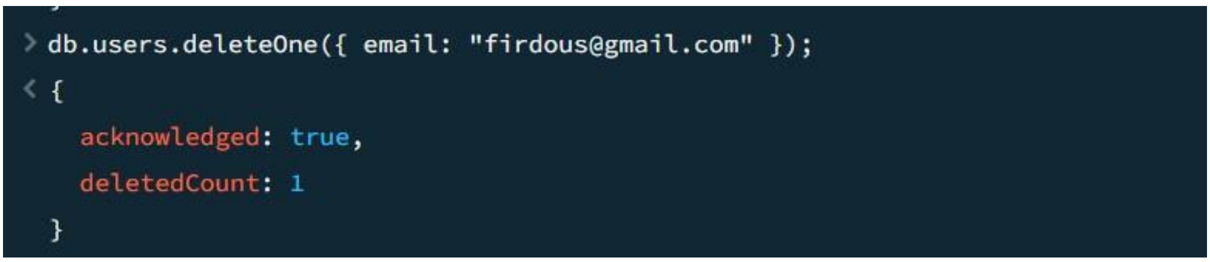
      );



```
> db.users.updateOne(
    { email: "muskan@gmail.com" },
    { $set: { age: 20 } }
  );
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
  }
```

6. **Deletion Operation**:

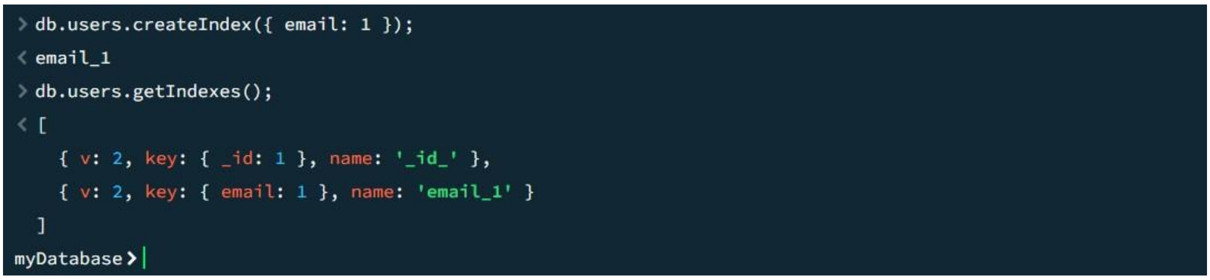
- To delete the user document based on a specific email address in MongoDB, you can use the deleteOne() method.
    - `db.users.deleteOne({email: firdous@gmail.com});`



```
> db.users.deleteOne({ email: "firdous@gmail.com" });
< {
    acknowledged: true,
    deletedCount: 1
  }
```

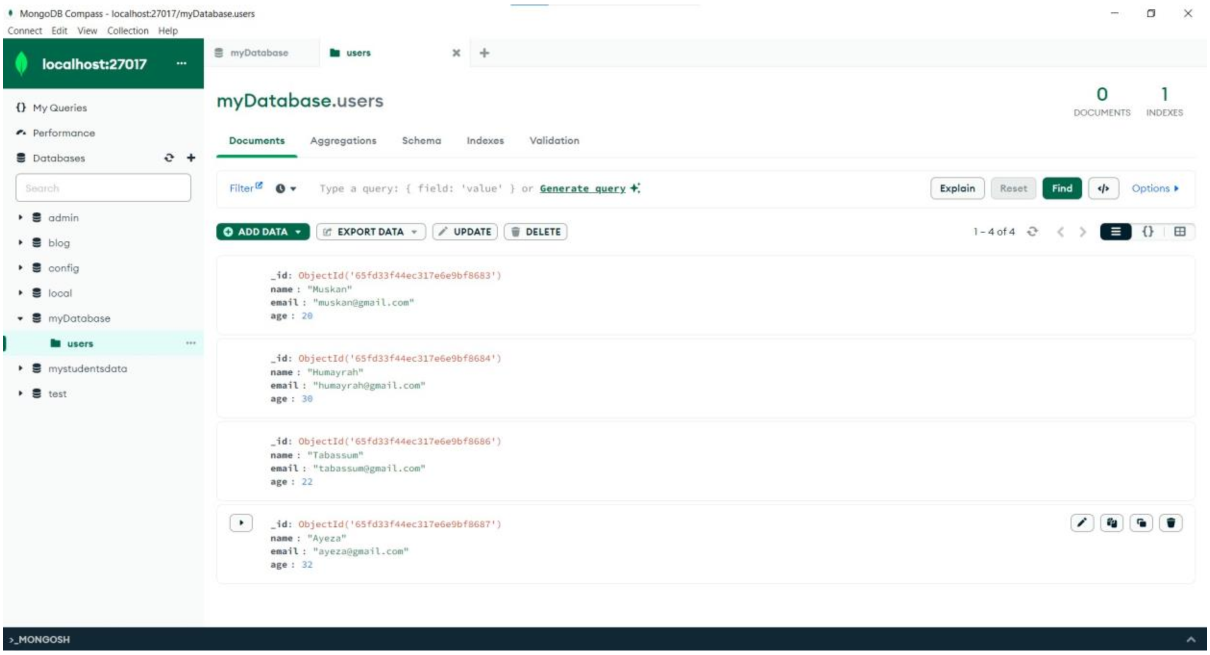
7. Index Creation:

- To create an index on the email field of the users collection in MongoDB, use the db.users.createIndex() method.
    - ○ `db.users.createIndex({ email: 1 });`



```
> db.users.createIndex({ email: 1 });
< email_1
> db.users.getIndexes();
< [
    { v: 2, key: { _id: 1 }, name: '_id_' },
    { v: 2, key: { email: 1 }, name: 'email_1' }
  ]
myDatabase >
```

Final Outcome:

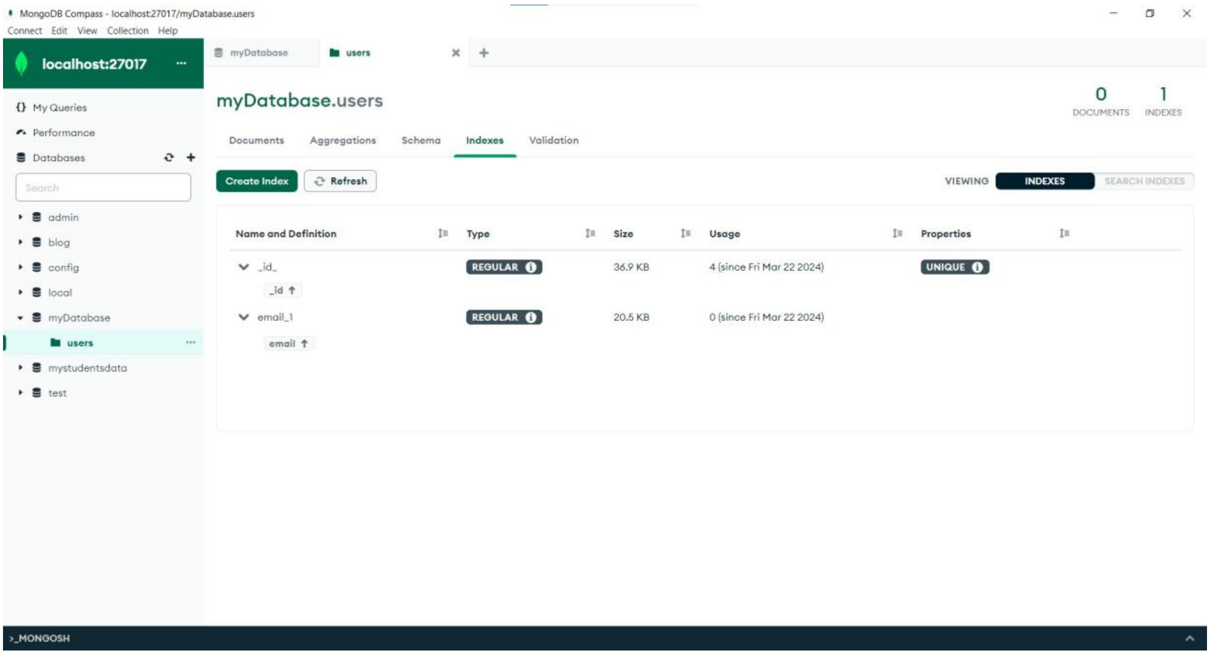


```
_id: ObjectId('65fd33f44ec317e6e9bf8683')
name : "Muskan"
email : "muskan@gmail.com"
age : 20

_id: ObjectId('65fd33f44ec317e6e9bf8684')
name : "Humayrah"
email : "humayrah@gmail.com"
age : 30

_id: ObjectId('65fd33f44ec317e6e9bf8686')
name : "Tabassum"
email : "tabassum@gmail.com"
age : 22

_id: ObjectId('65fd33f44ec317e6e9bf8687')
name : "Ayeza"
email : "ayeza@gmail.com"
age : 32
```



myDatabase.users

0 DOCUMENTS 1 INDEXES

Name and Definition	Type	Size	Usage	Properties
_id_ _id ↑	REGULAR ⓘ	36.9 KB	4 (since Fri Mar 22 2024)	UNIQUE ⓘ
email_1 email ↑	REGULAR ⓘ	20.5 KB	0 (since Fri Mar 22 2024)	