

Question 7

Install an Open-Source NoSQL Data base MongoDB & perform basic CRUD(Create, Read, Update & Delete) operations. Execute MongoDB basic Queries using CRUD operations.

Solution

Step 1: Install MongoDB

- 1. Download MongoDB Community Edition:**
 - Go to the [MongoDB Download Center](https://fastdl.mongodb.org/windows/mongodb-windows-x86_64-7.0.11-signed.msi).
https://fastdl.mongodb.org/windows/mongodb-windows-x86_64-7.0.11-signed.msi
 - Select your operating system and download the installer.
- 2. Run the Installer:**
 - Open the downloaded file and follow the installation instructions.
 - Choose the "Complete" setup type.
 - Make sure "Install MongoDB Compass" is checked.
- 3. Finish Installation:**
 - Complete the installation process and ensure MongoDB and MongoDB Compass are installed.

Step 2: Open MongoDB Compass

- 1. Launch MongoDB Compass:**
 - Open MongoDB Compass from your applications or start menu.
- 2. Connect to the MongoDB Server:**
 - MongoDB Compass should automatically detect the running MongoDB instance.
 - If not, use the connection string `mongodb://localhost:27017` to connect.

Step 3: Create a Database and Collection

- 1. Create a Database:**
 - In MongoDB Compass, click on the "Create Database" button.
 - Enter a database name (e.g., `myDatabase`) and a collection name (e.g., `myCollection`).
 - Click "Create Database".

Step 4: Perform CRUD Operations

Create (Insert) Documents

- 1. Insert a Document:**
 - Open the collection `myCollection` in your `myDatabase`.
 - Click on the "Insert Document" button.
 - Enter the JSON document you want to insert.

- For example:

```
{
  "name": "John Doe",
  "age": 30,
  "email": "john.doe@example.com"
}
```

- Click "Insert".

Read (Query) Documents

1. Query Documents:

- In the collection view, click on the "Filter" field.
- Enter your query in JSON format to filter documents. For example, to find all documents where the `name` is "John Doe":

```
{
  "name": "John Doe"
}
```

- Press "Enter" to execute the query.

Update Documents

1. Update a Document:

- Find the document you want to update using a query.
- Click on the "Update" button next to the document.
- Enter the updated document in JSON format. For example, to update the age:

```
{
  "$set": {
    "age": 31
  }
}
```

- Click "Update".

Delete Documents

1. Delete a Document:

- Find the document you want to delete using a query.
- Click on the "Delete" button next to the document.
- Confirm the deletion.

Step 5: Basic MongoDB Queries

Here are some basic queries you can execute using MongoDB Compass:

1. **Find All Documents:**

- Leave the filter field empty and press "Enter".

2. **Find Documents with a Specific Field:**

- Filter by a specific field, for example:

```
{  
  "age": 30  
}
```

3. **Find Documents with a Field Greater Than a Value:**

- Use a comparison operator:

```
{  
  "age": { "$gt": 25 }  
}
```

4. **Find Documents with a Field Less Than a Value:**

- Use a comparison operator:

```
{  
  "age": { "$lt": 35 }  
}
```

5. **Find Documents with a Field in a Range:**

- Use comparison operators:

```
{  
  "age": { "$gte": 25, "$lte": 35 }  
}
```

6. **Find Documents Containing a Specific Value in an Array:**

- Filter by array contents:

```
{  
  "tags": "technology"  
}
```