Full Stack Development with MERN

Database Design and Development Report

Date	13-07-2024
Team ID	SWTID1720075141
Project Name	House Hunt using Mern
Maximum Marks	5 Marks

Project Title: House Hunt

Date: 13-07-2024

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Objective

The objective of this report is to outline the database design and implementation details for the House Hunt project, including schema design and database management system (DBMS) integration.

Technologies Used

- **Database Management System (DBMS):** MongoDB
- **Object-Document Mapper (ODM):** Mongoose

Design the Database Schema

The database schema is designed to accommodate the following entities and relationships:

1. Users

- Attributes: _id, name, email, password, createdAt, updatedAt

2. Posts

- Attributes: _id, title, content, author (references User), createdAt, updatedAt, address, price, city, bedroom, bathroom, shortlists, postDetails.

3. Comments

- Attributes: _id, utilities, income, size, restaurant, post (references Post)

4. Shortlists

Attributes: _id, user (references User), post (references Post), createdAt

Implement the Database using MongoDB

The MongoDB database is implemented with the following collections and structures:

Database Name: househunt

1. Collection: users

- Schema:

```
{
"_id": "ObjectId",
"email": "String",
"username": "String",
"password": "String",
"createdAt": "Date"
}
```

2. Collection: posts

   - Schema:

```
{
"_id": "ObjectId",
  "title": "String",
  "price": "Int",
  "content": ["String"],
  "address": "String",
  "author": "String",
  "city": "String",
  "bedroom": "Int",
  "bathroom": "Int",
  "createdAt": "Date",
  "userId": "ObjectId",
  "postDetails": "ObjectId",
  " shortlists ": ["ObjectId"]
}
```

3. Collection: comments

  - Schema:

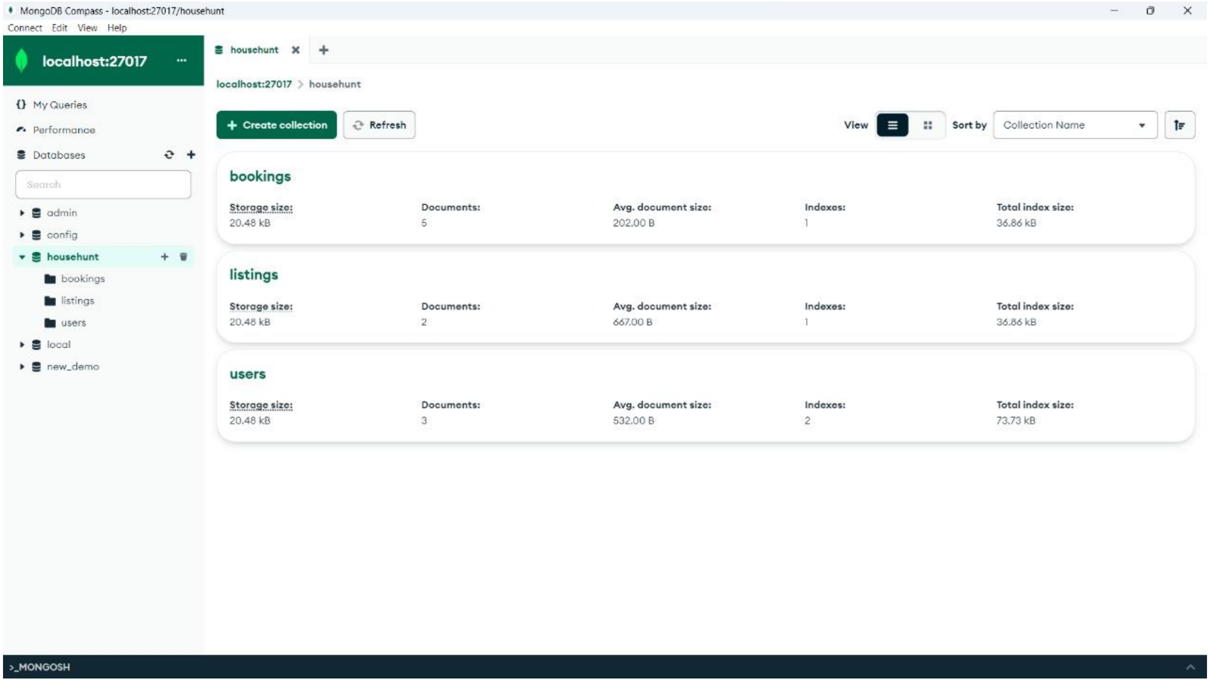
```
   {
  "_id": "ObjectId",
  "utilities": "String",
  "income": "String",
  "size": "Int",
  "restaurant": "Int",
  "postId": "ObjectId"
}

```

4. Collection: savedPosts - Schema:

```
{
"_id": "ObjectId",
"userId": "ObjectId",
"postId": "ObjectId",
"createdAt": "Date"
}
```

Integration with Backend

- Database connection using MongoDB compass and the local host



Collection	Storage size:	Documents:	Avg. document size:	Indexes:	Total index size:
bookings	20.48 kB	5	202.00 B	1	36.86 kB
listings	20.48 kB	2	667.00 B	1	36.86 kB
users	20.48 kB	3	532.00 B	2	73.73 kB

- The backend APIs interact with MongoDB using Mongoose ODM Key interactions include:
  - User Management: CRUD operations for users like adding new users, deleting account/users, changing Email
  - Post Management: CRUD operations for posts, with user authentication like login using valid credentials, adding Images etc
  - Comment Management: CRUD operations for comments associated with posts that are updated by owners which help in knowing more about the house and the amenities nearby.