NoSQL Databases (MongoDB) : 30804406

Assignment : 2

A) For this assignment, you are required to build a project where you will use MongoDB as the database. The project must implement the following tasks:

Perform all CRUD operations:

Create: Insert new data into the database.

Read: Retrieve data from the database.

Update: Modify existing data.

Delete: Remove data from the database.

Use MongoDB Operators:

Comparison Operators: Use operators like $eq, $gt, $lt, etc., to compare data.

Logical Operators: Apply operators such as $and, $or, $not to filter data based on conditions.

Cursor Methods: Use methods like .find(), .limit(), .skip(), etc., to manipulate query results.

Element Operators: Use operators like $exists, $type to filter documents based on field types and existence.

Projection: Use projection to select specific fields to return in the result set.

Aggregation Framework: Use MongoDB's aggregation operators like $group, $match, $sort, and others to perform data aggregation tasks.

Establish Relationships Between Collections:

One-to-One: Set up a relationship where one document in a collection is linked to one document in another collection.

One-to-Many: Set up a relationship where one document in a collection is linked to multiple documents in another collection.

Many-to-Many: Set up a relationship where multiple documents in one collection are related to multiple documents in another collection.

****Make sure to follow the above requirements while performing the operations.**

B) You are tasked with managing a shopping cart system for an e-commerce website using Redis. You need to use Redis commands to manage the data.

_id (String): //unique identifier

cart (Object): //Contains all information related to the user's cart.

products (Array of Objects): //An array of products in the cart.

Each product object contains:

product_id (String): The unique identifier for the product (e.g., 123).

quantity (Number): The quantity of the product in the cart.

price (Number): The price of each individual product.

1) Add a product with product ID 123 and a quantity of 2 to a user's cart with user ID user_001.
2) Update the quantity of the product with ID 123 in the cart of user user_001 to 3.
3) Retrieve a list of all products in the cart of user user_001, including the product ID, quantity, and price.
4) Remove the product with ID 123 from the cart of user user_001
5) How can you check if a user has a cart in Redis?