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PBSL lab

Assignment-01 (Group B)

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Title: MongoDB Queries

Problem Statement: Design & develop MongoDB queries using CRUD operations.
(Use CRUD operations, SAVE method, logical operators)

Objectives:

1) Understand the concept of binary JSON format
2) Understand the concept of mongoDB document model.

Software & hardware requirements

MongoDB (updated to latest version)
Windows-10 PC 64-bit, Core is 8th Gen CPU, 4-cores, 8GB RAM & 512 GB SSD storage

Theory:

1) MongoDB is a cross-platform document oriented database that provides, high performance, high availibility, & easy scalability.
MongoDB works on a concept of collection & documents.

2) Database:
It is a physical container for collection. Each database gets its own set of files on the system.
A single mongoDB server typically has multiple databases.

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3) Collection:

It is a group of mongoDB documents. A collection exist within a single database.
Collection do not enforce a schema.
Document within a collection can have different fields.

4) Document:

A document is a set of key-value pairs.
documents have dynamic schema.

Relationship of RDBMS terminology with MongoDB:

RDBMS	MongoDB
Database	Database
Table	Collection
Tuple	Document
Column	field
Table join	Embedded Documents
Primary key	Primary key (provided by mongoDB itself)

Create Collection:

syntax: db.createCollection(name, options)
eg db.createCollection("mycollection")

READ:

syntax: db.collection_name.find()
eg db.students.find()
→ outputs all documents from students collection.
→ you can specify/modify find & filter out results

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UPDATE:

1) MongoDB's update() & save() methods are used to update document from collection.
2) Update() method updates the values in the existing document while save() method replaces the existing document with the document passed in save() method.

Syntax:

```
db.collection_name.update(selection_criteria, updated_data)
db.collection_name.save({_id:ObjectId(), new_data})
```

DELETE:

1) MongoDB's remove() method is used to remove a document from the collection.

Syntax:

```
db.collection_name.remove(deletion_criteria)
```

Logical operators OR & AND

1) In the find method, if you pass multiple keys by separating them by ',' the mongoDB treats it as AND condition.

Syntax: `db.collection_name.find({key1:val1, key2:val2})`

2) To query documents based on OR condition use the following syntax:

```
db.collection_name.({$or:[{key1:val1},{key2:val2}]})
```

Test cases:

for code & outputs I have attached separate

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file.

Conclusion:

Thus, in this assignment I learned about CRUD operations in mongoDB.