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★ COMPUTER LABORATORY IV : BIG DATA ANALYTICS ★

◎ ASSIGNMENT - 1 ◎

★ TITLE : CRUD operations using MongoDB.

★ PROBLEM STATEMENT :

- MongoDB :: Installation and Creation of database and Collection CRUD Document: Insert, Query, Update and Delete Document.

★ OBJECTIVES :

- Install and setup MongoDB on your system.
- Create a database and collection in MongoDB.
- Perform basic CRUD operations (Insert, Query, Update, and Delete) on documents in MongoDB collection.

★ PRE-REQUISITE :

- Basic knowledge of databases and their types.
- Familiarity with command-line operations
- Understanding of JSON format, as MongoDB stores data in Binary JSON.

★ THEORY :

① MongoDB →

- MongoDB is a NoSQL; document-oriented database designed to store and manage unstructured or semi-structured data. Unlike traditional relational databases, MongoDB uses collections and documents instead of tables and rows.

● Document : A record in MongoDB, stored in BSON format.

● Collection : A group of documents, analogous to a table in relational databases.

● Database : A container for collections.

- MongoDB is highly scalable, flexible, and suitable for handling large volumes of data, making it a popular choice for big data applications.

② CRUD operations →

- CRUD stands for Create, Read, Update and Delete, which are the four basic operations performed on any database. (structured or unstructured).

① Create [INSERT] →

- Adding new documents to a collection.

- E.g. `db.collectionName.insert({ name: "John", age: 30, city: "New York" });`

② Read [QUERY] →

- Retrieving documents from a collection.

- E.g. `db.collectionName.find({ city: "New York" });`

③ Update →

- Modifying existing documents in a collection.

- E.g. `db.collectionName.update({ name: "John" }, { $set: { age: 31 } });`

④ Delete →

- Removing documents from a collection.

- E.g. `db.collectionName.remove({ name: "John" });`

★ CONCLUSION:

- Hence, we successfully installed the MongoDB database and performed the basic CRUD operations after creating database.