

Assignment B1

31332

TITLE:-

Study of Open Source NO SQL Database : MongoDB
(Installation, Basic CRUD operations, Execution)

PROBLEM STATEMENT:-

Implement database with suitable example using MongoDB and implement study of Open Source NO SQL Database MongoDB.

OBJECTIVE:-

Understand the concept of No SQL database. Understand the concept of MongoDB with CRUD operations. Understand the basic installation and administrative commands of MongoDB.

OUTCOME:-

To be able to implement the commands.

To be able to implement database in MongoDB.

S/W and H/W Reqs.

Mongo DB, 64 bit Linux/Windows OS

i5 processor

THEORY :-

Mongo DB is an open source document database that provides high performance, high availability and automatic scaling.

Document Database

A record in Mongo DB is a document which is a data structure composed of field and value pairs. Mongo DB documents are similar to JSON objects. The values of fields may include other documents, arrays and arrays of documents.

CRUD Operations

Create Operations.

Create or insert operations add new documents to a collection. If collection does not currently exist, insert separates will create the collection.

Method to insert-

`db.collection.insertOne()`

`db.collection.insertMany()`

Read Operations.

Read operations retrieve documents from a collection, ie. query a collection for documents.

Following is the method to read

`db.collection.find()`

update Operations.

update operations modify existing documents in a collection
Following are the methods to update

- db.collection.updateOne()
- db.collection.updateMany()
- db.collection.replaceOne()

Delete operations.

Delete operations remove documents from a collection
following are the methods to delete

- db.collection.deleteOne()
- db.collection.deleteMany()

TEST CASES

Description	Input	Output
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INSERT db.student.insert

({rn: 1, name: "Howard",
Dept: "Comp"})

db.student.insert

({rn: 2, name: "Bernie",
Dept: "IT"})

db.student.insert

({rn: 3, name: "Raj",
Dept: "ENTC"})

READ

db.student.find()

-id: ObjectId ("..."), m: 1,
 name: "Howard", Dept: "Comp"
 -id: ObjectId ("..."), m: 2
 name: "Bonnie", Dept: "IT"
 -id: ObjectId ("..."), m: 3
 name: "Raj", Dept: "ENTC"

SUCCESS

UPDATE

db.student.update
 ({rn: 3}, {\$set:
 {Dept: "IT"})
 db.student.find()

-id: ObjectId ("..."), m: 1
 name = "Howard", Dept = "Comp"
 -id: ObjectId ("..."), m: 2
 name = "Bonnie", Dept = "IT"
 -id: ObjectId ("..."), m: 3
 name: "Raj" → Dept = "ENTC"

SUCCESS

READ

db.student.find
({m: {\$gt: 2}})

-id: ObjectId ("..."), m: 3,
 name: "Howard", Dept = "IT"

→ ↑ →

DELETE db.student.remove
({rn: 3})

-id: ObjectId ("..."), m: 1
 name = "Howard", Dept = "Comp"

→ ↑ →

db.student.find()

-id: ObjectId ("..."), m: 2
 name = "Bonnie", Dept = "IT"

CONCLUSION:-

MongoDB was studied and understood. CRUD operations were studied and implemented on the database.