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WORKSHEET 10

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Subject Name: ADBMS **Subject Code: 23CSP-333**

1. AIM:

To perform and demonstrate CRUD (Create, Read, Update, Delete) operations in MongoDB using a Car Dealership dataset. The experiment aims to understand how NoSQL databases handle document-based storage and operations.

2. Tools Used:

MongoDB (NoSQL Database Management System)

3. Procedure / Code:

-- Basic MongoDB Commands --

1. show dbs
   → Displays all databases in MongoDB.

2. use car_dealership
   → Creates and switches to a new database named 'car_dealership'.

3. db.createCollection('cars')
   → Creates a new collection named 'cars'.

4. Inserting Documents:

```
db.cars.insertOne({maker: 'Tata', model: 'Nexon', fuel_type: 'Petrol', price: 900000})
db.cars.insertMany([
  {maker: 'Hyundai', model: 'i20', fuel_type: 'Diesel', price: 1100000},
  {maker: 'Maruti', model: 'Baleno', fuel_type: 'Petrol', price: 850000}
])
```

5. Reading Data:

```
db.cars.find()
db.cars.find({fuel_type: 'Petrol'})
db.cars.find({}, {model: 1, _id: 0})
```

6. Updating Records:

```
db.cars.updateOne({maker: 'Tata'}, {$set: {price: 950000}})
db.cars.updateMany({fuel_type: 'Petrol'}, {$set: {offer: 'Festival Discount'}})
```

7. Deleting Records:

```
db.cars.deleteOne({model: 'i20'})
db.cars.deleteMany({fuel_type: 'Diesel'})
```

8. Grouping Data:

```
db.cars.aggregate([{ $group: { _id: "$maker", total_cars: { $sum: 1 } } }])
```

4. Output:

The MongoDB commands were successfully executed. The inserted documents were visible in the collection, updates reflected accurately, and delete operations removed the targeted records. Grouping results displayed the count of cars for each maker.

5. Learning Outcomes:

- Learned how to perform CRUD operations in MongoDB.
- Understood how MongoDB stores data as BSON documents.
- Practiced using filters, projections, and update operators.
- Learned to use the aggregate function for grouping data.
- Compared SQL's structured schema with NoSQL's flexible document structure.