**1. Creating a Database and Inserting a Collection**

package connection;

import org.bson.Document;

import com.mongodb.client.\*;

public class CreateDBAlt {

public static void main(String[] args) {

try (MongoClient mongoClient = MongoClients.create("mongodb://localhost:27017")) {

MongoDatabase database = mongoClient.getDatabase("schoolRecords");

database.createCollection("studentProfiles");

MongoCollection<Document> collection = database.getCollection("studentProfiles");

Document doc = new Document("name", "John Doe").append("rollNumber", "A101");

collection.insertOne(doc);

System.out.println("Database and collection created successfully.");

System.out.println("Databases present:");

for (String dbName : mongoClient.listDatabaseNames()) {

System.out.println("- " + dbName);

}

}

}

}

**2. Dropping the Database**

package connection;

import com.mongodb.client.\*;

public class DropDBAlt {

public static void main(String[] args) {

try (MongoClient mongoClient = MongoClients.create("mongodb://localhost:27017")) {

MongoDatabase database = mongoClient.getDatabase("schoolRecords");

database.drop();

System.out.println("Database 'schoolRecords' has been dropped.");

System.out.println("Databases available now:");

for (String dbName : mongoClient.listDatabaseNames()) {

System.out.println("- " + dbName);

}

}

}

}

**3. Creating and Displaying Collections**

package connection;

import com.mongodb.client.\*;

public class CreateCollectionAlt {

public static void main(String[] args) {

try (MongoClient mongoClient = MongoClients.create("mongodb://localhost:27017")) {

MongoDatabase database = mongoClient.getDatabase("universityDB");

database.createCollection("courseList");

System.out.println("Collections in 'universityDB':");

for (String col : database.listCollectionNames()) {

System.out.println("- " + col);

}

}

}

}

**4. Inserting Multiple Documents**

package connection;

import org.bson.Document;

import com.mongodb.client.\*;

import java.util.\*;

public class InsertStudents {

public static void main(String[] args) {

try (MongoClient mongoClient = MongoClients.create("mongodb://localhost:27017")) {

MongoDatabase database = mongoClient.getDatabase("universityDB");

MongoCollection<Document> collection = database.getCollection("courseList");

List<Document> courses = new ArrayList<>();

courses.add(new Document("courseName", "Data Structures").append("credits", 4));

courses.add(new Document("courseName", "Operating Systems").append("credits", 3));

courses.add(new Document("courseName", "Database Systems").append("credits", 3));

collection.insertMany(courses);

System.out.println("Courses inserted into 'courseList'.");

}

}

}

**5. Retrieving Documents (All and Filtered)**

package connection;

import org.bson.Document;

import com.mongodb.client.\*;

public class RetrieveCourses {

public static void main(String[] args) {

try (MongoClient mongoClient = MongoClients.create("mongodb://localhost:27017")) {

MongoDatabase database = mongoClient.getDatabase("universityDB");

MongoCollection<Document> collection = database.getCollection("courseList");

System.out.println("All Courses:");

for (Document doc : collection.find()) {

System.out.println(doc.toJson());

}

System.out.println("\nFiltered Course (courseName = 'Data Structures'):");

for (Document doc : collection.find(new Document("courseName", "Data Structures"))) {

System.out.println(doc.toJson());

}

}

}

}

**6. Inserting and Filtering Based on User Input**

package connection;

import org.bson.Document;

import com.mongodb.client.\*;

import com.mongodb.client.model.Filters;

import java.util.Scanner;

public class InsertAndSearchStudent {

public static void main(String[] args) {

try (Scanner scanner = new Scanner(System.in);

MongoClient mongoClient = MongoClients.create("mongodb://localhost:27017")) {

MongoDatabase database = mongoClient.getDatabase("studentDB");

MongoCollection<Document> collection = database.getCollection("records");

System.out.print("Enter Student Name: ");

String name = scanner.nextLine();

System.out.print("Enter Department: ");

String dept = scanner.nextLine();

System.out.print("Enter Year: ");

int year = scanner.nextInt();

scanner.nextLine(); // flush newline

Document student = new Document("name", name)

.append("department", dept)

.append("year", year);

collection.insertOne(student);

System.out.println("Student record inserted.");

System.out.print("Filter by field (e.g., department): ");

String filterField = scanner.nextLine();

System.out.print("Enter value to search: ");

String filterValue = scanner.nextLine();

System.out.println("Filtered Records:");

for (Document doc : collection.find(Filters.eq(filterField, filterValue))) {

System.out.println(doc.toJson());

}

}

}

}