import com.mongodb.ErrorCategory;  
import com.mongodb.MongoClient;  
import com.mongodb.MongoClientURI;  
import com.mongodb.MongoWriteException;  
import com.mongodb.client.MongoCollection;  
import com.mongodb.client.MongoCursor;  
import com.mongodb.client.MongoDatabase;  
import com.mongodb.client.model.Filters;  
import org.bson.Document;  
  
import java.util.ArrayList;  
import java.util.Scanner;  
  
public class MongoJava {  
  
 public void Display\_mongo(){  
 // Connect to MongoDB Server on localhost, port 27017 (default)  
 final MongoClient mongoClient = new MongoClient(new MongoClientURI("mongodb://localhost:27017"));  
  
 final MongoDatabase database = mongoClient.getDatabase("assi4connectivity");  
  
 //Insert a document into the collection.  
 MongoCollection<Document> collection = database.getCollection("student");  
  
 try (MongoCursor< Document > cur = collection.find().iterator()) {  
  
 while (cur.hasNext()) {  
  
 var doc = cur.next();  
 var users = new ArrayList< >(doc.values());  
  
 System.*out*.printf("%s: %s %s %s %n", users.get(1), users.get(2),users.get(3),users.get(4));  
 }  
 }  
 }  
  
 public void update\_mongo(int roll1,String newsub,int newmark){  
  
 final MongoClient mongoClient = new MongoClient(new MongoClientURI("mongodb://localhost:27017"));  
  
 final MongoDatabase database = mongoClient.getDatabase("assi4connectivity");  
  
 MongoCollection<Document> collection = database.getCollection("student");  
  
  
 collection.updateOne(new Document("Roll\_no", roll1),  
 new Document("$set", new Document("Subject", newsub)));  
  
 collection.updateOne(new Document("Roll\_no", roll1),  
 new Document("$set" , new Document("marks",newmark)));  
  
 }  
  
 public void search\_mongo(int id1){  
 // Connect to MongoDB Server on localhost, port 27017 (default)  
 final MongoClient mongoClient = new MongoClient(new MongoClientURI("mongodb://localhost:27017"));  
  
 final MongoDatabase database = mongoClient.getDatabase("assi4connectivity");  
  
 //Insert a document into the collection.  
 MongoCollection<Document> collection = database.getCollection("student");  
  
 try (MongoCursor<Document> cur = collection.find(Filters.*eq*("Roll\_no",id1)).iterator()) {  
  
 while (cur.hasNext()) {  
  
 var doc = cur.next();  
 var users = new ArrayList< >(doc.values());  
  
 System.*out*.printf("%s: %s %s %s %n", users.get(1), users.get(2),users.get(3),users.get(4));  
 }  
 }  
 }  
  
 public void delete\_mongo(int id1){  
 // Connect to MongoDB Server on localhost, port 27017 (default)  
 final MongoClient mongoClient = new MongoClient(new MongoClientURI("mongodb://localhost:27017"));  
  
 final MongoDatabase database = mongoClient.getDatabase("assi4connectivity");  
  
 MongoCollection<Document> collection = database.getCollection("student");  
  
 try {  
 collection.deleteMany(Filters.*gte*("Roll\_no", id1));  
 System.*out*.println("Deleted successfully");  
 }  
 catch (Exception e) {  
 e.printStackTrace();  
 }  
 }  
  
 public void insert\_mongo(String name1,int roll1, String sub1, int mark1){  
  
 final MongoClient mongoClient = new MongoClient(new MongoClientURI("mongodb://localhost:27017"));  
  
 final MongoDatabase database = mongoClient.getDatabase("assi4connectivity");  
  
 MongoCollection<Document> collection = database.getCollection("student");  
  
 Document Student1 =new Document();  
 Student1.append("Name",name1)  
 .append("Roll\_no",roll1)  
 .append("Subject",sub1)  
 .append("marks",mark1);  
  
 try {  
 collection.insertOne(Student1);  
 System.*out*.println("Successfully inserted documents. \n");  
 } catch (MongoWriteException mwe) {  
 if (mwe.getError().getCategory().equals(ErrorCategory.*DUPLICATE\_KEY*)) {  
 System.*out*.println("Document with that id already exists");  
 }  
 }  
  
 }  
  
  
 public static void main(String[] args) {  
 Scanner sc=new Scanner(System.*in*);  
 try {  
  
 // Connect to MongoDB Server on localhost, port 27017 (default)  
 final MongoClient mongoClient = new MongoClient(new MongoClientURI("mongodb://localhost:27017"));  
  
 // Connect to Database "assi4connectivity"  
 final MongoDatabase database = mongoClient.getDatabase("assi4connectivity");  
 System.*out*.println("Successful database connection established. \n");  
  
 //Insert a document into the "student" collection.  
 MongoCollection<Document> collection = database.getCollection("student");  
  
 // Delete the collection and start fresh  
 collection.drop();  
 MongoJava obj1=new MongoJava();  
  
  
 int ch;  
 String n1,c1;  
 int id1,id2;  
 do  
 {  
 System.*out*.println("--------------------------------------------");  
 System.*out*.println(" 1.Display all Records");  
 System.*out*.println(" 2.Insert new Record");  
 System.*out*.println(" 3.Update old Record");  
 System.*out*.println(" 4.Delete Record");  
 System.*out*.println(" 5.Search Record");  
 System.*out*.println(" 6.Number of collection");  
 System.*out*.println(" 55.Exit");  
 System.*out*.println("--------------------------------------------");  
 System.*out*.println(" Enter your Choice");  
 ch=sc.nextInt();  
 switch(ch){  
 case 1: obj1.Display\_mongo();  
 break;  
  
 case 2:  
 System.*out*.println("Enter Student Name: ");  
 n1=sc.next();  
 System.*out*.println("Enter Student Rollno: ");  
 id1=sc.nextInt();  
 System.*out*.println("Enter Student Subject: ");  
 c1=sc.next();  
 System.*out*.println("Enter Student Marks: ");  
 id2=sc.nextInt();  
 obj1.insert\_mongo(n1,id1,c1,id2);  
 break;  
  
 case 3:  
 System.*out*.println("Enter Student Rollno: ");  
 id1=sc.nextInt();  
 System.*out*.println("Enter Student new Subject: ");  
 c1=sc.next();  
 System.*out*.println("Enter Student new Marks: ");  
 id2=sc.nextInt();  
 obj1.update\_mongo(id1,c1,id2);  
 break;  
  
 case 4:  
 System.*out*.println("Enter Student Rollno: ");  
 id1=sc.nextInt();  
 obj1.delete\_mongo(id1);  
 break;  
 case 5:  
 System.*out*.println("Enter Student Rollno: ");  
 id1=sc.nextInt();  
 obj1.search\_mongo(id1);  
 break;  
  
 case 6:  
 System.*out*.println("Collection size: " + collection.count() + " documents. \n");  
 break;  
  
 }  
 }while(ch!=55);  
  
 } catch (Exception exception) {  
 System.*err*.println(exception.getClass().getName() + ": " + exception.getMessage());  
 }  
 }  
}