import java.util.Scanner;

import java.util.ArrayList;

import java.util.List;

// methods interface

interface crudInterface{

// get student by id

public Student getStudentById(Long id);

public String deleteStudent(Long id);

public Student updateStudent(Student student);

// sort students

public List<Student> allStudents();

}

// student class

class Student{

// id, name, gpa, mobile, gmail

private Long id;

private String name;

private String mail;

private Double gpa;

private Long mobile;

public Student(Long id, String name, String mail, Double gpa, Long mobile){

this.id = id;

this.name = name;

this.mail = mail;

this.gpa = gpa;

this.mobile = mobile;

}

public Long getId() {

return id;

}

public String getName() {

return name;

}

public String getMail() {

return mail;

}

public Double getGpa() {

return gpa;

}

public Long getMobile() {

return mobile;

}

public void setId(Long id) {

this.id = id;

}

public void setName(String name) {

this.name = name;

}

public void setMail(String mail) {

this.mail = mail;

}

public void setGpa(Double gpa) {

this.gpa = gpa;

}

public void setMobile(Long mobile) {

this.mobile = mobile;

}

@Override

public String toString() {

return "Student{" +

"id=" + id +

", name='" + name + '\'' +

", mail='" + mail + '\'' +

", gpa=" + gpa +

", mobile='" + mobile + '\'' +

'}';

}

}

class StudentImpl implements crudInterface{

private List<Student> allStudents = new ArrayList<>();

public StudentImpl(){

Student student1 = new Student(10015L, "Alice Smith", "alice@mail.com", 3.85, 9876543210L);

Student student2 = new Student(10022L, "Bob Johnson", "bob@mail.com", 3.10, 8765432109L);

Student student3 = new Student(10037L, "Carol Lee", "carol@mail.com", 4.00, 7654321098L);

Student student4 = new Student(10041L, "David Chen", "david@mail.com", 2.95, 1543210987L);

Student student5 = new Student(10059L, "Eva Martinez", "eva@mail.com", 3.52, 5432109876L);

allStudents.add(student2);allStudents.add(student1);

allStudents.add(student3);allStudents.add(student5);

allStudents.add(student4);

}

@Override

public Student getStudentById(Long id){

Student a = allStudents.stream().filter(i-> i.getId().equals(id)).findFirst().orElse(null);

return a;

}

@Override

public String deleteStudent(Long id){

Student a = allStudents.stream().filter(i-> i.getId().equals(id)).findFirst().orElse(null);

if(a== null){

return " no student exists with id: "+ id;

}

allStudents.remove(a);

return "Studen with ID: "+ id+ " deleted successfully";

}

@Override

public Student updateStudent(Student student){

Student s = null;

for(Student a: allStudents){

if(a.getId().equals(student.getId())){

System.out.println(" stdeunt is called"+ student);

if(student.getName()!=null)

a.setName(student.getName());

if(student.getMobile()!=null)

a.setMobile(student.getMobile());

if(student.getGpa()!=null)

a.setGpa(student.getGpa());

if(student.getMobile()!=null)

a.setMobile(student.getMobile());

if(student.getMail()!=null)

a.setMail(student.getMail());

s = a;

return s;

}

}return s;

}

// sort students

@Override

public List<Student> allStudents(){

return allStudents.stream().sorted((a,b)-> a.getName().compareTo(b.getName())).toList();

}

}

public class Main

{

public static void main(String[] args) {

StudentImpl studentImpl = new StudentImpl();

Student s = studentImpl.getStudentById(10015L);

System.out.println(s);

System.out.println(studentImpl.deleteStudent(10015L));

Student temp = new Student(10022L, "Alice ", "alice",null, 987650L);

Student updateStudent = studentImpl.updateStudent(temp);

System.out.println(updateStudent);

List<Student>allStudent = studentImpl.allStudents();

for(Student a: allStudent){

System.out.println(a);

}

System.out.println(allStudent);

}

}