**package** P16\_5\_6;

**import** java.util.Scanner;

/\*

\* Kelley Kelley

\*/

**public** **class** **RosterTester2** {

**public** **static** **void** **main**(**String**[] args) {

**Scanner** **scan** = **new** Scanner(**System**.***in***);

**Roster2** **roll** = **new** Roster2();

**int** **choice** = 0;

**String** **input** = "";

**String** **menu** = "1. add a student\n"

+ "2. add a grade to a student\n"

+ "3. remove a student\n"

+ "4. modify a student's grade\n"

+ "5. get a student\n"

+ "6. list all students\n"

+ "7. quit\n"

+ "enter selection as an int";

**do** {

**System**.***out***.println(menu);

choice = scan.nextInt();

**switch**(choice) {

**case** 1:

**System**.***out***.println("type their first name and last name");

scan.nextLine();

**String**[] **inputs** = scan.nextLine().split(" ");

**Student** **student** = **new** Student(inputs[0], inputs[1]);

**if**(roll.addStudent(student))

**System**.***out***.println("Added " + student.toString());

**else**

**System**.***out***.println("Failed to add student");

**break**;

**case** 2:

**System**.***out***.println("Type the student ID, class name, and grade for the class");

scan.nextLine();

**String**[] **inputs1** = scan.nextLine().split(" ");

**Long** **id** = **Long**.*parseLong*(inputs1[0]);

**int** **grade** = **Integer**.*parseInt*(inputs1[2]);

**if**(roll.addGrades(id, inputs1[1], grade))

**System**.***out***.println("Added class and grade successfully");

**else**

**System**.***out***.println("That ID does not exist or they already "

+ "have a grade for that class if indicated in the line above");

**break**;

**case** 3:

**System**.***out***.println("Enter the id of the student to enter");

input = scan.next();

**Long** **id1** = **Long**.*parseLong*(input);

**if**(roll.removeStudent(id1))

**System**.***out***.println("Successfully removed " + id1);

**else**

**System**.***out***.println("That student does not exist");

**break**;

**case** 4:

**System**.***out***.println("Enter the student ID, the class to change, and the grade to change to");

scan.nextLine();

**String**[] **inputs11** = scan.nextLine().split(" ");

**Long** **id2** = **Long**.*parseLong*(inputs11[0]);

**int** **grade1** = **Integer**.*parseInt*(inputs11[2]);

**if**(roll.modify(id2, inputs11[1], grade1))

**System**.***out***.println("Successfully changed " + inputs11[1] + " to " + grade1);

**else**

**System**.***out***.println("Either the ID does not exist or if indicated above the student does not have that class");

**break**;

**case** 5:

**System**.***out***.println(roll.allStudents());

**break**;

**case** 6:

**System**.***out***.println("Enter the student's ID you want to look up");

**System**.***out***.println(roll.getStudent(scan.next()));

**break**;

**case** 7:

**System**.***out***.println("thank you");

**break**;

}

} **while**(choice != 7);

}

}

**package** P16\_5\_6;

**import** java.util.Scanner;

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**public** **class** **RosterTester2** {

**public** **static** **void** **main**(**String**[] args) {

**Scanner** **scan** = **new** Scanner(**System**.***in***);

**Roster2** **roll** = **new** Roster2();

**int** **choice** = 0;

**String** **input** = "";

**String** **menu** = "1. add a student\n"

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+ "4. modify a student's grade\n"

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+ "6. list all students\n"

+ "7. quit\n"

+ "enter selection as an int";

**do** {

**System**.***out***.println(menu);

choice = scan.nextInt();

**switch**(choice) {

**case** 1:

**System**.***out***.println("type their first name and last name");

scan.nextLine();

**String**[] **inputs** = scan.nextLine().split(" ");

**Student** **student** = **new** Student(inputs[0], inputs[1]);

**if**(roll.addStudent(student))

**System**.***out***.println("Added " + student.toString());

**else**

**System**.***out***.println("Failed to add student");

**break**;

**case** 2:

**System**.***out***.println("Type the student ID, class name, and grade for the class");

scan.nextLine();

**String**[] **inputs1** = scan.nextLine().split(" ");

**Long** **id** = **Long**.*parseLong*(inputs1[0]);

**int** **grade** = **Integer**.*parseInt*(inputs1[2]);

**if**(roll.addGrades(id, inputs1[1], grade))

**System**.***out***.println("Added class and grade successfully");

**else**

**System**.***out***.println("That ID does not exist or they already "

+ "have a grade for that class if indicated in the line above");

**break**;

**case** 3:

**System**.***out***.println("Enter the id of the student to enter");

input = scan.next();

**Long** **id1** = **Long**.*parseLong*(input);

**if**(roll.removeStudent(id1))

**System**.***out***.println("Successfully removed " + id1);

**else**

**System**.***out***.println("That student does not exist");

**break**;

**case** 4:

**System**.***out***.println("Enter the student ID, the class to change, and the grade to change to");

scan.nextLine();

**String**[] **inputs11** = scan.nextLine().split(" ");

**Long** **id2** = **Long**.*parseLong*(inputs11[0]);

**int** **grade1** = **Integer**.*parseInt*(inputs11[2]);

**if**(roll.modify(id2, inputs11[1], grade1))

**System**.***out***.println("Successfully changed " + inputs11[1] + " to " + grade1);

**else**

**System**.***out***.println("Either the ID does not exist or if indicated above the student does not have that class");

**break**;

**case** 5:

**System**.***out***.println(roll.allStudents());

**break**;

**case** 6:

**System**.***out***.println("Enter the student's ID you want to look up");

**System**.***out***.println(roll.getStudent(scan.next()));

**break**;

**case** 7:

**System**.***out***.println("thank you");

**break**;

}

} **while**(choice != 7);

}

}

package P16\_5\_6;

import java.util.Map;

import java.util.Set;

import java.util.TreeMap;

import java.util.TreeSet;

/\*

\* Kelley Kelley

\*/

public class Roster2 {

private Map<Long, Student> roster;

public Roster2() {

roster = new TreeMap<Long, Student>();

}

public boolean addStudent(Student student) {

if(roster.containsKey(student.getID())) {

System.out.println("That ID is already in use");

return false;

}

if(roster.containsValue(student)) {

System.out.println("That student is already in the roster");

return false;

}

roster.put(student.getID(), student);

return true;

}

public boolean addGrades(Long ID, String classes, int grade) {

if(!roster.containsKey(ID))

return false;

if(roster.get(ID).addGrades(classes, grade))

return true;

System.out.println("Already has a grade for that class");

return false;

}

public boolean removeStudent(Long ID) {

if(roster.containsKey(ID)) {

roster.remove(ID);

return true;

}

return false;

}

public boolean modify(Long ID, String classes, int grade) {

if(!roster.containsKey(ID))

return false;

if(roster.get(ID).changeGrades(classes, grade))

return true;

System.out.println("That class does not exist");

return false;

}

public String allStudents() {

Set<Student> students = new TreeSet<Student>();

students.addAll(roster.values());

return students.toString();

}

public String getStudent(String input) {

try {

Long ID = Long.parseLong(input);

if(roster.containsKey(ID))

return roster.get(ID).print();

return "Student ID " + ID + " does not exist";

} catch (Exception e) {

return "That is not a valid student ID";

}

}

}