// package com.infy.assignment.collection;

import java.util.\*;

// import java.util.TreeMap;

class Student {

private String name;

private int rollNumber;

private int totalMarks;

public Student(String name, int rollNumber, int totalMarks) {

this.name = name;

this.rollNumber = rollNumber;

this.totalMarks = totalMarks;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public int getRollNumber() {

return rollNumber;

}

public void setRollNumber(int rollNumber) {

this.rollNumber = rollNumber;

}

public int getTotalMarks() {

return totalMarks;

}

public void setTotalMarks(int totalMarks) {

this.totalMarks = totalMarks;

}

@Override

public String toString() {

return "Student{" +

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

", rollNumber=" + rollNumber +

", totalMarks=" + totalMarks +

'}';

}

@Override

public boolean equals(Object o) {

if (this == o)

return true;

if (o == null || getClass() != o.getClass())

return false;

Student student = (Student) o;

return rollNumber == student.rollNumber;

}

@Override

public int hashCode() {

return Objects.hash(rollNumber);

}

}

public class GradeCalculator {

public static void main(String[] args) {

// Create TreeMap with roll number as the key and grade as the value

Map<Integer, String> gradeMap = new TreeMap<>();

// Create Student objects

Student student1 = new Student("John", 101, 80);

Student student2 = new Student("Alice", 102, 45);

Student student3 = new Student("Bob", 103, 35);

// Calculate grades and store in the TreeMap

calculateGrade(gradeMap, student1);

calculateGrade(gradeMap, student2);

calculateGrade(gradeMap, student3);

// Print grades and roll numbers

for (Map.Entry<Integer, String> entry : gradeMap.entrySet()) {

System.out.println("Roll Number: " + entry.getKey() + ", Grade: " + entry.getValue());

}

}

private static void calculateGrade(Map<Integer, String> gradeMap, Student student) {

int totalMarks = student.getTotalMarks();

String grade;

if (totalMarks >= 60) {

grade = "A";

} else if (totalMarks > 40) {

grade = "B";

} else {

grade = "C";

}

// Store in the TreeMap

gradeMap.put(student.getRollNumber(), grade);

}

}

