Lab Program-2 19/dec/23

Develop a java Program to create a class Student with members, USN, name, an array Credits and an array marks. Include methods to accept and display details and a method to calculate SGPA of Student.

```
import java.util.Scanner;

class Student {
    Private String USN;
    Private String name;
    Private int [] Credits;
    Private int [] marks;
    Public Student (String USN, String name,
        int [] Credits, int [] marks ) {
        this.USN = USN;
        this.name = name;
        this.Credits = credits;
        this.marks = marks;
    }
Public void accept details () {
    Scanner Sc = new Scanner (System.in);
    System.out.Println ("Enter USN:") ;
    USN = Sc.nextline();
    System.out.Println ("Enter Name:");
    name = Sc.nextline();
    System.out.Println ("Enter Number of Subjects:");
    int numSubjects = Sc.nextInt();
    Credits = new int [numSubjects];
    marks = new int [numSubjects];
for (int i=0; i < numSubjects ; i++) {
```

```
System.out.Println("Enter credit for Subjects"+
                    (i+1)+" : ");
Credits [i] = Sc.nextInt();
System.out.Println("Enter marks for
                    Subjects "+(i+1)+" :");
marks[i] = Sc.nextInt();

}
}
Public void displaydetails(){
    System.out.Println("USN : "+USN);
    System.out.Println("Name : "+name);
    for(int i=0; i< credits.length;i++){
    System.out.Println("Subject "+(i+1)+" :
    Credits : "+credits[i]+", Mark : "+marks[i]);
    }
}
Public double CalculateSgpa(){
    double totalCreditPoints = 0;
    double totalCredits = 0;
    for(int i=0; i< credits.length;i++){
        totalCreditsPoints += (credits[i]*
        GetGradePoints(marks[i]);
        totalCredits += Credits[i];
    }
    return totalCreditPoints/totalCredits;
```

```
}
    Private double getGradePoint(int marks){
        if (marks >= 90){
            return 10.0;
        } else if (marks >= 80){
            return 9.0;
        } else if (marks >= 70){
            return 8.0;
        } else if (marks >= 60){
            return 7.0;
        } else if (marks >= 50){
            return 6.0;
        } else if (marks >= 60){
            return 5.0
        } else {
            return 0.0;
        }
}
Public Static void main (String [] args){
    int[] Credits = {3, 4, 2};
    int[] marks = {85, 78, 92};
    Student Student = new Student
("BM22CS228", "John", Credits, marks);
    Student.acceptDetails();
    Student.displayDetails();
    System.out.println("SGPA:" + Student.
                    calculatorSGPA());
}
```

}

output:

Enter Name: mrunalini
Enter USN: 1BM22CS228
Enter number of Subjects: 3
Enter credit for subject S1:
3
Enter ~~credit~~ mark for Subject S1:
90
Enter credit for Subject S2:
4
Enter mark for Subject S2:
90
Enter Credit for Subject S3:
4
Enter ~~S~~ marks for Subject S3:
85
USN: 1BM22CS228
Name: mrunalini
Subject Credits : 3, Marks: 90
Subject Credits : 4 Marks: 90
Subject credits : 4 Marks: 85
SGPA: 9.636363636

19.12

```java
import java.util.Scanner;

class Subject {
    int subjectMarks;
    int credits;
    int grade;
}

class Student {
    String name;
    String usn;
    double SGPA;
    Scanner s;
    Subject[] subjects;

    Student() {
        subjects = new Subject[8];
        for (int i = 0; i < 8; i++) {
            subjects[i] = new Subject();
        }
        s = new Scanner(System.in);
    }

    void getStudentDetails() {
        System.out.print("Enter Name: ");
        name = s.nextLine();
        System.out.print("Enter USN: ");
        usn = s.nextLine();
    }

    void getMarks() {
        for (int i = 0; i < 8; i++) {
            System.out.println("Enter details for Subject " + (i + 1) + ":");
            System.out.print("Marks: ");
            subjects[i].subjectMarks = s.nextInt();
            System.out.print("Credits: ");
            subjects[i].credits = s.nextInt();

            if (subjects[i].subjectMarks >= 90) {
                subjects[i].grade = 10;
            } else if (subjects[i].subjectMarks >= 75) {
                subjects[i].grade = 9;
            } else if (subjects[i].subjectMarks >= 60) {
                subjects[i].grade = 8;
            } else if (subjects[i].subjectMarks >= 50) {
                subjects[i].grade = 7;
            } else if (subjects[i].subjectMarks >= 40) {
```

```
            System.out.print("Credits: ");
            subjects[i].credits = s.nextInt();

            if (subjects[i].subjectMarks >= 90) {
                subjects[i].grade = 10;
            } else if (subjects[i].subjectMarks >= 75) {
                subjects[i].grade = 9;
            } else if (subjects[i].subjectMarks >= 60) {
                subjects[i].grade = 8;
            } else if (subjects[i].subjectMarks >= 50) {
                subjects[i].grade = 7;
            } else if (subjects[i].subjectMarks >= 40) {
                subjects[i].grade = 6;
            } else {
                subjects[i].grade = 0;
            }
        }
    }

    void computeSGPA() {
        double totalCredits = 0;
        double weightedSum = 0;

        for (int i = 0; i < 8; i++) {
            totalCredits += subjects[i].credits;
            weightedSum += subjects[i].grade * subjects[i].credits;
        }

        SGPA = weightedSum / totalCredits;
    }
}

class Main {
    public static void main(String[] args) {
        Student s1 = new Student();
        s1.getStudentDetails();
        s1.getMarks();
        s1.computeSGPA();

        System.out.println("\nResult:");
        System.out.println("Name: " + s1.name);
        System.out.println("USN: " + s1.usn);
        System.out.println("SGPA: " + s1.SGPA);
    }
}
```

```
Microsoft Windows [Version 10.0.22621.2861]
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C:\Users\gmith\OneDrive\Desktop>javac smj1.java

C:\Users\gmith\OneDrive\Desktop>java Main
Enter Name: Mrunalini SM
Enter USN: 1BM22CS228
Enter details for Subject 1:
Marks: 75
Credits: 8
Enter details for Subject 2:
Marks: 63
Credits: 7
Enter details for Subject 3:
Marks: 81
Credits: 9
Enter details for Subject 4:
Marks: 77
Credits: 8
Enter details for Subject 5:
Marks: 86
Credits: 9
Enter details for Subject 6:
Marks: 57
Credits: 6
Enter details for Subject 7:
Marks: 92
Credits: 10
Enter details for Subject 8:
Marks: 87
Credits: 9

Result:
Name: Mrunalini SM
USN: 1BM22CS228
SGPA: 8.863636363636363

C:\Users\gmith\OneDrive\Desktop>
```