LAB program 2

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 a student.

CODE:

```
import java.util.Scanner;
class Student {
    String usn;
    String name;
    int numSubjects;
    int[] credits;
    int[] marks;
    public void acceptDetails() {
        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: ");
        numSubjects = sc.nextInt();
        credits = new int[numSubjects];
        marks = new int[numSubjects];
```

```
System.out.println("Enter credits and marks for each sul
    for (int i = 0; i < numSubjects; i++) {</pre>
        System.out.println("Subject " + (i + 1) + ": ");
        System.out.print("Credits: ");
        credits[i] = sc.nextInt();
        System.out.print("Marks: ");
        marks[i] = sc.nextInt();
    }
}
public void displayDetails() {
    System.out.println("\nStudent Details:");
    System.out.println("USN: " + usn);
    System.out.println("Name: " + name);
    System.out.println("Credits and Marks:");
    for (int i = 0; i < numSubjects; i++) {</pre>
        System.out.println("Subject " + (i + 1) + ": Credits
    }
}
public double calculateSGPA() {
    int totalCredits = 0;
    int weightedSum = 0;
    for (int i = 0; i < numSubjects; i++) {
        int gradePoint = getGradePoint(marks[i]);
        weightedSum += gradePoint * credits[i];
        totalCredits += credits[i];
    }
    return (double) weightedSum / totalCredits;
}
```

```
private int getGradePoint(int marks) {
        if (marks >= 90) {
            return 10;
        } else if (marks >= 80) {
            return 9;
        } else if (marks >= 70) {
            return 8;
        } else if (marks >= 60) {
            return 7;
        } else if (marks >= 50) {
            return 6;
        } else if (marks >= 40) {
            return 5;
        } else {
            return 0; // Fail grade
        }
    }
}
public class second{
    public static void main(String[] args) {
        Student student = new Student();
        student.acceptDetails();
            student.displayDetails();
        double sgpa = student.calculateSGPA();
        System.out.printf("SGPA: %.2f\n", sgpa);
    }
}
```

OUTPUT:

```
Enter USN:
1BM23CS324
Enter Name:
shrinanda
Enter number of subjects:
Enter credits and marks for each subject:
Subject 1:
Credits: 3
Marks: 70
Subject 2:
Credits: 4
Marks: 90
Subject 3:
Credits: 2
Marks: 99
Student Details:
USN: 1BM23CS324
Name: shrinanda
Credits and Marks:
Subject 1: Credits = 3, Marks = 70
Subject 2: Credits = 4, Marks = 90
Subject 3: Credits = 2, Marks = 99
SGPA: 9.33
PS E:\java lab>
```

OBSERVATION:

```
o pevelop a Java program to
                           create class student with usy
   Lab program 2
                          name, an array oredits and arrien
                           marks. Include methods to accept
                           and display details and method
                           de calculate SEPA of a Student
   Propost java. util. Scanner;
   class Student &
         Strong usn,
         String name;
         int neofsubjects;
         ent[] wedits;
         int[] marks;
        Public void accept Details () 1
               Scanner SC= new Scanner (System. In);
              Sout ("Enter USN"):
               USN = Sc. nextline ();
Sout ("Enter name");
              name = Sc. hext Line ();
              Sout ("Enter number of Subjects");
               no-grubjects = sc. nextInt();
              credits = new Port [norm no_ of subjects];
               marks = new int [no_of Subjects];
              Sout ("Enter credits and marks for
                    each Subject");
             for (int i=0; i < no-of Subjects; i++)
                 South Subject 3);
 Sout (" cudits: ");
                 credito [i] = Sc. rest Inter;
                 Sout (" Moures: 2);
                 marks[i] = Sc. rentInt ();
```

```
Public void display () {
                Sout (" Student Details: ");
                 Sout ("USN: "+ U&N);
                 Sout ("Name: " + name);
                 Sout (" credit and marks:");
            forlint i=1; ° <=no-of students; i++) {
Sout ("Subject" + (i) + ": credits="+
                          credits [i] + " Marks = "+ marks[i];
    return (desple) Sum Restal redite:
         proévate ent gradepoints (int marks) i
if (marks >90) i
                 Public Static Void main (string
        else if (marks >=80)1
                   Student, P. onwiter la
else if (marks > = 70) {
                       return 8;
               else if Conarks >= 60) {
                      return to
                else of (marks>=50) 1
                        return 6;
              else if Lmarks > = 40) 1

return 5;

ilse 1

ruturn 0;
```

```
Public double calculate SGIPAC) (
                  Pnt total credite = 0;
                ent numbertor =0;
              for (Int i=0; i < nord Subjects; F+t) [
int gradepoint = get Grade Point (marks [i]);

Sund + = gradepoint + vudits [i];

numerator + = gradepoint + vudits [i];
                  totaleredits + = credits [i];
[Distance : = 3500 ] "
               return (double) Sum /total credits;
Public class Maino?
            Public Static void main (string [] augs) of
                  Student student = new Student Wis
                 Student accept Details ();
                 Student. display ();
                 double Sqpa = Student. calculate SGPALD;
                 sout (sgpa);
  4
                 / (Becalany) /
                J COHEK HARAN MANDE
```

11 output

enter USN:

1BM 23 CS 324

Enter Name:

Shrinanda.

Enter number of subjects:

Enter credits and marks for each subject

OF P

credits: 4

marks: 95

Credits: 4

marks: 97

credits: 3

marks: 91

reledits: 3

marks: 87

credits: 3

mourks: 86

reledits, 1

moures: 91

credity: 1

merk: 95

reality > 1

marks: 99

Student Detalls

USN: 1 BM23CC324

Name: Shrinanda.

credits and Marks!

Subject 1: credits =4, Marks = 95 120 miles

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24/10/24

Subject 2: credits = 4 = Marks = 91
Subject 3: credits = 3 Narks = 91

Entiry Name:

subject 4: viedits = 3 Marks = 87

Subject 5! credits=3 Marks = 86

subject 6: creditiz 1

Marks = 91 Subject 4: credits= 1 Morrey = 95

Subject P: credit= 1 Marks = 99

9.70