

## Lab Program

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.

```
Student.java × SGPA.java
1 package Student;
2
3 import java.util.Scanner;
4 class Student {
5     String usn, name;
6     int[] credits, marks;
7
8     // Method to accept details of a student
9     void acceptDetails() {
10         Scanner sc = new Scanner(System.in);
11         System.out.println("Enter USN:");
12         usn = sc.nextLine();
13         System.out.println("Enter Name:");
14         name = sc.nextLine();
15
16         credits = new int[4];
17         marks = new int[4];
18         System.out.println("Enter details of credits and marks for 4 subjects:");
19         for(int i = 0; i < 4; i++) {
20             System.out.println("Enter credits for subject " + (i + 1) + ":");
21             credits[i] = sc.nextInt();
22             System.out.println("Enter marks for subject " + (i + 1) + ":");
23             marks[i] = sc.nextInt();
24         }
25     }
26
27     // Method to calculate SGPA
28     double calculateSGPA() {
29         int totalCredits = 0;
30         int weightedGradePoints = 0;
31         for(int i = 0; i < 4; i++) {
32             int gradePoint;
33             if (marks[i] >= 90) gradePoint = 10;
34             else if (marks[i] >= 75) gradePoint = 9;
35             else if (marks[i] >= 60) gradePoint = 8;
36             else if (marks[i] >= 50) gradePoint = 7;
37             else if (marks[i] >= 45) gradePoint = 6;
38             else if (marks[i] >= 40) gradePoint = 5;
39             else gradePoint = 0;
40             weightedGradePoints += gradePoint * credits[i];
41             totalCredits += credits[i];
42         }
43     }
44 }
```

```

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27 // Method to calculate SGPA
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36         else if (marks[i] >= 50) gradePoint = 7;
37         else if (marks[i] >= 45) gradePoint = 6;
38         else if (marks[i] >= 40) gradePoint = 5;
39         else gradePoint = 0;
40         weightedGradePoints += gradePoint * credits[i];
41         totalCredits += credits[i];
42     }
43     return (double) weightedGradePoints / totalCredits;
44 }
45
46 // Method to display student details
47 void display() {
48     System.out.println("Student Details:");
49     System.out.println("USN: " + usn);
50     System.out.println("Name: " + name);
51     for(int i = 0; i < 4; i++) {
52         System.out.println("Subject " + (i + 1) + ": Credits = " + credits[i] + ", Marks = " + marks[i]);
53     }
54 }
55 }
56
57

```

```
Student.java  SGPA.java X
1 package Student;
2 import java.util.Scanner;
3 public class SGPA {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.println("Enter the number of students:");
7         int numStudents = sc.nextInt();
8         Student[] students = new Student[numStudents];
9
10        for(int i = 0; i < numStudents; i++) {
11            students[i] = new Student();
12            students[i].acceptDetails();
13            students[i].display();
14            System.out.println("SGPA: " + students[i].calculateSGPA());
15        }
16    }
17 }
18
```

Problems @ Javadoc Declaration Console X

<terminated> SGPA [Java Application] C:\Users\trupt\p2\pool\plugins\org.eclipse.justj.openj

Enter the number of students:  
1

Enter USN:  
1BMCS25001

Enter Name:  
Rekha

Enter details of credits and marks for 4 subjects:  
Enter credits for subject 1:  
4

Enter marks for subject 1:  
95

Enter credits for subject 2:  
3

Enter marks for subject 2:  
88

Enter credits for subject 3:  
4

Enter marks for subject 3:  
72

Enter credits for subject 4:  
3

Enter marks for subject 4:  
67

Student Details:  
USN: 1BMCS25001  
Name: Rekha  
Subject 1: Credits = 4, Marks = 95  
Subject 2: Credits = 3, Marks = 88  
Subject 3: Credits = 4, Marks = 72  
Subject 4: Credits = 3, Marks = 67  
SGPA: 8.785714285714286