

03/10/2024

LAB-2

Q. Write a program to create a class Student with members usn, name, an array credits and an array marks. Calculate SGPA of student.

```
import java.util.Scanner;
```

```
class Subject {
```

```
    int subM;
```

```
    int cred;
```

```
    int grade;
```

```
    void setSubDet (int marks, int cred) {
```

```
        this.subM = marks;
```

```
        this.cred = cred;
```

```
        if (subM >= 90) {
```

```
            grade = 10;
```

```
        }
```

```
        else if (subM >= 80) {
```

```
            grade = 9;
```

```
        }
```

```
        else if (subM >= 70) {
```

```
            grade = 8;
```

```
        }
```

```
        else if (subM >= 60) {
```

```
            grade = 7;
```

```
        }
```

```
        else if (subM >= 50) {
```

```
            grade = 6;
```

```
        }
```

```
        else if (subM >= 40) {
```

```
            grade = 5;
```

```
        }
```

```
        else {
```

```
            grade = 0;
```

```
        }
```

```
    }
```

```
}
```

```
class Student {
```

```
    Scanner s = new Scanner(System.in);
```



```
Subject[] subjects = new Subject[8];
```

```
Student() {
```

```
    for (int i = 0; i < subjects.length; i++) {
```

```
        subjects[i] = new Subject(); }
    }
```

```
void getMarks() {
```

```
    for (int i = 0; i < subjects.length; i++) {
```

```
        System.out.println("Enter marks for student subject " + (i+1) + ": ");
```

```
        int marks = s.nextInt();
```

```
        System.out.println("Enter credit for subject " + (i+1) + ": ");
```

```
        int cred = s.nextInt();
```

```
        subjects[i].setSubDet(marks, cred); }
    }
```

```
double calSGPA() {
```

```
    double Score = 0;
```

```
    int totalCred = 0;
```

```
    double SGPA = 0.0;
```

```
    for (Subject subject : subjects) {
```

```
        Score += (subject.grade * subject.cred);
```

```
        totalCred += subject.cred; }
```

```
    if (totalCred > 0) {
```

```
        SGPA = Score / totalCred; }
```

```
    else {
```

```
        SGPA = 0; }
```

```
    return SGPA;
```

```
}
```

```
public class StudentDetails {
```

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

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println("Enter number of semesters: ");
```

```
        int numSems = sc.nextInt();
```

```
        Student[] students = new Student[numSems];
```

```
        double c = 0.0;
```

```
        String usn, name;
```

```
        System.out.println("Enter USN: ");
```

```
        usn = sc.next();
```

```
        System.out.println("Enter name: ");
```

```
        name = sc.next();
```



```

for (int i=0; i<numSems; i++) {
    System.out.println("Enter semester details: " + (i+1));
    students[i] = new Student();
    students[i].getMarks();
    double s = students[i].calSGPA();
    c += s;
}

c = c / numSems;
for (int i=0; i<numSems; i++) {
    System.out.println("USN: " + USNusn);
    System.out.println("Name: " + name);
    System.out.println("SGPA for sem " + (i+1) + ": " + students[i].calSGPA());
}
System.out.println("CGPA: " + c);
}
}
}

```

Output:

Enter number of semesters: 1

Enter USN=319

Enter Name=Raj

Enter details for semester 1

Enter marks for subject 1: 80

Enter credit for subject 1: 4

Enter marks for subject 2: 85

Enter credit for subject 2: 4

Enter marks for subject 3: 87

Enter credit for subject 3: 3

Enter marks for subject 4: 70

Enter credit for subject 4: 3

Enter marks for subject 5: 78

Enter credit for subject 5: 3

Enter marks for subject 6: 98

Enter credit for subject 6: 1

Enter marks for subject 7: 99

Enter credit for subject 7: 1

Enter marks for subject 8: 93

Enter credit for subject 8: 1

USN: 319

Name: Raj

SGPA for sem 1: 8.85

CGPA: 8.85

24/10/24


```
C:\Windows\System32\cmd.exe X + v
Microsoft Windows [Version 10.0.22631.2861]
(c) Microsoft Corporation. All rights reserved.

C:\317>java StudentDetails
Enter number of semesters: 2
Enter USN: 1BM23CS317
Enter Name: Shreya
Enter details for semester 1
Enter marks for subject 1: 85
Enter credit for subject 1: 4
Enter marks for subject 2: 80
Enter credit for subject 2: 4
Enter marks for subject 3: 78
Enter credit for subject 3: 3
Enter marks for subject 4: 72
Enter credit for subject 4: 3
Enter marks for subject 5: 69
Enter credit for subject 5: 3
Enter marks for subject 6: 89
Enter credit for subject 6: 1
Enter marks for subject 7: 97
Enter credit for subject 7: 1
Enter marks for subject 8: 95
Enter credit for subject 8: 1
Enter details for semester 2
Enter marks for subject 1: 75
Enter credit for subject 1: 4
Enter marks for subject 2: 86
Enter credit for subject 2: 4
Enter marks for subject 3: 59
Enter credit for subject 3: 3
Enter marks for subject 4: 84
Enter credit for subject 4: 3
Enter marks for subject 5: 71
Enter credit for subject 5: 3
Enter marks for subject 6: 85
Enter credit for subject 6: 1
Enter marks for subject 7: 99
Enter credit for subject 7: 1
Enter marks for subject 8: 82
Enter credit for subject 8: 1
USN: 1BM23CS317
Name: Shreya
SGPA for sem 1: 8.5
USN: 1BM23CS317
Name: Shreya
SGPA for sem 2: 8.25
CGPA: 8.375

C:\317>
```