```
t java.util.Scanner;
 Student {
tring usn;
tring name;
nt[] credits;
nt[] marks;

ublic Student(int numSubjects) {
    credits = new int[numSubjects];
    marks = new int[numSubjects];
}
public void acceptDetails() {
    Scanner scanner = new Scanner(System.in);

    System.out.print("Enter USN: ");
    usn = scanner.nextLine();

    System.out.print("Enter Name: ");
    name = scanner.nextLine();

    for (int i = 0; i < credits.length; i++) {
        System.out.print("Enter credits for subject " + (i + 1) + ": ");
        credits[i] = scanner.nextInt();
        System.out.print("Enter marks for subject " + (i + 1) + ": ");
        marks[i] = scanner.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] + ", Marks: " + marks[i]);
    }
}
public double calculateSGPA() {
    double totalCredits = 0;
    double totalGradePoints = 0;
    for (int i = 0; i < credits.length; i++) {
        double gradePoint = getGradePoint(marks[i]);
        totalGradePoints += gradePoint * credits[i];
        totalCredits += credits[i];
    }
    return totalCredits == 0 ? 0 : totalGradePoints / totalCredits;
}
```

```
    public double getGradePoint(int mark) {
        if (mark >= 90) return 10.0;
        else if (mark >= 80) return 9.0;
        else if (mark >= 70) return 8.0;
        else if (mark >= 60) return 7.0;
        else if (mark >= 50) return 6.0;
        else if (mark >= 40) return 5.0;
        else return 0.0; // Fail
    }
}

public class lab2 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter number of subjects: ");
        int numSubjects = scanner.nextInt();
        Student student = new Student(numSubjects);

        student.acceptDetails();
        student.displayDetails();

        double sgpa = student.calculateSGPA();
        System.out.printf("SGPA: %.2f\n", sgpa);
    }
}
```

```
Microsoft Windows [Version 10.0.22631.4460]
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C:\Users\sanch>cd C:\Users\sanch\Desktop\java

C:\Users\sanch\Desktop\java>javac lab2.java

C:\Users\sanch\Desktop\java>java lab2
Enter number of subjects: 5
Enter USN: 1BM23CS299
Enter Name: Sanchit
Enter credits for subject 1: 4
Enter marks for subject 1: 99
Enter credits for subject 2: 3
Enter marks for subject 2: 89
Enter credits for subject 3: 3
Enter marks for subject 3: 85
Enter credits for subject 4: 2
Enter marks for subject 4: 90
Enter credits for subject 5: 1
Enter marks for subject 5: 87
USN: 1BM23CS299
Name: Sanchit
Subject 1 - Credits: 4, Marks: 99
Subject 2 - Credits: 3, Marks: 89
Subject 3 - Credits: 3, Marks: 85
Subject 4 - Credits: 2, Marks: 90
Subject 5 - Credits: 1, Marks: 87
SGPA: 9.46

C:\Users\sanch\Desktop\java>java lab2
Enter number of subjects: 2
Enter USN: 1bm23cs123
Enter Name: xyz
Enter credits for subject 1: 1
Enter marks for subject 1: 78
Enter credits for subject 2: 5
Enter marks for subject 2: 98
USN: 1bm23cs123
Name: xyz
Subject 1 - Credits: 1, Marks: 78
Subject 2 - Credits: 5, Marks: 98
SGPA: 9.67
```

```
C:\Users\sanch\Desktop\java>java lab2
Enter number of subjects: 4
Enter USN: 1bm23cs189
Enter Name: piyush
Enter credits for subject 1: 4
Enter marks for subject 1: 80
Enter credits for subject 2: 3
Enter marks for subject 2: 87
Enter credits for subject 3: 2
Enter marks for subject 3: 92
Enter credits for subject 4: 1
Enter marks for subject 4: 67
USN: 1bm23cs189
Name: piyush
Subject 1 - Credits: 4, Marks: 80
Subject 2 - Credits: 3, Marks: 87
Subject 3 - Credits: 2, Marks: 92
Subject 4 - Credits: 1, Marks: 67
SGPA: 9.00
```

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1. 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.

```
import java.util.Scanner

Class Student {
        String usn;
        String name;
        int[] credits;
        int marks;
Void accepting details of student() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter USN: ");
          USN = sc.nextline();
        System.out.print("Enter name:");
          name = sc.nextline();
        System.out.print("Enter no of subjects:");
        int n = sc.nextInt();
          Credits = new Int[n];
        for(int i=0; i<n; i++) {
          System.out.print("Enter credits for sub"+
            (i+1)+":");
          marks[i] = sc.nextInt();
        }
}
Void displayDetails() {
        System.out.println("USN: "+usn);
        USN = sc.nextline
        System.out.println("Name: "+name);
        System.out.println("Credit and Marks:");
```

```
for(int i=0; i< credits.length; i++){
System.out.println("Subject "+(i+1)+":
  Credits = "+credits[i]+"Marks = "+
      marks[i]);
    }
  }
double calculateSGPA(){
    int totalCredits=0;
    double weightedSum=0.0;
    for(int i=0; i<credits.length; i++){
      weightedSum += marks[i]*credits[i];
    } totalCredits+=credits[i];

    return weightedSum/totalCredits
  }
public static void main(String[] args){
    Student student = new Student();
     student.acceptDetails();
      student.displayDetails();
       double sgpa = Student.calculateSGPA();
       System.out.println("SGPA:"+sgpa);
    }
  }
```

Output:→

```
Enter the number of students: 1
Enter USN: 1BM23CS294
Enter Name: Sanchit Mehta
Enter number of subjects: 3
Enter the credits for subject 1: 4
Enter the Marks for subject 1: 89
Enter the credits for subject 2: 3
Enter the marks for subject 2: 94
Enter Credits for subject 3: 1
Enter the marks for subject 3: 97
```

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USN : 1BM23CS299
Name: Sanchit Mehta
Credits and marks:
Subject 1 : credits = 4, marks = 89
Subject 2: Credits = 3, marks = 94
Subject 1 : Credits = 1, marks = 97
SGPA : 9.8

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