```java
import java.util.Scanner;

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


    public void calculateGrade() {
        if (subjectMarks >= 90 && subjectMarks <= 100) {
            grade = 10;
        } else if (subjectMarks >= 80) {
            grade = 9;
        } else if (subjectMarks >= 70) {
            grade = 8;
        } else if (subjectMarks >= 60) {
            grade = 7;
        } else if (subjectMarks >= 50) {
            grade = 6;
        } else if (subjectMarks >= 40) {
            grade = 5;
        } else {
            grade = 0;
        }
    }
}

class Student {
    String name;
    String usn;
    double SGPA;
    Subject[] subject = new Subject[8];
    Scanner s = new Scanner(System.in);

       public Student() {
        for (int i = 0; i < 8; i++) {
            subject[i] = new Subject();
        }
    }


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


    public void getMarks() {
        for (int i = 0; i < 8; i++) {
```

```
        for (int i = 0; i < 8; i++) {
            System.out.println("Enter Marks for Subject " + (i + 1) + ": ");
            subject[i].subjectMarks = s.nextInt();

            // Ensure marks are valid
            if (subject[i].subjectMarks > 100 || subject[i].subjectMarks < 0) {
                System.out.println("Invalid marks! Please enter again.");
                i--;
                continue;
            }

            System.out.println("Enter Credits for Subject " + (i + 1) + ": ");
            subject[i].credits = s.nextInt();

            subject[i].calculateGrade(); // Calculate grade based on marks
        }
    }

        public void computeSGPA() {
        int totalCredits = 0;
        int effectiveScore = 0;

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

        SGPA = (double) effectiveScore / totalCredits;
    }


    public void displayResult() {
        System.out.println("\nStudent Name: " + name);
        System.out.println("Student USN: " + usn);
        System.out.println("SGPA: " + SGPA);
    }
}

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


        Student[] students = new Student[3];


        for (int i = 0; i < 3; i++) {
            System.out.println("\nEnter details for Student " + (i + 1) + ": ");
            students[i] = new Student();
            students[i].getStudentDetails();
            students[i].getMarks();
            students[i].computeSGPA();
```

```
public class Main {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);


        Student[] students = new Student[3];


        for (int i = 0; i < 3; i++) {
            System.out.println("\nEnter details for Student " + (i + 1) + ": ");
            students[i] = new Student();
            students[i].getStudentDetails();
            students[i].getMarks();
            students[i].computeSGPA();
        }

        System.out.println("\n\nResults for all students:");
        for (int i = 0; i < 3; i++) {
            students[i].displayResult();
        }
    }
}
```

```
Microsoft Windows [Version 10.0.22000.2538]
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C:\Users\Admin>cd desktop

C:\Users\Admin\Desktop>javac Main.java

C:\Users\Admin\Desktop>java Main

Enter details for Student 1:
Enter Student Name:
akshat
Enter Student USN:
123
Enter Marks for Subject 1:
90
Enter Credits for Subject 1:
3
Enter Marks for Subject 2:
70
Enter Credits for Subject 2:
3
Enter Marks for Subject 3:
80
Enter Credits for Subject 3:
4
Enter Marks for Subject 4:
90
Enter Credits for Subject 4:
4
```

```
Enter Marks for Subject 4:
90
Enter Credits for Subject 4:
4
Enter Marks for Subject 5:
60
Enter Credits for Subject 5:
4
Enter Marks for Subject 6:
75
Enter Credits for Subject 6:
2
Enter Marks for Subject 7:
90
Enter Credits for Subject 7:
1
Enter Marks for Subject 8:
90
Enter Credits for Subject 8:
1

Enter details for Student 2:
Enter Student Name:
ayush
Enter Student USN:
124
Enter Marks for Subject 1:
90
Enter Credits for Subject 1:
3
Enter Marks for Subject 2:
66
Enter Credits for Subject 2:
3
Enter Marks for Subject 3:
45
Enter Credits for Subject 3:
```

```
Enter Marks for Subject 3:
45
Enter Credits for Subject 3:
4
Enter Marks for Subject 4:
88
Enter Credits for Subject 4:
4
Enter Marks for Subject 5:
77
Enter Credits for Subject 5:
4
Enter Marks for Subject 6:
80
Enter Credits for Subject 6:
2
Enter Marks for Subject 7:
85
Enter Credits for Subject 7:
1
Enter Marks for Subject 8:
85
Enter Credits for Subject 8:
1

Enter details for Student 3:
Enter Student Name:
rajat
Enter Student USN:
125
Enter Marks for Subject 1:
50
Enter Credits for Subject 1:
3
Enter Marks for Subject 2:
60
Enter Credits for Subject 2:
3
Enter Marks for Subject 3:
65
Enter Credits for Subject 3:
4
Enter Marks for Subject 4:
55
Enter Credits for Subject 4:
4
Enter Marks for Subject 5:
70
Enter Credits for Subject 5:
4
Enter Marks for Subject 6:
55
Enter Credits for Subject 6:
2
Enter Marks for Subject 7:
90
Enter Credits for Subject 7:
1
Enter Marks for Subject 8:
95
Enter Credits for Subject 8:
1
```

```
Results for all students:

Student Name: akshat
Student USN: 123
SGPA: 8.818181818181818

Student Name: ayush
Student USN: 124
SGPA: 7.954545454545454

Student Name: rajat
Student USN: 125
SGPA: 7.045454545454546
```