

Q: Develop a program in JAVA to create a class 'Student' with members id no., name, an array credits and an array marks. Include methods to accept and display details and a method to calculate the SGPA of a student.

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

```
class Subject {
```

```
    int subjectMarks;
```

```
    int credits;
```

```
    int grade;
```

```
    public Subject()
```

```
{
```

```
        this.credits = 0;
```

```
        this.subjectMarks = 0;
```

```
        this.grade = 0;
```

```
}
```

```
}
```

```
class Student {
```

```
    String name;
```

```
    String idNo;
```

```
    double SGPA;
```

```
    Scanner s;
```

```
    Subject[] subjects;
```

```
    Student()
```

```
{
```

```
    int i;
```

```
    Subject s = new Subject[9];
```

```
    for (i = 0; i < 9; i++)
```

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

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

```
}
```

```
    public void getStudentDetails()
```

```
{
```

```
        System.out.print("Enter Name: ");
```

```
        name = s.nextLine();
```

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```

System.out.print("Enter USN:");
usn = s.next();
}

public void getMarks()
{
    for (int i=0; i<8; i++)
    {
        System.out.print("Enter marks for Subject " + (i+1) + ":");
        subjects[i].SubjectMarks = s.nextInt();
        System.out.print("Enter credits for subject " + (i+1) + ":");
        subjects[i].Credits = s.nextInt();
        if (subjects[i].SubjectMarks >= 90)
            subjects[i].Grade = 10;
        else if (subjects[i].SubjectMarks >= 80)
            subjects[i].Grade = 9;
        else if (subjects[i].SubjectMarks >= 70)
            subjects[i].Grade = 8;
        else if (subjects[i].SubjectMarks >= 60)
            subjects[i].Grade = 7;
        else if (subjects[i].SubjectMarks >= 50)
            subjects[i].Grade = 6;
        else if (subjects[i].SubjectMarks >= 40)
            subjects[i].Grade = 5;
        else
            subjects[i].Grade = 0;
    }
}

public void computeSGPA()
{
    double totalCredits = 0.0;
    double weightedSum = 0.0;

    for (int i=0; i<8; i++)
    {
        System.out.print("Enter marks for Subject " + (i+1) + ":");
        subjects[i].SubjectMarks = s.nextInt();
        System.out.print("Enter credits for subject " + (i+1) + ":");
        subjects[i].Credits = s.nextInt();
        totalCredits += subjects[i].Credits;
        weightedSum += subjects[i].Grade * subjects[i].Credits;
    }
}

```

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```

totalCredits += subjects[i].Credits;
weightedSum += subjects[i].Grade * subjects[i].Credits;
}

SGPA = weightedSum / totalCredits;
}

public class Main
{
    public static void main (String [] args)
    {
        Student s1 = new Student();
        s1.getStudentDetails();
        s1.getMarks();
        s1.computeSGPA();
        System.out.println("Name: " + s1.name);
        System.out.println("USN: " + s1.usn);
        System.out.println("SGPA: " + s1.SGPA);
    }
}

Enter Name: NAVANEETH
Enter USN: IBM22CS171
Enter Marks for Subject 1: 100
Enter credits for Subject 1: 4
Enter Marks for Subject 2: 86
Enter credits for Subject 2: 4
Enter Marks for Subject 3: 95
Enter credits for Subject 3: 3
Enter Marks for Subject 4: 78
Enter credits for Subject 4: 3
Enter Marks for Subject 5: 100
Enter credits for Subject 5: 3
Enter Marks for Subject 6: 65
Enter credits for Subject 6: 3
Enter Marks for Subject 7: 100

```

Entitled credits for subject 7: 1

Entitled marks for subject 8: 99

Entitled marks for subject 9: 1

Student Details:

Name: NAVANEETH

USN: IBM22CS171

SGPA: 9.136363636363637.

10/12/23