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Program II

Develop java program to create a class Student with members usn, name, array Credits and array marks. Include methods to accept and display details and a method to calculate SGPA of a student.

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

```
class Student
```

```
{
```

```
    String name;
```

```
    String usn;
```

```
    int numSub;
```

```
    int[] credits;
```

```
    int[] marks;
```

```
    Student (int num)
```

```
    {
```

```
        numSub = num;
```

```
        credits = new int [numSub];
```

```
        marks = new int [numSub];
```

```
    }
```

```
    void Accept Details()
```

```
    {
```

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

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

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

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

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

```
        System.out.println ("Enter Credits for each subject:");
```

```

for (int i=0; i< numSub; i++)
{
    System.out.println("Credits for subject" + (i+1) + ": ");
    credits[i] = sc.nextInt();
}

System.out.println("Enter marks for each subject:");
for (int i=0; i< numSub; i++)
{
    System.out.println("Marks for subject" + (i+1) + ": ");
    marks[i] = sc.nextInt();
}
}

void display()
{
    System.out.println("In student Details:");
    System.out.println("USN: " + USN);
    System.out.println("Name: " + name);
System.out.println("Subject " + (i+1) + " Credits: " + credits[i]);
    System.out.println("In Subject-wise Credits and Marks");
    for (int i=0; i< numSub; i++)
    {
        System.out.println("Subject " + (i+1) + " : Credits = " + credits[i] + ", Marks = " + marks[i]);
    }
    System.out.println("SGPA: " + calculateSGPA());
}

double calculateSGPA()
{
    int totalCredits = 0;
    int totalGradePoints = 0;
    for (int i=0; i< numSum; i++)

```



```

    {
        totalCredits += credits[i];
        int gradePoint = calculateGradePoint(marks[i])
        totalGradePoints += gradePoint * credits[i];
    }
    return (double) totalGradePoints / totalCredits;
}

```

```

int calculateGradePoint(int marks)
{
    if (marks >= 90)
        return 10;
    else if (marks >= 80)
        return 9;
    else if (marks >= 70)
        return 8;
    else if (marks >= 60)
        return 7;
else if (marks >= 50)
    {
        marks = "marks[i]";
    }
    else if (marks >= 50)
        return 6;
    else if (marks >= 40)
        return 5;
    else return 0;
}

```

```

public static void main (String [] args)
{
    Scanner sc = new Scanner (System.in);
    System.out.println ("Enter number of subjects: ");
    int numSub = sc.nextInt();
    Student s = new Student (numSub);
    s.add s.details ();
    s.display ();
}
}

```

Output

Enter number of subjects : 5

Enter USN : IBM23CS330

Enter name : Sinchana Hemanth

Enter credits for each subject :

Credits for subject 1: 4

Credits for subject 2: 4

Credits for subject 3: 3

Credits for subject 4: 3

Credits for subject 5: 2

Enter marks for each subject:

Marks for subject 1: 98

Marks for subject 2: 95

Marks for subject 3: 91

Marks for subject 4: 92

Marks for subject 5: 96

Student Details :

USN : IBM23CS330

Name : Sinchana Hemanth

Subject-wise Credits and Marks :

Subject 1 : Credits = 4 , Marks = 98

Subject 2 : Credits = 4 , Marks = 95

Subject 3 : Credits = 3 , Marks = 91

Subject 4 : Credits = 3 , Marks = 92

Subject 5 : Credits = 2 , Marks = 96

SGPA : 10.0

[Signature]
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```
import java.util.Scanner;

class Sgpacalc {
    String usn;
    String name;
    int numSubjects;
    int[] credits;
    int[] marks;

    Sgpacalc(int x) {
        numSubjects = x;
        credits = new int[numSubjects];
        marks = new int[numSubjects];
    }

    void acceptDetails() {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter USN: ");
        usn = sc.nextLine();
        System.out.print("Enter Name: ");
        name = sc.nextLine();

        System.out.println("Enter credits for each subject:");
        for (int i = 0; i < numSubjects; i++) {
            System.out.print("Credits for subject " + (i+1) + ": ");
            credits[i] = sc.nextInt();
        }

        System.out.println("Enter marks for each subject:");
        for (int i = 0; i < numSubjects; i++) {
            System.out.print("Marks for subject " + (i+1) + ": ");
```

```

        marks[i] = sc.nextInt();
    }
}

void displayDetails() {
    System.out.println("\nStudent Details:");
    System.out.println("USN: " + usn);
    System.out.println("Name: " + name);

    System.out.println("\nSubject-wise Credits and Marks:");
    for (int i = 0; i < numSubjects; i++) {
        System.out.println("Subject " + (i+1) + ": Credits = " + credits[i] + ", Marks = " + marks[i]);
    }

    System.out.println("SGPA: " + calculateSGPA());
}

double calculateSGPA() {
    int totalCredits = 0;
    int totalGradePoints = 0;

    for (int i = 0; i < numSubjects; i++) {
        totalCredits += credits[i];
        int gradePoint = calculateGradePoint(marks[i]);
        totalGradePoints += gradePoint * credits[i];
    }

    return (double) totalGradePoints / totalCredits;
}

int calculateGradePoint(int marks) {

```

```

        if (marks >= 90) return 10;

        else if (marks >= 80) return 9;

        else if (marks >= 70) return 8;

        else if (marks >= 60) return 7;

        else if (marks >= 50) return 6;

        else if (marks >= 40) return 5;

        else return 0;

    }

```

```

public static void main(String[] args) {

    Scanner sc = new Scanner(System.in);

    System.out.print("Enter number of subjects: ");

    int numSubjects = sc.nextInt();

    Sgpacalc s = new Sgpacalc(numSubjects);

    s.acceptDetails();

    s.displayDetails();

}

}

```

```

D:\IBM23CS330>java Sgpacalc
Enter number of subjects: 5
Enter USN: IBM23CS330
Enter Name: Sinchana Hemanth
Enter credits for each subject:
Credits for subject 1: 4
Credits for subject 2: 4
Credits for subject 3: 3
Credits for subject 4: 3
Credits for subject 5: 2
Enter marks for each subject:
Marks for subject 1: 90
Marks for subject 2: 95
Marks for subject 3: 88
Marks for subject 4: 91
Marks for subject 5: 98

Student Details:
USN: IBM23CS330
Name: Sinchana Hemanth

Subject-wise Credits and Marks:
Subject 1: Credits = 4, Marks = 90
Subject 2: Credits = 4, Marks = 95
Subject 3: Credits = 3, Marks = 88
Subject 4: Credits = 3, Marks = 91
Subject 5: Credits = 2, Marks = 98
SGPA: 9.8125

D:\IBM23CS330>

```