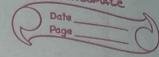16/10/24

Q) Develop a Java program to create a class Student with member's usn, name, an array credits and an array marks. Include methods to accept and display details and a method to calculate SGPA of a student

Source Code

```java
import java.util.*;
class Subject {
    int subjectMarks, credits, grade;

    void CalculateGrade() {
        if (subjectMarks >= 90)
            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 usn, name;
    double SGPA;
    Subject subjects[] = new Subject[8];
    Scanner sc = new Scanner(System.in);
```

```java
void Student () {
    int
    for (i=0; i<8; i++)
        subjects [i] = new Subject ();
}


void Student Data getStudentDetails ()
{

    System.out.println ("Enter usn: ");
    usn = sc.next ();
    System.out.println ("Enter name: ");
    name
    = sc.next ();
}


void getMarks () {
    for (int i=0; i<8; i++) {
        System.out.println ("Enter marks: ");
        subjects [i].subjectMarks = sc.nextInt ();
        System.out.println ("Enter credits : ");
        subjects [i].credits = sc.nextInt ();
        subjects [i].CalculateGrade ();
    }
}


    calcSGPA
void SGPA () {
    double Score = 0 ; SGPA
    int total_credits = 0;
    for (int i=0; i<8; i++) {
        Score += subjects [i].credits * subjects [i].grade ;
        total_credits += subjects [i].credits ;
    }
    SGPA = Score / total_credits ;
}
```

```java
            void display () {
                System.out.println("USN: " + usn);
                System.out.println("Name: " + name);
                System.out.println("SGPA: " + SGPA);
            }
    }


    class StudDetails {
        public static void main (String [] args) {
            Student students [] = new Student [3];
            for (int j = 0; j < 3; j++) {
                System.out.println("Enter details for student " + (i+1) + ":");
                students [j] = new Student ();
                students [j].getStudentDetails ();
                students [j].getMarks ();
                students [j].calcSGPA ();
            }
            for (int i=0; i<3; i++) {
                students [i].display ();
            }
        }
    }
```

Output:

Enter the details for student 1:
Enter USN: IBM23CS001
Enter Name: AA
Enter marks: 99
Enter credits: 4
Enter marks: 98
Enter credits: 1

Enter marks: 97
Enter credits: 4
Enter marks: 96
Enter credits: 1
Enter marks: 78
Enter credit: 1
Enter marks: 86
Enter credits: 3
Enter marks: 90
Enter credits: 3
Enter marks: 91
Enter credits: 3
USN: 1BM23CS001
Name: AA
SGPA: 9.75

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