

## Lab Program no. 2

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 and a method to calculate SGPA of a student.

```

import java.util.Scanner;
class Subject
{
    int subjectMarks;
    int credits;
    int grade;
}
class Student
{
    Subject subject[];
    String name;
    String usn;
    double SGPA;
    int totalCredits = 0;
    Scanner s;
    Student(int n)
    {
        subject = new Subject[n];
        for (int i = 0; i < n; i++)
            subject[i] = new Subject();
    }
  
```



```
s = new Scanner(System.in);
}
void getStudentDetails()
{
    Scanner s = new Scanner(System.in);
    System.out.println("Enter student's
                        name:");
    name = s.nextLine();
    System.out.println("Enter usn no:");
    usn = s.nextLine();
}
void getMarks(int n)
{
    int i;
    Scanner s = new Scanner(System.in);
    System.out.println("Enter " + n +
                        "subject marks along
                        with credits:");
    for(i=0; i<n; i++)
    {
        System.out.println("Enter marks
                            and credits for subject"
                            + (i+1) + ":");
        subject[i].subjectMarks = s.nextInt();
        subject[i].credits = s.nextInt();
        if (subject[i].subjectMarks > 100 ||
            subject[i].subjectMarks < 0)
        {
            System.out.println("Invalid input");
            i--; // Re-enter marks and credits
                for the current subject
        }
    }
}
```



```

    else
        total credits + = subject[i]. credits;
    }
}
}

```

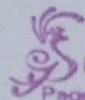
void compute SGPA(int n)

```

{
    int i;
    int total score = 0;
    subject[0]. grade = 0;
    for (i = 0; i < n; i++)
    {
        if (subject[i]. subjectMarks >= 90 &&
            subject[i]. subjectMarks <= 100)
        {
            subject[i]. grade = 10;
            total score + = (subject[i]. grade *
                             subject[i]. credits);
        }
        else if (subject[i]. subjectMarks >= 80 &&
                 subject[i]. subjectMarks <= 89)
        {
            subject[i]. grade = 9;
            total score + = (subject[i]. grade *
                             subject[i]. credits);
        }
        else if (subject[i]. subjectMarks >= 70 &&
                 subject[i]. subjectMarks <= 79)
        {
            subject[i]. grade = 8;
            total score + = (subject[i]. grade *
                             subject[i]. credits);
        }
    }
}

```





```
else if (subject[i].subjectMarks >= 60 &&
        subject[i].subjectMarks <= 69)
{
    subject[i].grade = 7;
    total score += (subject[i].grade *
                    subject[i].credits);
}
else if (subject[i].subjectMarks >= 50 &&
        subject[i].subjectMarks <= 59)
{
    subject[i].grade = 6;
    total score += (subject[i].grade *
                    subject[i].credits);
}
else if (subject[i].subjectMarks >= 40 &&
        subject[i].subjectMarks <= 49)
{
    subject[i].grade = 5;
    total score += (subject[i].grade *
                    subject[i].credits);
}
else if (subject[i].subjectMarks < 40
        && subject[i].subjectMarks >= 0)
{
    subject[i].grade = 0;
    total score += (subject[i].grade *
                    subject[i].credits);
}
}
SGPA = (double) total score / total credits;
```

```

public static void main (String args[])
{
    Scanner ss = new Scanner (System.in);
    System.out.println ("Enter number
                        of subjects:");
    int n = ss.nextInt();
    Student s1 = new Student (n);
    s1.getStudentDetails ();
    s1.getMarks (n);
    s1.computeSGPA (n);
    System.out.println ("Name = " + s1.name);
    System.out.println ("Usn = " + s1.usn);
    System.out.println ("SGPA = " + s1.SGPA);
}
}

```

### Output:

1. Enter number of subjects:  
4  
Enter student's name:  
Sita  
Enter usn no.:  
IBM22FEO80  
Enter 4 subject marks along with credits:  
Enter marks and credits for subject 1:  
94 4  
Enter marks and credits for subject 2:  
87 3  
Enter marks and credits for subject 3:  
75 3



Enter marks and credits for subject 4:

90 2

Name = Sita

Usn = IBM22EE080

SGPA = 9.25

2. Enter number of subjects:

3

Enter student's name:

Azhar

Enter usn no.:

IBM22EE100

Enter 3 subject marks along with credits:

Enter marks and credits for subject 1:

101 4

Invalid input

Enter marks and credits for subject 1:

78 3

Enter marks and credits for subject 2:

85 2

Enter marks and credits for subject 3:

-16 3

Invalid input

Enter marks and credits for subject 3:

65 3

Name: Azhar

Usn: IBM22EE100

SGPA = 7.875