

## LAB - 2

Q Develop a Java program to create a class student with members id, 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 {
    String name;
    String id;
    double SGPA;
    Scanner s;
    Subject[] subject;
```

```
Student() {
    int i;
    subject = new Subject[8];
    for (i = 0; i < 8; i++)
        subject[i] = new Subject();
    s = new Scanner(System.in);
}
```

```

public void getStudentDetails () {
    System.out.println ("Enter student name : ");
    name = s.nextLine ();
    System.out.println ("Enter student UN : ");
    UN = s.nextLine ();
}

```

```

public void getMarks () {
    for (int i = 0 ; i < p ; i++) {
        System.out.println ("Enter marks for Subject " + (i+1));
        subject[i].credits = s.nextInt ();
        subject[i].subjectMarks = s.nextInt ();
    }
}

```

```

while (subject[i].subjectMarks < 0 || subject[i].subjectMarks
      > 100) {
}

```

```

System.out.println ("Invalid marks. Please enter
marks between 0 and 100 . ");

```

```

subject[i].subjectMarks = s.nextInt ();
}

```

```

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

```

```

if (subject[i].subjectMarks >= 90) {
}

```

```

subject[i].grade = 10;
}

```

```

else if (subject[i].subjectMarks >= 80) {
}

```

```

subject[i].grade = 9;
}

```

```

else if (subject[i].subjectMarks >= 70) {
}

```

```

subject[i].grade = 8;
}

```

```
else if (subject[i].subjectMarks >= 60) {  
    subject[i].grade = 7;
```

```
} else if (subject[i].subjectMarks >= 50) {  
    subject[i].grade = 6;
```

```
} else if (subject[i].subjectMarks >= 40.) {  
    subject[i].grade = 5;
```

```
} else {
```

```
    subject[i].grade = 0;
```

```
}
```

```
}
```

```
public void computeSGPA() {
```

```
    double totalCredits = 0;
```

```
    double weightedSum = 0;
```

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

```
        totalCredits += subject[i].credits;
```

```
        weightedSum += subject[i].grade * subject[i].credits;
```

```
    if (totalCredits == 0) {
```

```
        SGPA = 0;
```

```
} else {
```

```
    SGPA = weightedSum / totalCredits;
```

```
}
```

```
}
```

```

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

```

Output :

Enter name : shivam

Enter usn : 1bm22cs275

Enter marks and credits for subject 1 :

Marks : 80

Credits : 9

Enter marks and credits for subject 2 :

Marks : 80

Credits : 9

Enter marks and credits for subject 3 :

Marks : 80

Credits : 9

Enter marks and credits for subject 4 :

Marks : 60

Credits : 7

Enter marks and credits for subject 5 :

Marks : 60

Credits : 7

Enter marks and credits for subject 6:

Marks : 70

Credits : 8

Enter marks and credits for subject 7:

Marks : 70

Credits : 8

Enter marks and credit for subject 8:

Marks : 60

Credits : 7

Result:

Name : shuram

USN : 1bm22cs275

SGPA : 8.421875

10

✓  
19/12/23