CGPA → excluding F grade
SGPA → including F grade.

Lab Pgm 2: Develop a 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.

$$SGPA = \frac{\sum[(\text{Course credits})(\text{Grade points})]}{\sum[(\text{Course credits})]}$$

```
import java.util.Scanner;
class Subject
{
    int subjectMarks;
    int credits;
    int grade;
}
class Student
{
    Subject subject[];
    String name; String usn; double SGPA;
    Scanner s;
    Student()
    {
        int i;
        subject = new Subject[9];
        for(i=0; i<9; i++)
            subject[i] = new Subject();
        s = new Scanner(System.in);
    }
void getStudentDetails()
    {
        System.out.println("Enter your name:");
        name = s.next();
        System.out.println("Enter your usn:");
    }   usn = s.next();
```

```
void getMarks()
{
    for (int i=0; i<9; i++)
    {
        System.out.print("Enter marks for subject
            " +(i+1)+ " : ");
        subject[i].subjectMarks = S.nextInt();
        System.out.print("Enter credits for subject
            " +(i+1)+ " : ");
        subject[i].credits = S.nextInt();
        subject[i].grade = (subject[i].subjectMarks/10)
            +1;
        if (subject[i].grade == 11)
            subject[i].grade = 10;
        if (subject[i].grade <= 4)
            subject[i].grade = 0;
    }
}
void computeSGPA()
{
    int effectiveScore = 0;
    int totalCredits = 0;
    for (int i=0; i<9; i++)
    {
        effectiveScore += (subject[i].grade
            * subject[i].credits);
        totalCredits += subject[i].credits;
    }
    SGPA = (double)effectiveScore/(double)totalCredits;
}
}
```

```
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);
    }
}
```

Output:

```
Enter your name: sakshi
Enter your usn : 1bm22cs234
Enter marks for subject 1: 89
Enter credits for subject 1: 4
Enter marks for subject 2: 67
Enter credits for subject 2: 2
Enter marks for subject 3: 82
Enter credits for subject 3: 3
Enter marks for subject 4: 78
Enter credits for subject 4: 2
Enter marks for subject 5: 90
Enter credits for subject 5: 4
Enter marks for subject 6: 78
Enter credits for subject 6: 4
Enter marks for subject 7: 78
Enter credits for subject 7: 1
```

Bafna Gold
Date: Page:

Enter marks for subject 8 : 95
Enter credits for subject 8 : 2
Enter marks for subject 9 : 78
Enter credits for subject 9 : 4
Name : sakshi
USN : 1bm22cs234
SGPA : 8.653846153846153

9-12-2023