```java
import java.util.Scanner;

class Student
{
    String usn;
    String name;
    int sem;

    public Student(String usn, String name, int sem) {
        this.usn = usn;
        this.name = name;
        this.sem = sem;
    }
}

class Test extends Student {
    int [] cie_marks;
    int [] credits;

    public Test(String usn, String name, int sem, int[] cie_marks, int[] credits) {
        super(usn, name, sem);
        this.cie_marks = cie_marks;
        this.credits = credits;
    }
}

class Exam extends Test {
    int [] see_marks;

    public Exam(String usn, String name, int sem, int[] cie_marks, int[] credits, int[] see_marks) {
        super(usn, name, sem, cie_marks, credits);
        this.see_marks = see_marks;
    }
}

class Result extends Exam {
    public Result(String usn, String name, int sem, int[] cie_marks, int[] credits, int[] see_marks) {
        super(usn, name, sem, cie_marks, credits, see_marks);
    }
    double sgpa;
    char [] grade = new char[credits.length];
    public void cal_grade_sgpa(int tot_credits){

        int sum=0;
```

```java
41      char [] grade = new char[credits.length];
42      public void cal_grade_sgpa(int tot_credits){
43
44          int sum=0;
45          for(int i=0;i<credits.length;i++) {
46              double marks = cie_marks[i] + (see_marks[i] / 2.0);
47              if (marks >= 90) {
48                  sum += credits[i] * 10;
49                  grade[i] = 'S';
50              } else if (marks >= 80 && marks < 90) {
51                  sum += credits[i] * 9;
52                  grade[i] = 'A';
53              } else if (marks >= 70 && marks < 80) {
54                  sum += credits[i] * 8;
55                  grade[i] = 'B';
56              } else if (marks >= 60 && marks < 70) {
57                  sum += credits[i] * 7;
58                  grade[i] = 'C';
59              } else if (marks >= 50 && marks < 60){
60                  sum += credits[i] * 6;
61                  grade[i] = 'D';
62              }
63              else if(marks>=40 && marks<50) {
64                  sum += credits[i] * 5;
65                  grade[i] = 'E';
66              }
67              else {
68                  sum += credits[i] * 0;
69                  grade[i] = 'F';
70              }
71          }
72          sgpa = sum*1.0/tot_credits;
73      }
74      public void display()
75      {
76          System.out.println("USN:"+usn);
77          System.out.println("Name:"+name);
78          System.out.println("SEM:"+sem);
79          System.out.println("Grades of each subject:");
80          for(int i=0;i<credits.length;i++)
81          {
82              System.out.println("Subject "+(i+1)+":"+grade[i]);
83          }
84          System.out.println("SGPA:"+sgpa);
```

```java
public void display()
{
    System.out.println("USN:"+usn);
    System.out.println("Name:"+name);
    System.out.println("SEM:"+sem);
    System.out.println("Grades of each subject:");
    for(int i=0;i<credits.length;i++)
    {
        System.out.println("Subject "+(i+1)+":"+grade[i]);
    }
    System.out.println("SGPA:"+sgpa);
}
}
class cricket {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of students:");
        int n = sc.nextInt();
        Result [] s = new Result[n];
        int [] tot_credits = new int[n];
        for(int i=0;i<n;i++)
        {
            System.out.println("------Student "+(i+1)+"--------");
            System.out.print("Enter usn:");
            String usn = sc.next();
            System.out.print("Enter name:");
            String name = sc.next();
            System.out.print("Enter sem:");
            int sem=sc.nextInt();
            System.out.print("Enter number of subjects:");
            int n1 = sc.nextInt();
            System.out.println("Enter cie_marks:");
            int [] cie_marks = new int[n1];
            for(int j=0;j<n1;j++)
            {
                int marks1 = sc.nextInt();
                cie_marks[j] = marks1;

            }
            System.out.println("Enter credits:");
            int [] credits = new int[n1];
            int sum = 0;
            for(int j=0;j<n1;j++)
            {
```

```java
        String usn = sc.next();
        System.out.print("Enter name:");
        String name = sc.next();
        System.out.print("Enter sem:");
        int sem=sc.nextInt();
        System.out.print("Enter number of subjects:");
        int n1 = sc.nextInt();
        System.out.println("Enter cie_marks:");
        int [] cie_marks = new int[n1];
        for(int j=0;j<n1;j++)
        {
            int marks1 = sc.nextInt();
            cie_marks[j] = marks1;

        }
        System.out.println("Enter credits:");
        int [] credits = new int[n1];
        int sum = 0;
        for(int j=0;j<n1;j++)
        {
            int marks1 = sc.nextInt();
            credits[j] = marks1;
             sum += credits[j];
        }
        tot_credits[i] = sum;
        System.out.println("Enter see_marks:");
        int [] see_marks = new int[n1];
        for(int j=0;j<n1;j++)
        {
            int marks1 = sc.nextInt();
            see_marks[j] = marks1;

        }
        s[i] = new Result(usn,name,sem,cie_marks,credits,see_marks);
    }
    for(int k=0;k<n;k++)
    {
        System.out.println("Details of Student "+(k+1)+":");
        s[k].cal_grade_sgpa(tot_credits[k]);
        s[k].display();
    }

}
```

```
Microsoft Windows [Version 10.0.19041.572]
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C:\Users\Deepu K>CD JAVA

C:\Users\Deepu K\java>javac cricket.java

C:\Users\Deepu K\java>java cricket
Enter number of students:2
------Student 1-------
Enter usn:1BM19CS098
Enter name:FFFF
Enter sem:2
Enter number of subjects:5
Enter cie_marks:
34
33
35
32
31
Enter credits:
5
4
4
3
3
Enter see_marks:
76
75
74
73
78
------Student 2-------
Enter usn:1BM19CS97
Enter name:EEEE
Enter sem:2
Enter number of subjects:5
Enter cie_marks:
34
36
32
30
29
Enter credits:
5
4
4
3
3
Enter see marks:
```

```
74
73
78
-------Student 2-------
Enter usn:1BM19CS97
Enter name:EEEE
Enter sem:2
Enter number of subjects:5
Enter cie_marks:
34
36
32
30
29
Enter credits:
5
4
4
3
3
Enter see_marks:
76
75
78
75
76
Details of Student 1:
USN:1BM19CS098
Name:FFFF
SEM:2
Grades of each subject:
Subject 1:B
Subject 2:B
Subject 3:B
Subject 4:C
Subject 5:B
SGPA:7.842105263157895
Details of Student 2:
USN:1BM19CS97
Name:EEEE
SEM:2
Grades of each subject:
Subject 1:B
Subject 2:B
Subject 3:B
Subject 4:C
Subject 5:C
SGPA:7.684210526315789

C:\Users\Deepu K\java>javac cricket.java
```