

Main.java

```
1 import java.util.Scanner;
2
3 class Student{
4     String USN,name;
5     int sem;
6     Scanner sc = new Scanner(System.in);
7     void setStuDetails(){
8         System.out.println("Enter USN of Student: ");
9         this.USN = sc.nextLine();
10        System.out.println("Enter Name of Student: ");
11        this.name = sc.nextLine();
12        System.out.println("Enter Semester of Student: ");
13        this.sem = sc.nextInt();
14    }
15
16    void getStuDetails(){
17        System.out.println("USN: " + this.USN);
18        System.out.println("Name: " + this.name);
19        System.out.println("Semester: " + this.sem);
20    }
21 }
22
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17     System.out.println("USN: " + this.USN);
18     System.out.println("Name: " + this.name);
19     System.out.println("Semester: " + this.sem);
20 }
21 }
22
23 class Test extends Student{
24     double cieMarks[] = new double[5];
25     int credits[] = new int[5];
26     int totalCredits = 0;
27     void setCieDetails(){
28         for(int i=0;i<cieMarks.length;i++){
29             System.out.println("Enter CIE marks(50) in course" + (i+1) + ": ");
30             cieMarks[i] = sc.nextDouble();
31             System.out.println("Enter credits of course" + (i+1) + ": ");
32             credits[i] = sc.nextInt();
33             totalCredits += credits[i];
34         }
35     }
36 }
37 }
38

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36 }
37 }
38
39 class Exam extends Test{
40     double seeMarks[] = new double[5];
41     double totalMarks[] = new double[5];
42     int totCredits = super.totalCredits;
43     void setSeeDetails(){
44         for(int i=0;i<seeMarks.length;i++){
45             System.out.println("Enter SEE marks(100) in course" + (i+1) + ": ");
46             seeMarks[i] = sc.nextDouble()/2;
47         }
48         calcTotalMarks();
49     }
50     void calcTotalMarks(){
51         for(int i=0;i<5;i++){
52             totalMarks[i] = cieMarks[i] + seeMarks[i];
53         }
54     }
55 }
56 }
```

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51     for(int i=0;i<5;i++){
52         totalMarks[i] = cieMarks[i] + seeMarks[i];
53     }
54 }
55 }
56
57 class Result extends Exam{
58     char grades[] = new char[5];
59     double sgpa = 0;
60     int points[] = new int[5];
61     void calcSGPA(){
62         for(int i = 0; i<5; i++){
63             if(totalMarks[i] > 100){
64                 System.out.println("Error: Marks are above 100");
65                 return;
66             }else if(totalMarks[i] >= 90){
67                 points[i] = 10;
68             }else if(totalMarks[i] >= 80){
69                 points[i] = 9;
70             }else if(totalMarks[i] >= 70){
71                 points[i] = 8;
72             }else if(totalMarks[i] >= 60){

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83     }
84 }
85
86 void calcGrade(){
87     for(int i = 0; i < 5; i++){
88         if(totalMarks[i] > 100){
89             System.out.println("Error: Marks are above 100");
90             return;
91         }else if(totalMarks[i] >= 90){
92             grades[i] = 'S';
93         }else if(totalMarks[i] >= 80){
94             grades[i] = 'A';
95         }else if(totalMarks[i] >= 70){
96             grades[i] = 'B';
97         }else if(totalMarks[i] >= 60){
98             grades[i] = 'C';
99         }else if(totalMarks[i] >= 50){
100             grades[i] = 'D';
101         }else if(totalMarks[i] >= 40){
102             grades[i] = 'E';
103         }else{
104             points[i] = 'F';

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99 -         }else if(totalMarks[i] >= 50){
100 -             grades[i] = 'D';
101 -         }else if(totalMarks[i] >= 40){
102 -             grades[i] = 'E';
103 -         }else{
104 -             points[i] = 'F';
105 -         }
106     }
107 }
108
109 void getSGPA(){
110     System.out.format("SGPA is %.2f", (sgpa/totalCredits));
111 }
112
113 void getGrades(){
114     for(int i=0; i<5; i++){
115         System.out.println("Subject "+(i+1)+": " + grades[i]);
116     }
117 }
118 }
119
120

```

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121
122
123
124
125 - public class Prog1{
126 -     public static void main(String[] args) {
127         int n = 0;
128         Scanner sc = new Scanner(System.in);
129         System.out.println("Enter number of students");
130         n = sc.nextInt();
131         Result results[] = new Result[n];
132         for(int i=0;i<n;i++){
133             results[i] = new Result();
134             results[i].setStuDetails();
135             results[i].setCieDetails();
136             results[i].setSeeDetails();
137             results[i].calcSGPA();
138             results[i].calcGrade();
139             results[i].getSGPA();
140             results[i].getGrades();
141         }
142

```