Extra 1

Code

```java
1  import java.util.Scanner;
2
3  class student
4  {
5      String usn,name;
6      int sem;
7      Scanner get = new Scanner(System.in);
8
9      void getStudInfo(int m)
10     {
11         System.out.printf("\n <-----Student %d----> \n",m+1);
12         System.out.printf(" Name:"); name=get.next();
13         System.out.printf(" Usn:"); usn=get.next();
14         System.out.printf(" Sem Number:"); sem=get.nextInt();
15     }
16
17 }
18
19 class test extends student
20 {
21     int n;
22     int cieMarks[];
23     int corresCredits[];
24     Scanner get = new Scanner(System.in);
25
26     void getTestInfo()
27     {
28         System.out.printf("\n Enter the No of courses : "); n=get.nextInt();
29         cieMarks=new int[n];
30         corresCredits=new int[n];
31         System.out.printf("\n Enter Course credit And Marks obtained :\n ");
32         for (int i=0;i<n;i++)
33         {
34             System.out.printf("\n Course %d: ",i+1);
35             System.out.printf("\n Course Credit and CIE Marks(out of 50) Obtained : ");
36             corresCredits[i]=get.nextInt();
37             cieMarks[i]=get.nextInt();
38         }
```

```java
37             cieMarks[i]=get.nextInt();
38         }
39
40     }
41
42 }
43 class exam extends test
44 {
45     int seeMarks[];
46     Scanner get = new Scanner(System.in);
47
48     void getExamInfo()
49     {
50         seeMarks=new int[n];
51         System.out.printf("\n Enter the SEE Marks (out of 100) of %d Courses: ",n);
52         for (int i=0;i<n;i++)
53         {
54             seeMarks[i]=get.nextInt();
55         }
56     }
57
58 }
59
60 class result extends exam
61 {
62     double sgpa=0;
63
64     int gradePoint(double num)
65     {
66         if(num>=50)
67         return (int)(Math.ceil(num/10));
68         else
69         if(num>=40)
70         return 4;
71         else
72         return 0;
73     }
74
```

```java
74         }
75     void calculation()
76     {
77         double marksSum=0,creditSum=0;
78         for(int i=0;i<n;i++)
79         {
80
81             marksSum+=gradePoint((seeMarks[i]/2)+cieMarks[i])*corresCredits[i];
82             creditSum+=corresCredits[i];
83         }
84         sgpa=marksSum/creditSum;
85     }
86
87
88     void displayInfo(int m)
89     {
90         System.out.printf("\n\n -----Student %d Deatails-----",m+1);
91         System.out.printf("\n Name: %s",name);
92         System.out.printf("\n Usn: %s",usn);
93         System.out.printf("\n Sem Number: %d",sem);
94         System.out.printf("\n Course Credits :");
95         for(int i=0;i<n;i++)
96         {System.out.printf(" %d ",corresCredits[i]);}
97         System.out.printf("\n CIE Marks(out of 50) :");
98         for(int i=0;i<n;i++)
99         {System.out.printf(" %d ",cieMarks[i]);}
100            System.out.printf("\n SEE Marks(out of 100) :");
101        for(int i=0;i<n;i++)
102        {System.out.printf(" %d ",seeMarks[i]);}
103        System.out.printf("\n SGPA : %.2f ",sgpa);
104
105    }
106
107
108 }
109
110 class studMain
```

```
107
108    }
109
110    class studMain
111    {
112        public static void main(String[] args)
113        {
114            int noStud;
115            result r[];
116            Scanner get = new Scanner(System.in);
117            System.out.printf("\n Enter The no of Students :" );
118            noStud=get.nextInt();
119            r=new result[noStud];
120            for(int i=0;i<noStud;i++)
121            {
122                r[i]=new result();
123                r[i].getStudInfo(i);
124                r[i].getTestInfo();
125                r[i].getExamInfo();
126            }
127            System.out.printf("\n All Students data Saved :" );
128            for(int i=0;i<noStud;i++)
129            {
130                r[i].calculation();
131            }
132            System.out.printf("\n The Student Deatils As Follows: \n" );
133            for(int i=0;i<noStud;i++)
134            {
135                r[i].displayInfo(i);
136            }
137
138        }
139    }
140
```

Output

```
Enter The no of Students :2

<-----Student 1----->
Name:Amarnath
Usn:1bm17cs008
Sem Number:4

Enter the No of courses : 6

Enter Course credit And Marks obtained :

Course 1:
Course Credit and CIE Marks(out of 50) Obtained : 3 45

Course 2:
Course Credit and CIE Marks(out of 50) Obtained : 4 45

Course 3:
Course Credit and CIE Marks(out of 50) Obtained : 2 50

Course 4:
Course Credit and CIE Marks(out of 50) Obtained : 5 46

Course 5:
Course Credit and CIE Marks(out of 50) Obtained : 3 43

Course 6:
Course Credit and CIE Marks(out of 50) Obtained : 4 40

Enter the SEE Marks (out of 100) of 6 Courses: 98 89 78 98 100 87

<-----Student 2----->
Name:Ananth
Usn:1bm13cs167
Sem Number:2

Enter the No of courses : 4

Enter Course credit And Marks obtained :

Course 1:
Course Credit and CIE Marks(out of 50) Obtained : 4 50

Course 2:
Course Credit and CIE Marks(out of 50) Obtained : 3 48
```

```
Course 3:
Course Credit and CIE Marks(out of 50) Obtained : 4 47

Course 4:
Course Credit and CIE Marks(out of 50) Obtained : 5 43

Enter the SEE Marks (out of 100) of 4 Courses: 80 96 91 82

All Students data Saved :
The Student Deatils As Follows:


-----Student 1 Deatails-----
Name: Amarnath
Usn: 1bm17cs008
Sem Number: 4
Course Credits : 3  4  2  5  3  4
CIE Marks(out of 50) : 45  45  50  46  43  40
SEE Marks(out of 100) : 98  89  78  98  100  87
SGPA : 9.52

-----Student 2 Deatails-----
Name: Ananth
Usn: 1bm13cs167
Sem Number: 2
Course Credits : 4  3  4  5
CIE Marks(out of 50) : 50  48  47  43
SEE Marks(out of 100) : 80  96  91  82
SGPA : 9.44
```

Extra 2

Code

```java
1    import java.util.Scanner;
2
3
4    abstract class player
5    {
6        String Name;
7        int matchesPlayed;
8        double average;
9
10       abstract void cal_average();
11   }
12
13   class batsman extends player
14   {
15       int runsScored[];
16       Scanner get = new Scanner(System.in);
17
18       void getBatsmanInfo(int m)
19       {
20           System.out.printf("\n <-----Batsman %d Details----->",m+1);
21           System.out.printf("\n\n Enter The No of Matches Played : ");
22           matchesPlayed=get.nextInt();
23           runsScored=new int[matchesPlayed];
24           System.out.printf(" Enter The Runs Scored in %d Matchs : ",matchesPlayed);
25           for (int i=0;i<matchesPlayed;i++)
26           {
27               runsScored[i]=get.nextInt();
28           }
29       }
30
31       void cal_average()
32       {
33           int sum=0;
34           for (int i=0;i<matchesPlayed;i++)
35           {
36               sum+=runsScored[i];
37           }
38           average=sum/(double)matchesPlayed;
```

```java
37           }
38           average=sum/(double)matchesPlayed;
39           System.out.printf("\n The Average Runs Scored in %d Matchs by Batsman is %.2f \n",matchesPlayed,average);
40       }
41   }
42
43   class bowler extends player
44   {
45       int runsGiven[];
46       Scanner get = new Scanner(System.in);
47
48       void getBowlersInfo(int m)
49       {
50           System.out.printf("\n <-----Bowler %d Details----->",m+1);
51           System.out.printf("\n Enter The No of Matches Played : ");
52           matchesPlayed=get.nextInt();
53           runsGiven=new int[matchesPlayed];
54           System.out.printf(" Enter The Runs Given in %d Matchs : ",matchesPlayed);
55           for (int i=0;i<matchesPlayed;i++)
56           {
57               runsGiven[i]=get.nextInt();
58           }
59       }
60
61       void cal_average()
62       {
63           int sum=0;
64           for (int i=0;i<matchesPlayed;i++)
65           {
66               sum+=runsGiven[i];
67           }
68           average=sum/(double)matchesPlayed;
69           System.out.printf("\n The Average Runs Given in %d Matchs by Bowler is %.2f \n ",matchesPlayed,average);
70       }
71   }
72
73   class playerMain
74   {
```

```java
73   class playerMain
74   {
75       public static void main(String[] args)
76       {
77           int n,m;
78           batsman bat[];
79           bowler bowl[];
80           Scanner get = new Scanner(System.in);
81           System.out.printf("\n Enter The No of Batsman : ");n=get.nextInt(); bat=new batsman[n];
82           System.out.printf("\n Enter The No of Bowlers : ");m=get.nextInt(); bowl=new bowler[m];
83           for (int i=0 ;i<n ;i++ )
84           {
85               bat[i]=new batsman();
86               bat[i].getBatsmanInfo(i);
87               bat[i].cal_average();
88           }
89           for (int i=0 ;i<m ;i++ )
90           {
91               bowl[i]=new bowler();
92               bowl[i].getBowlersInfo(i);
93               bowl[i].cal_average();
94           }
95       }
96
97
98   }
99
100
```

output

```
Enter The No of Batsman : 3

Enter The No of Bowlers : 2

<-----Batsman 1 Details----->

Enter The No of Matches Played : 2
Enter The Runs Scored in 2 Matchs : 4 5

The Average Runs Scored in 2 Matchs by Batsman is 4.50

<-----Batsman 2 Details----->

Enter The No of Matches Played : 3
Enter The Runs Scored in 3 Matchs : 3 5 6

The Average Runs Scored in 3 Matchs by Batsman is 4.67

<-----Batsman 3 Details----->

Enter The No of Matches Played : 2
Enter The Runs Scored in 2 Matchs : 4 5

The Average Runs Scored in 2 Matchs by Batsman is 4.50

<-----Bowler 1 Details----->
Enter The No of Matches Played : 3
Enter The Runs Given in 3 Matchs : 4 3 2

The Average Runs Given in 3 Matchs by Bowler is 3.00

<-----Bowler 2 Details----->
Enter The No of Matches Played : 2
Enter The Runs Given in 2 Matchs : 3 0

The Average Runs Given in 2 Matchs by Bowler is 1.50
```