

```

import java.util.Scanner;
class Student
{
    String usn,name;
    int sem;
}
class Test extends Student
{
    double cie[];
    int credits[];
    int n;
}
class Exam extends Test
{
    double see[];
}
class Result extends Exam
{
    double marks[];
    int sum=0;
    char grade[];
    double sgpa;
    void getData1()
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the name ,usn and semester of student of respectively:");
        name=sc.next();
        usn=sc.next();
        sem=sc.nextInt();
        System.out.println("Enter the number of subjects");
        n=sc.nextInt();
        cie=new double[n];
        credits=new int[n];
        marks=new double[n];
        grade=new char[n];
        for(int i=0;i<n;i++)
        {
            System.out.println("Enter the subject" +(i+1)+ " cie marks and credits respectively");
            cie[i]=sc.nextDouble();
            credits[i]=sc.nextInt();
        }
        see=new double[n];
        for(int i=0;i<n;i++)
        {
            System.out.println("Enter the subject" +(i+1)+ " see marks");
            see[i]=sc.nextDouble();
        }
    }
    void sgpa()
    {
        for(int i=0;i<n;i++)
        {
            marks[i]=see[i]+cie[i];
            if(marks[i]>=90 && marks[i]<=100)
            {
                sum+=10*credits[i];
                grade[i]='S';
            }
        }
    }
}

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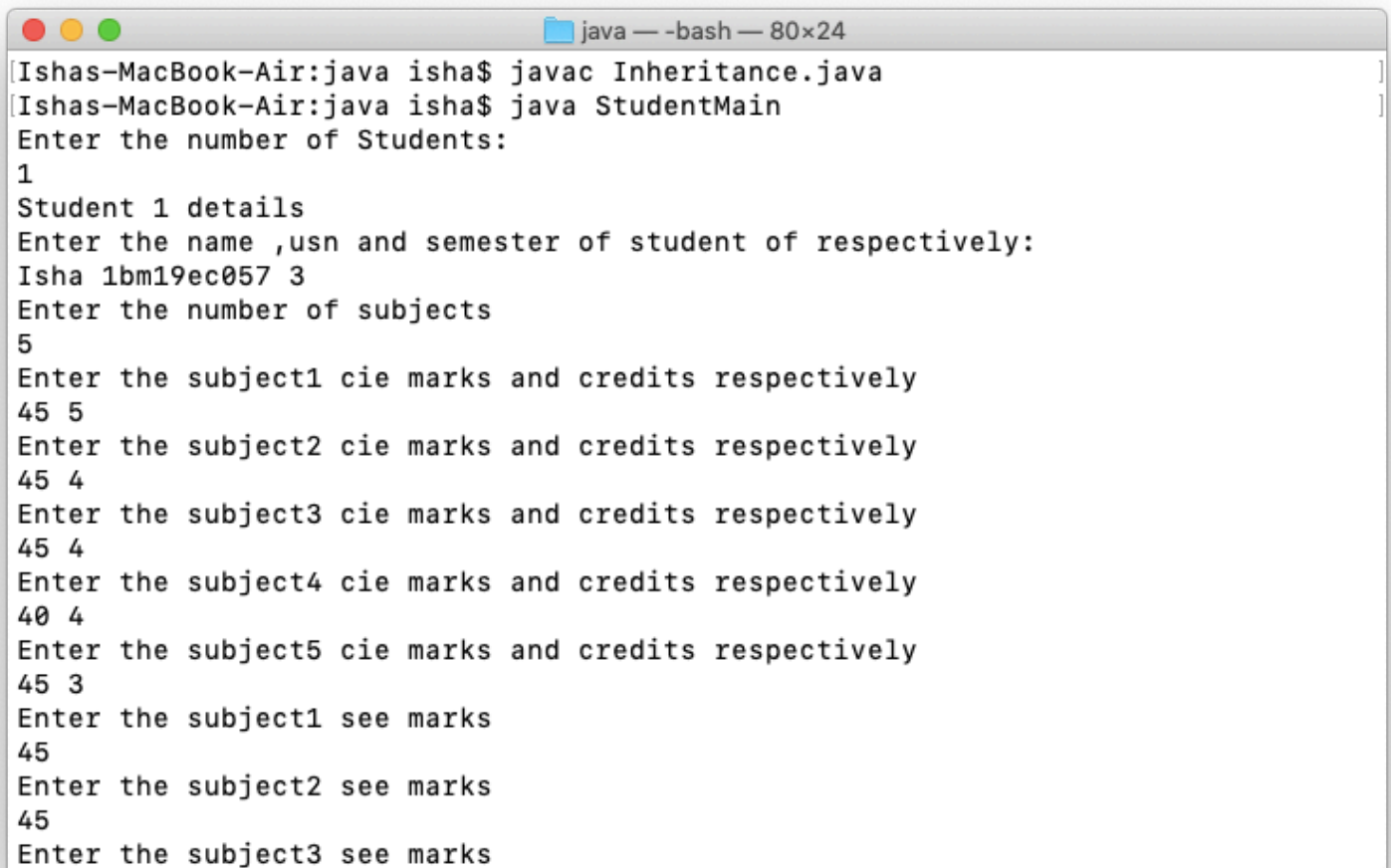
        else if(marks[i]>=80 && marks[i]<90)
        {
            sum+=9*credits[i];
            grade[i]='A';
        }
        else if(marks[i]>=70 && marks[i]<80)
        {
            sum+=8*credits[i];
            grade[i]='B';
        }
        else if(marks[i]>=60 && marks[i]<70)
        {
            sum+=7*credits[i];
            grade[i]='C';
        }
        else if(marks[i]>=50 && marks[i]<60)
        {
            sum+=6*credits[i];
            grade[i]='D';
        }
        else if(marks[i]>=40 && marks[i]<50)
        {
            sum+=5*credits[i];
            grade[i]='E';
        }
        else if(marks[i]<40)
        {
            sum+=0;
            grade[i]='F';
        }
    }
    int credit_sum=0;
    for(int i=0;i<n;i++)
    {
        credit_sum+=credits[i];
    }
    sgpa=(double)sum/credit_sum;
}
void Details()
{
    System.out.println("Name of student : "+name);
    System.out.println("Usn of student : "+usn);
    System.out.println("Semester of student : "+sem);
    for(int i=0;i<n;i++)
    {
        System.out.println("Grade for subject "+(i+1)+" = "+grade[i]);
    }
    System.out.println("Sgpa of student: "+sgpa);
}
}
class StudentMain
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        int num;
        System.out.println("Enter the number of Students: ");
        num=sc.nextInt();
        Result s[]=new Result[num];
    }
}

```

```

    for(int i=0;i<num;i++)
    {
        System.out.println("Student "+(i+1)+" details");
        s[i]=new Result();
        s[i].getData1();
        s[i].sgpa();
    }
    for(int i=0;i<num;i++)
    {
        System.out.println("Following are details of student "+(i+1));
        s[i].Details();
        System.out.println();
    }
}
}

```



A terminal window titled 'java — -bash — 80x24' showing the execution of a Java program. The user enters the number of students (1), and the program prompts for student details. The user provides the name 'Isha', USN '1bm19ec057', and semester '3'. Then, the user enters the number of subjects (5), and the program prompts for marks and credits for each subject. The user provides marks and credits for subjects 1 through 5. Finally, the program prompts for marks for subjects 1 through 3, and the user provides the marks.

```

[Ishas-MacBook-Air:java isha$ javac Inheritance.java
[Ishas-MacBook-Air:java isha$ java StudentMain
Enter the number of Students:
1
Student 1 details
Enter the name ,usn and semester of student of respectively:
Isha 1bm19ec057 3
Enter the number of subjects
5
Enter the subject1 cie marks and credits respectively
45 5
Enter the subject2 cie marks and credits respectively
45 4
Enter the subject3 cie marks and credits respectively
45 4
Enter the subject4 cie marks and credits respectively
40 4
Enter the subject5 cie marks and credits respectively
45 3
Enter the subject1 see marks
45
Enter the subject2 see marks
45
Enter the subject3 see marks

```



java — -bash — 80×24

Enter the subject5 cie marks and credits respectively

45 3

Enter the subject1 see marks

45

Enter the subject2 see marks

45

Enter the subject3 see marks

45

Enter the subject4 see marks

45

Enter the subject5 see marks

45

Following are details of student 1

Name of student : Isha

Usn of student : 1bm19ec057

Semester of student : 3

Grade for subject 1 = S

Grade for subject 2 = S

Grade for subject 3 = S

Grade for subject 4 = A

Grade for subject 5 = S

Sgpa of student: 9.8

Ishas-MacBook-Air:java isha\$