Program 6

Create a package CIE which has two classes - Personal and Internals. The class Personal has members like usn, name, sem. The class Internals has an array that stores the internal marks scored in five courses of the current semester of the student. Create another package SEE which has the class External which is a derived class of Personal. This class has an array that stores the SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that declares the final marks of n students in all five courses.

```
6. Create a package CIE which has two classes - student
& Internals. The class student has members like USN,
name, sem. The class internals has an array that stores
the internal marks scored in five courses of the current
semester of the student. Create another package SEE
which has the class External which is a derived class of
student. This class has an array that stores the SEE
marks scored in five courses of the current semester of
the student. Import the two packages in a file that declares
the final marks of n students in all five courses.

Par package CIE;
import java.util.*;
public class student
{
  public String USN;
  public String Name;
  public int Sem;
  Scanner Sc = new Scanner(System.in);
Public void getd(){
  System.out.println();
  Sc.nextLine();
  System.out.println("Enter USN:");
  USN = Sc.nextLine();
  System.out.println("Enter name:");
  Name = Sc.nextline();
  System.out.println("Enter sem:");
  Sem = Sc.nextInt();
}
  Public void putd(){
  System.out.println("USN: "+USN);
  System.out.println("Name:"+Name);
  System.out.println("Sem:"+Sem);
  }
}
```

```
package CIE;
import java.util.*;
public class Internals{
  Scanner sc = new Scanner(System.in);
  public int cmarks[] = new int[5];
  public void getd(){
    System.out.println("Enter CIE marks:");
    for(int i=0; i<5; i++){
      cmarks[i]= sc.nextInt();
    }
  }
  public void putd(){
    for(int i=0; i<5; i++){
      System.out.println("cmarks[i]+" ");
    }
  }
}
```

```
package SEE
import CIE.student;
import java.util.*;
public class External extends students
{
  Scanner sc = new Scanner(System.in);
  public int smarks[] = new int[5];
  public void getd(){
    System.out.println("Enter SEE marks");
    for(int i=0; i<5; i++){
      smarks[i] = sc.nextInt();
    }
  }
public void putd(){
  for(int i=0; i<5; i++){
    System.out.println(smarks[i]+" ");
  }
}
```

```
public int getfinalmarks(int x, int cmarks){
    return cmarks + (smarks[x]/2);
}
}
import java.util.*;
import CIE.*;
import SEE.*;
class Main{
public static void main(String[] args){
Scanner sc = new Scanner(System.in);
System.out.println("Enter number of student");
int n= sc.nextInt();
Student s = new student();
Internals I[] = new Internals[n];
Externals E[] = new Externals[n];
for(int i=0; i<n; i++){
    s.getd();
    s.putd();
    I[i] = new Internals();
    I[i].getd();
    I[i].putd();
    E[i] = new External();
    E[i].getd();
    E[i].putd();
  System.out.println("Final marks");
    for(int j=0; j<5; j++){
    int finalmarks = E[i].getfinalmarks(j, I[i].cmarks[j]);
    System.out.println(finalmarks);
    }
  }
}
}
```

O/P : Enter number of student
2

enter usn :
433CS21056
enter name :
anu
enter sem :
3
USN : 433CS21056
NAME : anu
Sem : 3
Enter CIE MARKS :
20
21
22
23
24
Enter SEE marks
30
31
32
33
34
Final marks
35
36
38
39
41

enter usn :
433CS21067
enter name :
api
enter sem :
3
USN : 433CS21067
NAME : api
Sem : 3
Enter CIE MARKS
20
21
22
23
24
Enter SEE marks
30
31
32
33
34
Final marks
35
36
38
39
41

14.11.24

```
package CIE;
public class Student {
    private String usn;
    private String name;
    private int sem;
    public Student(String usn, String name, int sem) {
        this.usn = usn;
        this.name = name;
        this.sem = sem;
    }
    public String getUsn() {
        return usn;
    }
    public String getName() {
        return name;
    }
    public int getSem() {
        return sem;
    }
}
package CIE;
public class Internals {
    private int[] internalMarks;
    public Internals() {
        internalMarks = new int[5];
    }
    public void setInternalMarks(int[] marks) {
        if (marks.length == 5) {
            this.internalMarks = marks;
        } else {
```

```
            System.out.println("Error: Marks should be for 5 courses.");
        }
    }
    public int[] getInternalMarks() {
        return internalMarks;
    }
}
package SEE;
import CIE.Student;
public class External extends Student {
    private int[] externalMarks;
     public External(String usn, String name, int sem) {
        super(usn, name, sem);
        externalMarks = new int[5];
    }
    public void setExternalMarks(int[] marks) {
        if (marks.length == 5) {
            this.externalMarks = marks;
        } else {
            System.out.println("Error: Marks should be for 5 courses.");
        }
    }
    public int[] getExternalMarks() {
        return externalMarks;
    }
    public int[] getFinalMarks(int[] internalMarks) {
        int[] finalMarks = new int[5];
        for (int i = 0; i < 5; i++) {
            finalMarks[i] = internalMarks[i] + externalMarks[i];
        }
```

```
        return finalMarks;
    }
}
import CIE.Internals;
import SEE.External;
import java.util.Scanner;
public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter number of students: ");
        int n = scanner.nextInt();
        External[] externalStudents = new External[n];
        Internals[] internalMarks = new Internals[n];
        for (int i = 0; i < n; i++) {
            scanner.nextLine();
            System.out.print("\nEnter USN for student " + (i + 1) + ": ");
            String usn = scanner.nextLine();
            System.out.print("Enter name for student " + (i + 1) + ": ");
            String name = scanner.nextLine();
            System.out.print("Enter semester for student " + (i + 1) + ": ");
            int sem = scanner.nextInt();



            externalStudents[i] = new External(usn, name, sem);



            internalMarks[i] = new Internals();
            int[] internalMarksArray = new int[5];
            System.out.println("Enter internal marks for 5 courses: ");
            for (int j = 0; j < 5; j++) {
```

```
            internalMarksArray[j] = scanner.nextInt();
        }
        internalMarks[i].setInternalMarks(internalMarksArray);



        int[] externalMarksArray = new int[5];
        System.out.println("Enter external marks for 5 courses: ");
        for (int j = 0; j < 5; j++) {
            externalMarksArray[j] = scanner.nextInt();
        }
        externalStudents[i].setExternalMarks(externalMarksArray);
    }
    System.out.println("\nFinal Marks for Students:");
    for (int i = 0; i < n; i++) {
        System.out.println("\nStudent " + (i + 1) + ": " + externalStudents[i].getName() + " ("
+ externalStudents[i].getUsn() + ")");
        int[] finalMarks =
externalStudents[i].getFinalMarks(internalMarks[i].getInternalMarks());
        System.out.println("Semester: " + externalStudents[i].getSem());
        System.out.println("Final Marks: ");
        for (int j = 0; j < 5; j++) {
            System.out.println("Course " + (j + 1) + ": " + finalMarks[j]);
        }
    }
    scanner.close();
  }
}
```

```
D:\24BMSCE>java Main
Enter number of students: 1

Enter USN for student 1: 11234
Enter name for student 1: anupriyaa
Enter semester for student 1: 3
Enter internal marks for 5 courses:
21
22
23
24
25
Enter external marks for 5 courses:
89
90
91
92
93

Final Marks for Students:

Student 1: anupriyaa (11234)
Semester: 3
Final Marks:
Course 1: 110
Course 2: 112
Course 3: 114
Course 4: 116
Course 5: 118
```