INTERNALS.JAVA

```
package CIE;
import java.util.Scanner;
public class Internals extends Student {
  protected int[] marks = new int[5]; // Marks for 5 courses
  public void inputCIEmarks() {
    Scanner scanner = new Scanner(System.in);
    System.out.println("Enter Internal marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
       System.out.print("Enter marks for Course " + (i + 1) + ": ");
       marks[i] = scanner.nextInt();
    }
  }
  public void displayCIEmarks() {
    System.out.println("Internal Marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
       System.out.println("Course " + (i + 1) + ": " + marks[i]);
    }
  }
}
```

STUDENT.JAVA

```
package CIE;
import java.util.Scanner;
public class Student {
  protected String usn;
  protected String name;
  protected int sem;
  public void inputStudentDetails() {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter USN: ");
    usn = scanner.nextLine();
    System.out.print("Enter Name: ");
    name = scanner.nextLine();
    System.out.print("Enter Semester: ");
    sem = scanner.nextInt();
  }
  public void displayStudentDetails() {
    System.out.println("USN: " + usn);
    System.out.println("Name: " + name);
    System.out.println("Semester: " + sem);
  }
}
```

EXTERNALS.JAVA

```
package SEE;
import CIE.Internals;
import java.util.Scanner;
public class Externals extends Internals {
  protected int[] externalMarks = new int[5];
  protected int[] finalMarks = new int[5];
  public Externals() {
    marks = new int[5];
    externalMarks = new int[5];
    finalMarks = new int[5];
  }
  public void inputSEEmarks() {
    Scanner scanner = new Scanner(System.in);
    System.out.println("Enter External marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
      System.out.print("Enter marks for Course " + (i + 1) + ": ");
       externalMarks[i] = scanner.nextInt();
    }
  }
  public void calculateFinalMarks() {
    for (int i = 0; i < 5; i++) {
      finalMarks[i] = marks[i] + externalMarks[i];
    }
  }
  public void displayFinalMarks() {
    displayStudentDetails();
    displayCIEmarks();
    System.out.println("Final Marks (Internal + External) for 5 courses:");
    for (int i = 0; i < 5; i++) {
      System.out.println("Course" + (i + 1) + ": " + finalMarks[i]);
    }
MAIN.JAVA
import SEE.Externals;
import java.util.Scanner;
public class Main {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter the number of students: ");
    int n = scanner.nextInt();
    Externals[] students = new Externals[n];
```

```
for (int i = 0; i < n; i++) {
    students[i] = new Externals();

    System.out.println("Enter details for student " + (i + 1));
    students[i].inputStudentDetails();
    students[i].inputClEmarks();
    students[i].inputSEEmarks();
    students[i].calculateFinalMarks();
}
for(int i=0; i<n; i++){
    students[i].displayFinalMarks();
    System.out.println();
}
}</pre>
```

```
D:\1BM23CS321\Package>java Main.java
Enter the number of students: 1
Enter details for student 1
Enter USN: 1BM23CS321
Enter Name: Shreyas
Enter Semester: 3
Enter Internal marks for 5 courses:
Enter marks for Course 1: 45
Enter marks for Course 2: 43
Enter marks for Course 3: 48
Enter marks for Course 4: 50
Enter marks for Course 5: 39
Enter External marks for 5 courses:
Enter marks for Course 1: 45
Enter marks for Course 2: 50
Enter marks for Course 3: 44
Enter marks for Course 4: 34
Enter marks for Course 5: 41
USN: 1BM23CS321
Name: Shreyas
Semester: 3
Internal Marks for 5 courses:
Course 1: 45
Course 2: 43
Course 3: 48
Course 4: 50
Course 5: 39
Final Marks (Internal + External) for 5 courses:
Course 1: 90
Course 2: 93
Course 3: 92
Course 4: 84
Course 5: 80
```

O Create Package CIE which has two classes - Records and Internale.

The class personal has members like use name, som.

The class internals how an array that stores the internal marks scored in 5 cources of the current semester.

Create 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 fine courses of the current semester of the student.

(*) Student . Java

package CIE; whole with philipsesson between of import java util. Scanner,

public class Student & the solid state protected String went from between two the protected String name;

protected string name;

protected uit sem;

public void input Student Details () {

Scanner sc = new Scanner (System.in);

System.out.print ("Enter vert:");

vsn = sc. nextline ();

System.out.print ("Enter Name:");

name = sc. nextline ();

System.out.print ("Enter Semester:");

sem = sc. nextInt();

Enter Amount to deposit: 10000

public void display Details () {

System. out. println ("VSN:" + vsn);

System. out. println ("Name:"+ name);

System. out. println ("Semester:"+ sem);

* Intern

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                package CIE;
                                                            package SEE;
               import j'ava. util . Scanner;
                                                 import cit. Intunals :
               public class Internals extends Student [ ditu . Dasi tragent
               public EME This was a should external Marks = new Wit [6] 3
                ELET Just opublicational input Marke () Letestang
                                   Scanner sc. = new Scanner (system. in);
                                    System Jour printin ("Futur Jutunas marks:");
                              : [3] for Cint i=0; 1<=5; i++) {
                       : [ = ] dry aun = who system wout. println ("Eutu manks:");
                      : [3] this aux = strong marks of [1] = sc. next Int();
                            public void input SEE Houles 63 &
           : (M. motage) a public avoid display marks () {
              : (": Exhan netvil") willystentout printen ("Internal Marks are: ");
          f (++i : a foir : Cint 15 0 0 0 14+) f

1 (++i) + " Enter Marke" + (i+1) + ":"+

1 ("course" + (i+1) + ":"+
       ct(1+i)
         external Marks [6] = 00. worklist();
                                                                        · marks [i])-
                   public void calculate Final Marke (1) f
                  } (++; : 3 > : 0 = ; thi) rot
            final Marks [[] = marks[]+
   external Marketi
                     public void display Final Marka () [
                   display Student Detaile ():
                        display CIEManks ();
 System. out printle ("Final Marke:");
                for ( first i=0 s it 5 ; i+1) of
System ("Cowise" + (++1) + ":")
```

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         * Externals.java
                                                                                 (#)M
                                                           ¿ package GIE;
               package SEE;
                                            import java. with Sammers
               import CIE. Internals:
               import java. util. Scanner is shorter should shall shall silding
               public class Extends extends Internals &
                         protected int [] external Marks = new int [5];
                         protected int [] final Marks = new int [5];
           Scannic sc. = new Scannic (system.in);
        ¿ (": 2000 m Lowet of public ) Externals Wolmolay &
                    First amarks = new int [5];
     : (": 24 rem with 3") whiting the external Marks = new int [5];
             : ( del trav se 13 final Marks = new int [5];
                     public void input SEE Marks () {

Scanner (System.in);
   : (" : and whole domain! " wisystem out printle ("Enter Marks:");
                   1.C++1 ( 3 ) for ( int 11 0; 12 5; 1++) {
  +": "+(2+2) +" 325 was" ) while of two water 2 System. out. prentln ("Enter Marke"+
1 - (11) adress .
                                                                     (i+1));
                                        external Marks [i] = sc. next Int();
                     public void calculate Final Marks () {
                                for (int i=0; i<5; i++) {
                                        final Marks [i] = marks [i]+
                                                               external Marky [i]
                  3
                   public void display Final Marks () {
                              display Student Details ();
                              display CIEMarks ();
System. out println ("Final Marks:");
                              for ( int i=0; i(5; i++) {
                                       gystem ("Course" + (i+1) + ":");
```

```
(#) Main. Java
     import SEE. Externals;
                                                      Output =
                              Enter Number of Staduck: # :
            java-util. Scanner;
     import
     public class Main & f
                                             Name : Structures
               public static void main (String [Targs) {
Scanner sc= new Scanner (System in);
                           System out printles ("Enter the number:");
                           int n = sc. next Int();
                           Externals [] students = new Externals [n];
                           for c int i= 0; i<n; i++) {
                                  Student [i] = new Externals () ;
                                  System. out. printly ("Details");
                                  Studius [i] input Details ();
                                  students [i] input Marke ();
                                  Students [i] SEEMarks ();
                                  Students [[] colculate Total ();
                           3
                                     rounce B: NA
                                     colone 4: 34
                          for Cint 1= 0; 10 n 11+1) 1
                                   Students [i] . display Final ();
                  : ( levretx3 + system-out printing):
                                  course 1: 90
                                  courise 2: 33
                                  COUNTRY B: 92
                                 course 4: 84
                                 08:3 SW
```

