

Lab

Create a package CIE which has two classes - Student and Internals. The class Student has members like usn, name, sem. The class Internals derived from Student 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.

```
package CIE;  
import java.util.Scanner;  
public class Student {  
    public String usn, name;  
    public int sem;  
  
    public void inputStudentDetails() {  
        Scanner sc = new Scanner(System.in);  
        S.o.p("Enter the student usn:");  
        usn = sc.nextLine();  
        S.o.p("Enter the student name:");  
        name = sc.nextLine();  
        S.o.p("Enter student semester:");  
        sem = sc.nextInt();  
    }  
}
```



```
public void display() {  
    S.o.p("Student USN: " + usn);  
    S.o.p("Student Name: " + name);  
    S.o.p("Student Sem: " + sem);  
}
```

```
package CIE;  
import java.util.Scanner;  
public class Internals extends Student {  
    public int marks[] = new int[5];  
    public void inputCIEMarks() {  
        Scanner sc = new Scanner(System.in);  
        for (int i = 0; i < 5; i++) {  
            S.o.p("Enter the marks for subje-  
-ct " + (i+1) + ":");  
            marks[i] = sc.nextInt();  
        }  
    }  
}
```

```
package SEE;  
import CIE.Internals;  
import java.util.Scanner;  
public class Externals extends CIE.Internals {  
    public int marks[] = new int[5];  
    public int finalMarks[] = new int[5];  
  
    public void getSEEMarks() {
```



```
Scanner sc = new Scanner(System.in);  
for (int i = 0; i < 5; i++) {  
    System.out.println("Enter " + (i + 1) + " marks:");  
    marks[i] = sc.nextInt();  
}
```

{

```
public void calculateFinalMarks() {  
    for (int i = 0; i < 5; i++) {  
        finalMarks[i] = marks[i] / 2 + super.marks[i];  
    }  
}
```

```
public void displayFinalMarks() {  
    for (int i = 0; i < 5; i++) {  
        System.out.println("Marks of " + (i + 1) +  
            " subject : " + finalMarks[i]);  
    }  
}
```

{

{

```
import SEE.Externals;
```

```
class PackageMain {
```

```
    public static void main(String args[]) {
```

```
        int numOfStudent = 2;
```

```
        Externals finalMarks[] = new Externals[numOf  
            Student];
```



```
for(int i = 0; i < numOfStudent; i++) {  
    finalMarks[i] = new Externals();  
    finalMarks[i].getStudentInfo();  
    System.out.println("Enter CIE Marks:");  
    finalMarks[i].getCIEMarks();  
    System.out.println("Enter SEE Marks:");  
    finalMarks[i].getSEEMarks();  
}
```

```
System.out.println("Displaying data:");  
for(int i = 0; i < numOfStudent; i++) {  
    finalMarks[i].display();  
    finalMarks[i].calculateFinalMarks();  
    finalMarks[i].displayFinalMarks();  
}
```

}

}

Output:

```
E:\Engineering\3Sem\OOPS > javac CIE/Student.java  
E:\Engineering\3Sem\OOPS > javac CIE/Internals.java  
E:\Engineering\3Sem\OOPS > javac SEE/Externals.java  
E:\Engineering\3Sem\OOPS > javac PackageMain.java  
E:\Engineering\3Sem\OOPS > java PackageMain  
Enter student usn: 2023BMS02541  
Enter student name: Shreya Patil  
Enter student semester: 3  
Enter CIE Marks:
```


Enter 1 marks : 45

Enter 2 marks : 44

Enter 3 marks : 46

Enter 4 marks : 42

Enter 5 marks : 49

Enter SEE Marks :

Enter 1 marks : 98

Enter 2 marks : 95

Enter 3 marks : 96

Enter 4 marks : 88

Enter 5 marks : 85

Enter student usn : 457CS220071

Enter student name : Shravan Patil

Enter student semester : 3

Enter CIE Marks :

Enter 1 marks : 50

Enter 2 marks : 49

Enter 3 marks : 48

Enter 4 marks : 45

Enter 5 marks : 45

Enter SEE Marks :

Enter 1 marks : 98

Enter 2 marks : 96

Enter 3 marks : 95

Enter 4 marks : 98

Enter 5 marks : 100

Displaying Data :

Student Name: Shreyas Patil

Student USN: 2023BMS02541

Semester: 3

Marks of 1 subject: 94

Marks of 2 subject: 91

Marks of 3 subject: 94

Marks of 4 subject: 86

Marks of 5 subject: 91

Student Name: Shravan Patil

Student USN: 457CS220071

Semester: 3

Marks of 1 subject: 99

Marks of 2 subject: 97

Marks of 3 subject: 95

Marks of 4 subject: 94

Marks of 5 subject: 95

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