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lab-07

Create a package CIE which has 2 classes - Student and Internal. The class Student has members like usn, name, sem. The class Internal derived from Student has an array that stores the internal semester of the student. Create another package SEE which has class internal which is a derived class of Student. This class has an array that stores the SEE marks stored in five courses of 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);
        System.out.println("Enter the student usn:");
        usn = sc.nextLine();
        System.out.println("Enter the student name:");
        name = sc.nextLine();
        System.out.println("Enter student semester:");
        sem = sc.nextInt();
    }
    public void display() {
        System.out.println("Student USN: " + usn);
        System.out.println("Student Name: " + name);
        System.out.println("Student Sem: " + sem);
    }
}
```



```

    }
}

package CSE;
import java.util.Scanner;
public class Internals extends Student {
    public int marks[] = new int[5];
    public void inputCSEmarks() {
        Scanner sc = new Scanner(System.in);
        for (int i = 0; i < 5; i++) {
            System.out.println("Enter marks for subject "
                               + (i + 1) + ": ");
            marks[i] = sc.nextInt();
        }
    }
}

```

```

}

package SEE;
import CSE. marks Internals;
import java.util.Scanner;
public class Externals extends CSE. Internals {
    public int marks[];
    public int finalMarks[];

    public Externals() {
        marks = new int[5];
        finalMarks = new int[5];
    }

    public void inputSEEMarks() {
        Scanner sc = new Scanner(System.in);
        for (i = 0; i < 5; i++) {

```



```
System.out.println("Enter subject " + (i+1) + " mark");
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()
```

```
{
    inputStudentDetails()
```

```
for(i=0; i<5; i++)
```

```
{
    System.out.println("subject" + (i+1) + "finalmark;"
        + finalMarks[i]);
}
```

```
}
import SEE.Externals;
class PackageMain {
```

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

```
{
    int numofstudents = 2;
```

```
ExternalFinalMarks[] = new ExternalFinalMarks[numofstudents];
```

```
for(int i=0; i<numofstudents; i++)
```

```
{
    finalMark[i] = new External();
```

```
finalMarks[i].inputStudentDetails();
```

```
System.out.println("Enter CTS marks:");
```



```

finalMarks[i].inputCIE marks();
System.out.println("Enter SEE marks:");
finalMarks[i].inputSEE marks();
}

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

```

O/P: Enter number of students : 3.

Student usn : IBM2867

Student name : Saakshi

Student Semester : 3.

Enter the subject marks 1 : 45

Enter the subject marks 2 : 50

Enter the subject marks 3 : 48

Enter the subject marks 4 : 36

Enter the subject marks 5 : 39

Enter the subject marks 1 : 89

Enter the subject marks 2 : 85

Enter the subject marks 3 : 91

Enter the subject marks 4 : 94

Enter the subject marks 5 : 91

Enter student usn : IBM2789

Student name : Nidhi

Student Semester : 3.

Enter subject marks 1 : 43

Enter subject marks 2 : 34

Enter subject mark 3: 45

Enter subject marks 4: 42

Enter subject marks 5: 37

Enter subject mark 1: 78

Enter subject mark 2: 76

Enter subject mark 3: 87

Enter subject mark 4: 98

Enter subject mark 5: 91

Student usn: IBM5621

Student name: Akshatka

Student semester: 7

Enter subject mark 1: 40

Enter subject mark 2: 42

Enter subject mark 3: 49

Enter subject mark 4: 58

Enter subject marks 5: 35

Enter subject mark 1: 89

Enter subject mark 2: 94

Enter subject mark 3: 92

Enter subject mark 4: 87

Enter subject mark 5: 79

Total marks of Student 1 (out of 100) is:

Subject 1 : 89

Subject 2 : 92

Subject 3 : 96

Subject 4 : 86

Subject 5 : 81

Total marks of Student 2 (out of 100) is:

Subject 1: 82

Subject 2: 72

Subject 3: 88

Subject 4: 91

Subject 5: 82

Total marks of student 3 (out of 100) is:

Subject 1: 84

Subject 2: 89

Subject 3: 95

Subject 4: 81

Subject 5: 74