Lab 6:

6. Create a package CIE which has two classes- Student 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 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.

Lab 6:

Create a package CIE which has two class-Student 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 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;

public class Student {
    protected String usn;
    protected string name;
    protected int sem;

    public Student (String usn, String name, int sem) {
        this.usn = usn;
        this.name = name;
        this.sem = sem;
    }

    public void displayDetails() {
        System.out.println("USN :" + usn + ", Name :" + name +
        ", Semester : " + sem);
    }
}


package CIE;
public class Internals {
    protected int[] internalMarks;

    public Internals (int[] internalMarks) {
        this.internalMarks = internalMarks;
    }
}
```

```java
    public void displayInternalMarks() {
        System.out.println(" Internal Marks : ");
        for (int i = 0; i < internalMarks.length; i++) {
            System.out.println(" course" + (i+1) + " : " +
                    internalMarks[i] + " ");
        }
        System.out.println();
    }
}
```

```java
package SEE;
import CIE.Student;
import CIE.Internals;

public class External extends Student {
    private int[] internalMarks;

    public External(String usn, String name, int sem,
            int[] internalMarks, int[] externalMarks) {
        super(usn, name, sem);
        this.internalMarks = internalMarks;
        this.internalMarks = internalMarks;
    }

    public void displayExternalMarks() {
        System.out.println(" External Marks : ");
        for (int i = 0; i < externalMarks.length; i++) {
            System.out.println(" course" + (i+1) + " : " +
                    externalMarks[i] + " ");
        }
        System.out.println();
    }

    public void displayFinalMarks() {
        System.out.println("Final Marks (Internal + External) : ");
        for (int i = 0; i < internalMarks.length; i++) {
            int finalMark = internalMarks[i] + externalMarks[i];
            System.out.println(" course" + (i+1) + " : " + finalMark + " ");
        }
    }
```

```java
}
}

import CIE.*;
import SEE.*;
import java.util.Scanner;

public class StudentMarks {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println(" Enter the number of students :");
        int n = sc.nextInt();
        External[] students = new External[n];

        for (int i = 0; i < n; i++) {
            System.out.println(" \n Enter details for student" + (i+1));
            System.out.println(" Enter USN :");
            String usn = sc.nextLine();
            System.out.println(" Enter Name :");
            String name = sc.nextLine();
            System.out.println(" Enter Semester :");
            int sem = sc.nextInt();

            int[] internalMarks = new int[5];
            System.out.println(" Enter Internal Marks for 5 courses");
            for (int j = 0; j < 5; j++) {
                internalMarks[j] = sc.nextInt();
            }

            int[] externalMarks = new int[5];
            System.out.println(" Enter External Marks for 5 courses:");
            for (int j = 0; j < 5; j++) {
                externalMarks[j] = sc.nextInt();
```

```java
            students[i].displayDetails();
            students[i].displayInternalMarks();
            students[i].displayExternalMarks();
            students[i].displayFinalMarks();
        }
    }
}
```

Output:

```
Enter the number of Students:
1

Enter details for Student 1
Enter USN : 16M18CS101
Enter Name : John Doe
Enter Semester : 5

Enter Internals Marks for 5 courses:
80  85  90  88  92
Enter External Marks for 5 courses:
75  80  85  78  90

USN : 16M18CS101 , Name : John Doe , Semester : 5
Internal Marks :
course 1 : 80   course 2 : 85   course 3 : 90   course 4 : 88
course 5 : 92

External Marks :
course 1 : 75   course 2 : 80   course 3 : 85   course 4 : 78
course 5 : 90

Final Marks (Internal + External) :
course 1 : 155   course 2 : 165   course 3 : 175   course 4 : 166
course 5 : 182
```

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Lab 7:
write a prog...
int static ...
class called...
implement a...
arrays...
Constructor...
son's age...

class Wron...
    publi...

}
class Fat...
    pro...
    pub...

}
class Stu...
    p...
    p...

Code:

```java
package CIE;

import java.util.Scanner;

public class Student {

    String usn;

    String name;

    int sem;

    public void getd() {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter student USN");

        usn = sc.nextLine();

        System.out.println("Enter student name");

        name = sc.nextLine();

        System.out.println("Enter semester");

        sem = sc.nextInt();

    }

    public void display() {

        System.out.println();

        System.out.println("Student USN: "+usn);

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

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

        System.out.println();

    }

}

package CIE;

import java.util.Scanner;

public class Internals {

    public int marksCie[] = new int[5];

    public void getMarks() {

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

```java
                Scanner sc = new Scanner(System.in);

                System.out.println("Enter CIE marks in subject "+(i+1));

                marksCie[i]=sc.nextInt();

        }

    }

    public int returnCieMarks(int i) {

        return marksCie[i];

    }

}

package SEE;

import CIE.Student;

import CIE.Internals;

import java.util.Scanner;

public class Externals extends Student {

    int marksSee[] = new int[5];

    public void getMarks() {

        for(int i=0;i<5;i++) {

            Scanner sc = new Scanner(System.in);

            System.out.println("Enter SEE marks in subject "+(i+1));

            marksSee[i]=sc.nextInt();

        }

    }

    public void calcTotalMarks(Internals i1) {

        for(int i=0;i<5;i++) {

            System.out.println("Subject "+(i+1)+": "+(i1.returnCieMarks(i)+(marksSee[i]/2)));

        }

        System.out.println();


    }

}
```

```java
import CIE.Student;
import CIE.Internals;
import SEE.Externals;
import java.util.Scanner;
public class Main {
        public static void main(String args[]) {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter the number of students whose details you want to enter");
                int n = sc.nextInt();
                Internals[] i1 = new Internals[n];
                Externals[] e1 = new Externals[n];
                for(int i=0;i<n;i++) {
                        System.out.println("Student "+(i+1)+" details:");
                        e1[i] = new Externals();
                        i1[i] = new Internals();
                        e1[i].getd();
                        i1[i].getMarks();
                        e1[i].getMarks();
                }
                for(int i=0;i<n;i++) {
                        e1[i].display();
                        e1[i].calcTotalMarks(i1[i]);
                }

        }
}
```

Output:

```
D:\package>java Main
Enter the number of students whose details you want to enter
2
Student 1 details:
Enter student USN
1BM23CS330
Enter student name
Sinchana Hemanth
Enter semester
3
Enter CIE marks in subject 1
45
Enter CIE marks in subject 2
49
Enter CIE marks in subject 3
48
Enter CIE marks in subject 4
40
Enter CIE marks in subject 5
50
Enter SEE marks in subject 1
95
Enter SEE marks in subject 2
98
Enter SEE marks in subject 3
90
Enter SEE marks in subject 4
100
Enter SEE marks in subject 5
100
Student 2 details:
Enter student USN
1BM23CS317
Enter student name
Shreya Raj
Enter semester
3
Enter CIE marks in subject 1
48
Enter CIE marks in subject 2
40
Enter CIE marks in subject 3
50
Enter CIE marks in subject 4
45
Enter CIE marks in subject 5
42
Enter SEE marks in subject 1
100
Enter SEE marks in subject 2
90
Enter SEE marks in subject 3
96
Enter SEE marks in subject 4
92
Enter SEE marks in subject 5
90
```

```
Student USN: 1BM23CS330
Student name: Sinchana Hemanth
Semester: 3

Subject 1: 92
Subject 2: 98
Subject 3: 93
Subject 4: 90
Subject 5: 100


Student USN: 1BM23CS317
Student name: Shreya Raj
Semester: 3

Subject 1: 98
Subject 2: 85
Subject 3: 98
Subject 4: 91
Subject 5: 87


D:\package>
```