LAB -6

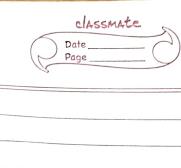8) Create a package CIE which has 2 classes students and internals. The class students has member like USN, name, sem. The class Internals derived from students has an array that stores the internal marks scored in 5 courses of the current semester of the student. Create another package SGE which has the class External which is a derived class of Student. This class has an array that stores the SEE marks scored in 5 courses of the current semester of the student. Import the two packages in a file that declares the final marks of n students of all 5 courses.

Input:
in file student.java

```java
package CIE ;
import java. util. Scanner ;
public class Student {
    protected String usn = new String ();
    protected String name = new String ();
    protected int sem;


    public void inputStudentDetails() {
        Scanner scanner = new Scanner (System. in);

        System. out. println ("Enter USN: ");
        usn = scanner. nextLine();
        System. out. println ("Enter name ");
        name = scanner. nextLine ();
        System. out. println ("Enter semester");
        sem = scanner. nextInt ();
```
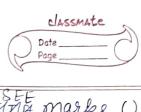
3

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

Internals files.java.

```java
package CIE;

import java.util.Scanner;

public class Internals extends Student{
    protected int marks[] = new int[5];

    public void inputCIEMarks(){
        Scanner dcanner = new Scanner
                            (System.in);

        System.out.println("Enter CIE marks for"
            name + ":");
        for(int i=0; i<5; i++){
            System.out.println("Enter marks
            Subject "+ (i+1) +": ");
            marks[i] = scanner.nextInt();
        }
    }
}
```

Externals.java final.

P.T.O.

```java
package SEE;

import CIE.Internals;
import java.util.Scanner.

public class Externals extends Internals {
    protected int marks[];
    protected int finalmarks[];

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

    public void inputSEEmarks () {
        Scanner scanner = new Scanner (System.in);

        System.out.println ("Enter SEE mar
        -ks for "+ name + ":");
        for (int i = 0; i<5; i++ ) {
            System.out.println ("Enter
            marks for subject "+(i+1) + ":");
            marks [i] = scanner.nextInt();
        }
    }
}

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

```java
public void displayFinalMarks(){
    displayPerStudentDetails();
    System.out.println("Final marks");
    for (int i = 0; i<5; i++){
        System.out.println("Subject "+(i+1)+"
        finalMarks[i]);
    }
}
```

Main.java

```java
import SEE.Externals;

public class Main {
    public static void main(String args[]){
        int numOfStudents =2;
        Externals finalMarks[] = new Externals
        [num of Students];

        for (int i=0; i< numOfStudents; i++){
            final marks[i] = new Externals();
            final Marks[i].input Studentdetails()
        }

        for (int i=0; i< numOfStudents; i++){
            finalMarks[i] = new Externals();
            final marks[i].input Student
            Details();

            System.out.println("Enter CIEmarks
            for "+ finalmarks[i].name);

            finalMarks[i].input CIEMarks();

            System.out.println("Enter the SEE
            marks();
        }
```

```
        finalMarks [i]. input data marks ();
                                    SEE
    }

    System.out.println ("Displaying data :\n");

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

        finalMarks[i]. calculateFinalMarks ();

        finalMarks[i]. displayFinalMarks ();
    }
  }
}
```

OUTPUT:-

Enter the no. of students.

1
Enter the name USN
1BM22CS 229

Enter the name.
S Rakhol
Enter the Semester
3
Enter the marks for subject 1:
50
Enter the (marks for Subject 2:
50
Enter the marks for Subject 3:
50
Enter the marks for Subject 4:
50

Enter the marks for Subject 5.
50
Enter SEE marks
Subject 1 marks : 60
Subject 2 marks : 50
Subject 3 marks : 50
   ''   4   ''   : 50
  -' '   5   ''   : 50.

Displaying data.
Name : S Rakhal
Subject 1 : 75
   ''   2 : 75
   ''   3 : 75
   ''   4 : 75
   ''   5 : 75