

Lab - 6

Create a package CTE which has two classes - Student and Internals. The class Student has members like vsn, 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 STC 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.

```
//Student.java
package CTE;
import java.util.*;
public class student
{
    protected String vsn = new String();
    protected String name = new String();
    protected int sem;

    public void inputStudentDetails()
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter student VSN");
        vsn = sc.nextLine();
        System.out.println("Enter student name");
        name = sc.nextLine();
        System.out.println("Enter student sem");
        sem = sc.nextInt();
    }
}
```

```
name = sc.next();
System.out.println("Enter Semester");
sem = sc.nextInt();
```

3

```
public void displayStudentDetails()
```

```
System.out.println("Student id: " + id);
```

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

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

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```
// Internals.java
```

```
package CIE;
```

```
import java.util.*;
```

```
public class Internals extends Student
```

```
protected int marks[] = new int[5];
```

```
public void input(CIE marks)
```

{

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

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

```
System.out.println("Enter 5 subject  
marks");
```

```
marks[i] = sc.nextInt();
```

3

```
11 External.java  
package SEE;  
import CIE.Internals;  
import java.util.Scanner;  
public class External extends Internals  
{  
    protected int marks[];  
    protected int finalmarks[];  
    public External()  
    {  
        marks = new int[5];  
        finalmarks = new int[5];  
    }  
    public void input SEE marks()  
    {  
        Scanner sc = new Scanner(System.in);  
        for(int i=0; i<5; i++)  
            System.out.println("Subject " + (i+1) + "  
            marks:");  
        marks[i] = sc.nextInt();  
    }  
    public void calculate Final marks()  
    {  
        for(int i=0; i<5; i++)  
            finalMarks[i] = marks[i]/2 + super.marks();  
    }  
    public void display Final marks()  
    {  
        System.out.println("Final marks:");  
        for(int i=0; i<5; i++)  
            System.out.println("Subject " + (i+1) + "  
            marks: " + finalMarks[i]);  
    }  
}
```

```

display Student Details();
for(int i=0; i<5; i++)
{
    System.out.println("Subject " + (i+1) + final marks[i]);
}
}

// Main.java
import SEE.Externals;
class Main {
    public static void main(String args[])
    {
        int num of students = 2;
        Externals final Marks[] = new Externals[num of students];
        for(int i=0; i< num of students; i++)
        {
            final Marks[i] = new Externals();
            final Marks[i].input student Details();
            System.out.println("Enter LIE marks");
            final Marks[i] = input LIE marks();
            System.out.println("Enter SEE marks");
            final Marks[i] = input SEE marks();
        }
        System.out.println("Displaying data : /n");
        for(int i=0; i< num of students; i++)
        {
            final Marks[i].calculate Final marks();
            final Marks[i].displayFinal marks();
        }
    }
}

```

Output

Enter student idn

13M02CS33

Enter student name

Sakshi

Enter student semester

3

Enter CIE marks

Enter 5 marks : 39

Enter 5 marks : 38

Enter 5 marks : 26

Enter 5 marks : 40

Enter 5 marks : 36

Enter SEE marks

Subject 1 marks : 78

Subject 2 marks : 89

Subject 3 marks : 90

Subject 4 marks : 87

Subject 5 marks : 92

Enter student idn

13M02CS23

Enter student name

Rani

Enter student semester

3

~~Enter CIE marks~~

~~Enter 5 marks : 39~~

~~Enter 5 marks : 38~~

~~Enter 5 marks : 30~~

~~Enter 5 marks : 30~~

~~Enter 5 marks : 25~~

Enter SEG marks

Subject 1 marks : 56

Subject 2 marks : 78

Subject 3 marks : 89

Subject 4 marks : 90

Subject 5 marks : 92

Displaying data

Student name : Sakshi B.R

Student usn : IBM22CS233

Student semester : 3

Subject 1 : 78

Subject 2 : 82

Subject 3 : 71

Subject 4 : 83

Subject 5 : 82

Student name : Rani B.R

Student usn : IBM22CS217

Student semester : 3

Subject 1 : 58

Subject 2 : 77

Subject 3 : 80

Subject 4 : 70

Subject 5 : 80

Sakshi B.R

IBM22CS233