SHLOK IYER
1BM22CS260

LAB-6

8) Create a package CIE which has two classes - Student and it's. The class Student has members like usn, name, sem. The class internals derived from Student has an arra that stores the internal marks scored in five courses of the current semester of the student. Create another pachage SEE which has the class Externals which is derived class of Student. This class has an array that stores the SEE marks stored 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.

// Inside cie 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 s = new Scanner(System.in)
        System.out.println("Enter the name :-");
        name = s.next();
        System.out.println("Enter the usn :");
        usn = s.next();
        System.out.println("Enter the semester :");
        sem = s.nextInt();

    }
```

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


//Internals.java inside cie
package cie;
import java.util.Scanner;
public class Internals extends Student
{
    protected int marks[] = new int[5];
    public void inputCIEmarks()
    {
        Scanner s = new Scanner(System.in);
        for(int i=0; i<5; i++)
        {
            System.out.println("Enter the %d st/th subject marks");
            marks[i] = s.nextInt();
        }
    }
}
```

```java
// Externals.java   inside see
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 s=new Scanner(System.in);
            for(int i =0; i<5;i++)
            {
                System.out.println("Subject"+(i+1)+ "marks:");
                marks[i]=s.nextInt();
            }
        }
        public void calculateFinalMarks()
        {
            for(int i=0; i<5;i++)
                FinalMarks[i]=marks[i]/2 +super.marks[i];
        }
        public void displayFinalMarks()
        {
            displayStudentDetails();
            for(int i=0; i<5; i++)
                System.out.println("Subject"+(i+1)+": "+finalMarks[i])
}       }
```

```java
//mainfinals.java
import see.Externals;
public class mainfinals
{

    public static void main(String args[])
    {

        int numOfStudents = 2;
        Externals finalMarks[] = new Externals[numOfStudents];
        for(int i=0; i<num of Students; i++)
        {

            finalMarks[i] = new Externals();
            finalMarks[i].inputStudentDetails();
            System.out.println("Enter CIE marks");
            finalMarks[i].inputCIEmarks();
            System.out.println("Enter SEE marks");
            finalMarks[i].inputSEEmarks();

        }

        System.out.println("Display the final marks: \n");
        for(int i=0; i<numOfStudents; i++)
        {

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

Output:

Enter the name:
Shloh
Enter the Usn:
1BM22CS260

nter the semester:
2
enter cie marks:
enter the 1st/th subject mark : 45
enter the 2st/th subject mark = 46
enter the 3st/th subject mark : 35
enter the 4st/th subject marks : 44
enter the 5 st /th subject marks : 23

enter SEE marks
Subject 1 marks : 100
Subject 2 marks : 88
Subject 3 marks : 89
Subject 4 marks : 75
Subject 5 marks : 88

Enter the name :
Simon
Enter the usn :
1BM22CS277
Enter the semester :
2
Enter CIE marks
Enter the 1st/th subject mark : 12
Enter the 2st/th subject mark : 45
Enter the 3st/th subject mark : 23
Enter the 4st/th subject marks : 5
Enter the 5st/th subject marks = 33
Enter the SEE marks
Subject 1 marks : 100
Subject 2 marks : 12
Subject 3 marks : 23

Subject 4 marks : 56
Subject 5 marks : 100

Display the final marks :

Name := Shloh
usn := 1BM22CS260
sem :- 3
Subject 1 := 95
Subject 2 = 84
Subject 3 := 79
Subject 4 = 81
subject 5 := 67

Name := Simon
usn = 1BM22CS277
Sem = 3
Subject 1 := 62
Subject 2 := 51
Subject 3 := 34
Subject 4 : 33
Subject 5 := 83