14/11/24

Q. Create a package CIE which has two classes Student and Internals. The class internals has an array that stores the internal marks scored in 5 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 5 Courses of the current semester of the student. Import the two semeste packages in a file that declares the final marks of n students in all 5 courses.

```java
package CIE;
import java.util.Scanner;
public class student {
        protected String usn;
        protected String name;
        protected int sem;
        public void inputStudentDetails() {
                Scanner sc=new scanner(System.in);
                S.o.p("Enter usn:");
                usn=sc.nextLine();
                s.o.p("Enter name:");
                name=sc.nextLine();
                S.o.p("Enter sem:");
                sem=sc.nextInt();
        }
        public void displayStudentDetails() {
                s.o.p("USN:"+usn);
                s.o.p("Name:"+name);
                s.o.p("semester:"+sem);
        }
}
```

```java
package CIE;
import java.util.Scanner;
public class Internals extends student {
        protected int[] marks = new int[5];
```

```java
public void inputCIEMarks() {
    Scanner scanner = new Scanner(System.in);
    s.o.p("Enter internal marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
        s.o.p("Enter marks for course" + (i+1) + ":");
        marks[i] = scanner.nextInt();
    }
}

public void displayCIEMarks() {
    s.o.p("Internal marks for 5 courses:");
    for (int i = 0; i < 5; i++) {
        s.o.p("Course" + (i+1) + ": " + marks[i]);
    }
}

package SEE;
import java.util.Scanner;
import CIE.Internals;
public class Externals extends Internals {
    protected int[] externalMarks = new int[5];
    protected int[] externafinalMarks = new int[5];
    public Externals() {
        marks = new int[5];
        externalMarks = new int[5];
        finalMarks = new int[5];
    }
    public void inputSEEMarks() {
        Scanner sx = new Scanner(System.in);
        s.o.p("Enter external marks for 5 courses:");
        for (int i = 0; i < 5; i++) {
            s.o.p("Enter marks for course:" + (i+1) + ":");
            externalMarks[i] = sx.nextInt();
        }
    }
}
```

```java
                    calculateFinalMarks
public void inputStudentDetails() {

    Scanner sa = new Scanner(System.in);
    s.o.p("Enter usn:");
    USA = sa.nextLine();
    for(int i=0; i<5; i++) {
        finalMarks[i] = marks[i] + externalMarks[i];
    }
}

public void displayFinalMarks() {
    displayStudentDetails();
    displayCIEMarks();
    s.o.p("Final marks (Internal + External) for 5 courses:");
    for(int i=0; i<5; i++) {
        s.o.p("Course" + (i+1) + ": " + finalMarks[i]);
    }
}
}

import SEE.Externals;
import java.util.Scanner;
public class Main {
    psvm(String[] args) {
        Scanner sv = new scanner(System.in);
        s.o.p("Enter the number of students:");
        int n = sv.nextInt();
        Externals[] students = new Externals[n];
        for(int i=0; i<n; i++) {
            Students[i] = new Externals();
            s.o.p("Enter details for students " + (i+1));
            students[i].inputStudentDetails();
            students[i].input CIEMarks();
            Students[i].input SEEMarks();
            Students[i].calculateFinalMarks();
        }
        for(int i=0; i<n; i++) {
            student[i].displayFinalMarks();
```

```
                    S.o.p();
            }
        }
    }
}

output:
Enter the number of students: 1
Enter details for student 1
Enter USN: IBM23CS001
Enter name: Akash
Enter semester: 3
Enter Internal Marks for 5 courses:
Enter marks for Course 1: 40
Enter marks for course   2: 36
                         3: 38
                         4: 45
                         5: 49

Enter External marks for 5 courses:
Enter marks for Course 1: 49
                         2: 46
                         3: 42
                         4: 40
                         5: 38
USN: IBM23CS001
Name: Akash
Semester: 3
Internal Marks for 5 courses:
Course 1: 40
Course 2: 36
Course 3: 38
Course 4: 45
Course 5: 49
Final Marks (Internals + External) for 5 courses:
Course 1: 89
Course 2: 82
Course 3: 80
Course 4: 85
Course 5: 87
```

```java
package CIE;


import java.util.Scanner;
public class Student {

    protected String usn;

    protected String name;

    protected int sem;

    public void inputStudentDetails() {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter USN: ");

        usn = scanner.nextLine();

        System.out.print("Enter Name: ");

        name = scanner.nextLine();

        System.out.print("Enter Semester: ");

        sem = scanner.nextInt();

    }


    public void displayStudentDetails() {

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

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

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

    }
}



package CIE;
import java.util.Scanner;
public class Internal extends Student {

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

    public void inputCIEmarks() {

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

```java
        System.out.println("Enter Internal marks for 5 courses:");

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

            System.out.print("Enter marks for Course " + (i + 1) + ": ");

            marks[i] = scanner.nextInt();

        }

    }

    public void displayCIEmarks() {

        System.out.println("Internal Marks for 5 courses:");

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

            System.out.println("Course " + (i + 1) + ": " + marks[i]);

        }

    }

}




package SEE;


import CIE.Internal;

import java.util.Scanner;

public class External extends Internal {

    protected int[] externalMarks = new int[5];

    protected int[] finalMarks = new int[5];


    public External() {

        marks = new int[5];

        externalMarks = new int[5];

        finalMarks = new int[5];

    }


    public void inputSEEmarks() {

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

```java
        System.out.println("Enter External marks for 5 courses:");

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

            System.out.print("Enter marks for Course " + (i + 1) + ": ");

            externalMarks[i] = scanner.nextInt();

        }

    }


    public void calculateFinalMarks() {

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

            finalMarks[i] = marks[i] + externalMarks[i];

        }

    }


    public void displayFinalMarks() {

        displayStudentDetails();

        displayCIEmarks();

        System.out.println("Final Marks (Internal + External) for 5 courses:");

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

            System.out.println("Course " + (i + 1) + ": " + finalMarks[i]);

        }

    }

}



import SEE.External;

import java.util.Scanner;


public class Mainn {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the number of students: ");
```

```java
        int n = scanner.nextInt();

        External[] students = new External[n];

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

            students[i] = new Externals();

            System.out.println("Enter details for student " + (i + 1));

            students[i].inputStudentDetails();

            students[i].inputCIEmarks();

            students[i].inputSEEmarks();

            students[i].calculateFinalMarks();

        }

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

            students[i].displayFinalMarks();

            System.out.println();

        }

    }

}
```



```
C:\317\6_Packages>java Main
Enter the number of students: 1
Enter details for student 1
Enter USN: 1BM23CS001
Enter Name: Akash
Enter Semester: 3
Enter Internal marks for 5 courses:
Enter marks for Course 1: 40
Enter marks for Course 2: 36
Enter marks for Course 3: 38
Enter marks for Course 4: 45
Enter marks for Course 5: 49
Enter External marks for 5 courses:
Enter marks for Course 1: 49
Enter marks for Course 2: 46
Enter marks for Course 3: 42
Enter marks for Course 4: 40
Enter marks for Course 5: 38
USN: 1BM23CS001
Name: Akash
Semester: 3
Internal Marks for 5 courses:
Course 1: 40
Course 2: 36
Course 3: 38
Course 4: 45
Course 5: 49
Final Marks (Internal + External) for 5 courses:
Course 1: 89
Course 2: 82
Course 3: 80
Course 4: 85
Course 5: 87


C:\317\6_Packages>
```