Week 9

Create a package **CIE** which has two classes- **Student** and **Internals- a subclass of Student**. The class **Student** 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 **Internals**. 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.

File 1

package CIE;

public class Student{

    public int USN;

    public String Name;

    public int Sem;

    public void setdata(int USN1,String Name1, int Sem1){

        USN = USN1;

        Name = Name1;

        Sem = Sem1;

    }

    public void getd(){

        System.out.println("USN is : " + USN + "\nName is : " + Name + "\nSEM : " + Sem);

    }
}
File 2
package CIE;

public class internals extends Student{

```java
        public int [] marks = new int [5];
        public void Setd(int [] m){

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

                        marks[i] = m[i];

        }


        public void getda(){

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

                        System.out.println("Marks is : " + marks[i]);

        }
}
```

File 3

```java
package SEE;

import CIE.*;


public class External extends CIE.internals{
        public int [] Emarks = new int [5];
        public void Setda(int [] m){

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

                        Emarks[i] = m[i];

        }


        public void getdata(){

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

                        System.out.println("External Marks is : " + Emarks[i]);

                        System.out.println("Final marks is : "+ (Emarks[i]/2 + super.marks[i])
)

                }
}
```

File 4

```java
import java.util.Scanner;

import CIE.*;

import SEE.*;


class Lab_9{

    public static void main(String args[]){

        Scanner S = new Scanner(System.in);

        int marks[] = new int[5];

        System.out.print("\nEnter the number of students : ");

        int n = S.nextInt();

        External [] E = new External[n];

        System.out.println("Enter Student details ");

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

            int usn = S.nextInt();

            String name = S.nextLine();

            int sem = S.nextInt();


            System.out.println("Enter the internal marks of the student ");

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

                marks[j] = S.nextInt();

            }

            E[i] = new External();

            E[i].setdata(usn, name, sem);

            E[i].setd(marks);

            System.out.println("Enter the External marks of the student ");

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

                marks[k] = S.nextInt();
```

```
			}
			E[i].setda(marks);
			E[i].getd();
			E[i].getda();
			E[i].getdata();
		}
	}
}
```

OUTPUT

```
Enter number of students
1
Enter student details
1 aqw 2
Enter internal marks
12 12 12 12 12
Enter external marks
12 12 12 12 12
Student details
USN:1
NAME:aqw
SEMESTER:2
Internal marks
Subject 0: 12
Subject 1: 12
Subject 2: 12
Subject 3: 12
Subject 4: 12
External marks
Subject 0: 12
External marks
Subject 1: 12
External marks
Subject 2: 12
External marks
Subject 3: 12
External marks
Subject 4: 12
Final marks
Subject 0: 18
Subject 1: 18
Subject 2: 18
Subject 3: 18
Subject 4: 18
```

OBSERVATION

Week 8 9

Create 2 packages CIE & SEE. CIE with 2 Classes S
and Internals SEE with externals. Create a list g usi

File 1

```java
Package CIE;

Public class Student {
    int USN;
    String Name;
    int Sem;

    Public void setd(int USN1, String Name1, int Sem1){
        USN = USN1;
        Name = Name1;
        Sem = Sem1;
    }

    Public void getd(){
        System.out.println("USN:" + USN + " \n Nam:" + Name + "\n S
                                                         \n Sal
    }
}
```

```
Package CIE;

public class Internals extends Student {
    int [] marks = new int [5];
    public void setda (int [] a) {
        for (int i=0; i<5; i++) {
            marks [i] = a[i];
        }
    }
}

public void getda () {
    for (int i=0; i<5; i++) {
    System. out. println ("Marks of internals " + marks [i]);
    }
}
}
```

File 3 :

```java
Package SKE;
import CIE.*;

Public class Externals extends internals {
    int Emarks = new int[5];
    Public void setdata (int a[]) {
        for (int i=0; i<5; i++) {
            Emarks[i] = a[i];
        }
    }

    Public void getdata() {
        for (int i=0; i<5; i++) {
            System.out.println("External marks : "+Emarks[i]);
        }
    }
}
```

File 4

```java
import Java.util.Scanner;
import CIE.*;
import SKE.*;

class lab9 {
    public static void main (String args[]) {
        Scanner S= new Scanner (System.in);
        System.out.println("Enter number of students: ");
        int n = S.nextInt();
        Externals[] ob = new External[n];
```

```
for (int i=0; i<n; i++) {
    System.out.Println ("Enter Student details : ");
    int USN = S.nextInt();
    String name = S.nextLine();
    int Sem = S.nextInt();

    E[i] = new External();
    E[i].setd (USN, name, Sem);

    System.out.println (" Enter internal marks : ");
    int m[] = new int [5];
    for (int j=0; j<5; i++)
        int [5] or m[j] = S.nextInt();
    }

    E[i].setda (an);

    System.out.println (" Enter External marks : ");

    for (int k=0; k<5; k++){
        m[k] = S.nextInt();
    }

    E[i].Setdata ();

}

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

    E[i].getd();
    E[i].getda();
    E[i].getdata();
}
```

```
System.out.println (" Final Marks ");
for (int j=0; j<5; j++) {

    System.out.println (" std (x[j]) .marks (i) + x[j] .marks );

}

}
```

Output

Enter number of Students
1
Enter details of Student
1 to 2
Enter External marks
15   15   15   15   1 5

Enter Internal marks
30   30   30   30   30

USN: 1
Name b
Sem 3
Internal marks   13/01/2023
15 15 15 15 15
External marks
30 30 30 30 30
Total marks
30 30 30 30 30