

## WEEK 6 :

Create a package CIE which has two classes- Student and Internals. The class Personal 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 Student. 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.

### Source Code :

```
import CIE.Internals; import
SEE.External; import
java.util.Scanner;
public class Studentmarks {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter number of students: ");    int n =
scanner.nextInt();    scanner.nextLine();

        Internals[] cieStudents = new Internals[n];
        External[] seeStudents = new External[n];
        for (int i = 0; i < n; i++) {

            System.out.println("Enter details for CIE Student " + (i + 1) + ":
");
            System.out.print("USN: ");
            String usn = scanner.nextLine();
            System.out.print("Name: ");
            String name = scanner.nextLine();
            System.out.print("Semester: ");    int sem =
scanner.nextInt();    int[] internalMarks = new int[5];
            System.out.println("Enter internal marks for 5 courses: ");    for (int j = 0; j < 5; j++)
{
                internalMarks[j] = scanner.nextInt();
            }
        }
    }
}
```

```

        }        cieStudents[i] = new Internals(usn, name, sem, internalMarks);
scanner.nextLine();

        System.out.println("Enter details for SEE Student " + (i + 1) + ":
");
        System.out.print("USN: ");        usn =
scanner.nextLine();        System.out.print("Name: ");
name = scanner.nextLine();
System.out.print("Semester: ");        sem =
scanner.nextInt();
        int[] externalMarks = new int[5];
        System.out.println("Enter external marks for 5 courses: ");        for (int j = 0; j < 5; j++) {
externalMarks[j] = scanner.nextInt();
        }        seeStudents[i] = new External(usn, name, sem, externalMarks);
scanner.nextLine();
    }

    System.out.println("\nFinal Marks for all students:");
    for (int i = 0; i < n; i++) {
        cieStudents[i].displayStudentDetails();
        cieStudents[i].displayInternalMarks();

        seeStudents[i].displayStudentDetails();
        seeStudents[i].displayExternalMarks();

        int[] internalMarks = cieStudents[i].getInternalMarks();        int[]
externalMarks = seeStudents[i].getExternalMarks();        int[] finalMarks = new int[5];
        for (int j = 0; j < 5; j++) {
            finalMarks[j] = internalMarks[j] + externalMarks[j];        }

        System.out.print("Final Marks: ");

```

```

        for (int mark : finalMarks) {
            System.out.print(mark + " ");
        }
        System.out.println("\n");
    }
    scanner.close();
}
}

```

```

package CIE;
public class Internals extends Student {
    private int[] internalMarks = new int[5];
    public Internals(String usn, String name, int sem, int[] internalMarks) {
        super(usn, name, sem); // Call parent constructor
        this.internalMarks = internalMarks;
    }

    public void displayInternalMarks() {
        System.out.print("Internal Marks: ");
        for (int mark : internalMarks) {
            System.out.print(mark + " ");
        }
        System.out.println();
    }

    public int[] getInternalMarks() {
        return internalMarks;
    }
}

```

```

package CIE; public class Student
{
    protected String usn;
    protected String name;
}

```

```

protected int sem;
public Student(String usn, String name, int sem) {    this.usn = usn;
this.name = name;    this.sem = sem;
}

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

```

```

package SEE;
import CIE.Student;
public class External extends Student {    private int[]
externalMarks = new int[5];
    public External(String usn, String name, int sem, int[] externalMarks) {        super(usn, name, sem);
this.externalMarks = externalMarks;
    }
    public void displayExternalMarks() {
System.out.print("External Marks: ");    for (int mark :
externalMarks) {
        System.out.print(mark + " ");
    }
    System.out.println();
}    public int[] getExternalMarks() {
return externalMarks;
    }
}

```

Output :

```
Enter number of students: 2
Enter details for CIE Student 1:
USN: 1
Name: sagar
Semester: 2
Enter internal marks for 5 courses:
38 40 41 45 46
Enter details for SEE Student 1:
USN: 1
Name: sagar
Semester: 2
Enter external marks for 5 courses:
39 42 45 50 48
Enter details for CIE Student 2:
USN: 2
Name: chetan
Semester: 3
Enter internal marks for 5 courses:
40 44 46 47 50
Enter details for SEE Student 2:
USN: 2
Name: chetan
Semester: 3
Enter external marks for 5 courses:
40 44 46 47 50

Final Marks for all students:
USN: 1, Name: sagar, Semester: 2
Internal Marks: 38 40 41 45 46
USN: 1, Name: sagar, Semester: 2
External Marks: 39 42 45 50 48
Final Marks: 77 82 86 95 94

USN: 2, Name: chetan, Semester: 3
Internal Marks: 40 44 46 47 50
USN: 2, Name: chetan, Semester: 3
External Marks: 40 44 46 47 50
Final Marks: 80 88 92 94 100
```

OBSERVATION:

Prgm: 6

14/11/24

Create a package CIE which has two classes - Student and Internal. The class Personal has members like USN, name, sem.

The class Internal 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 SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that displays the final marks of n students in all five courses.

```
package CIE ;  
import java.util.* ;  
public class Student  
{  
    public String USN;  
    public String Name;  
    public int sem;
```

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

```
    public void getd(){  
        System.out.println();  
        SC.nextLine();  
        System.out.println("Enter USN : ");  
        USN = SC.nextLine();
```

```

System.out.println("Enter name: ");
Name = sc.nextLine();
System.out.println("Enter sem: ");
sem = sc.nextInt();
}
public void putd() {
    System.out.println("USN: " + USN);
    System.out.println("Name: " + Name);
    System.out.println("Sem: " + Sem);
}
}

```

```

package CIE;
import java.util.*;
public class Internals;
Scanner sc = new Scanner(System.in);
public int marks[] = new int[5];
public void getd() {
    System.out.println("Enter CIE marks:");
    for (int i = 0; i < 5; i++) {
        marks[i] = sc.nextInt();
    }
}
public void getputd() {
    for (int i = 0; i < 5; i++) {
        System.out.println(marks[i] + " ");
    }
}
}

```



```

package SEE
import CIE.*;
import java.util.*;
public class External extends Student {
    Scanner sc = new Scanner(System.in);
    public int smarks[] = new int[5];
    public void getd() {
        System.out.println("Enter SEE marks");
        for (int i = 0; i < 5; i++) {
            smarks[i] = sc.nextInt();
        }
    }
}

```

```

    public void putd() {
        for (int i = 0; i < 5; i++) {
            System.out.println(smarks[i] + " ");
        }
    }

    public int finalmarks(int x, int smarks) {
        return marks + (smarks[x] / 2);
    }
}

```

```

import java.util.*;
import CIE.*;
import SEE.*;
class Main {
    public static void main (String [] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number of student");
        int n = sc.nextInt();
        Student s = new Student();
    }
}

```



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```

Internals IC[] = new Internals[n];
Externals EC[] = new Externals[n];
for (int i = 0; i < n; i++) {
    s.getd(i);
    s.putd(i);
    IC[i] = new Internals();
    IC[i].getd(i);
    IC[i].putd(i);
    EC[i] = new Externals();
    EC[i].getd(i);
    EC[i].putd(i);
}

```

```

System.out.println("Final Marks");
for (int j = 0; j < 5; j++) {
    int finalmarks = EC[i].getfinalmarks(
        j, IC[i].marks[j]);
}

```

```

System.out.println(finalmarks);
}
}
}

```

Enter number of student  
2

Enter USN:

IBM23CS292

Enter name:

Samirsha

Enter Sem :

3

USN : IBM23CS292

Name : Samudra

Sem : 3

Enter CIE marks :

20

21

22

23

24

Enter SEE marks

30

31

32

33

34

Final marks

35

36

38

39

41

Enter USN :

IBM 23A1018

Enter Name :

Sahana

Enter Sem :

3

USN : IBM23A10S8

Name : Sahana

Sem : 3

Enter CIE marks :

30

31

32

33

34

Enter SEE mark

30

31

32

33

34

~~3~~

Final marks

60

62

64

66

~~68~~

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