Date - 2/2/24

LAB - 6:

Que) Create a package CIE which has two classes - Student and Internals. The class Personal has an array members like usn, name, sem. The class internals has an array that stores the internal marks scored in the five courses of current semester of the student. Create another package SEE which has the class External which is a derived class of the student. The class has an array that stores the SEE marks scored in 5 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

```
package CIE;
import java.util.*;
public class Student {
    public int sem;
    public String usn;
    public String name;
    public void accept() {
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter usn, name, sem:");
        usn = scan.nextLine();
        name = scan.nextLine();
        sem = scan.nextInt();
    }
}
```

```
package CIE;

public class Internals {
    public int im[] = new int[5];
}
```

```
package SEE;
import CIE.Student;
public class External extends Student {
    public int sm[] = new int[5];
}
```

```
import java.util.*;
import SEE.*;
import CIE.*;
public class FinalMarks {String args[]) {
    int fm = new int[5];
    Scanner sc = new Scanner (System.in);
    System.out.println ("Enter n:");
    int n = sc.nextInt ();
    SEE.External st[] = new SEE.External[n];
    CIE.Internals s[] = new CIE.Internals[n];
    for (int i=0; i<n; i++) {
        st[i] = new SEE.External();
        s[i] = new CIE.Internals();
        System.out.println (" Enter details " + (i+1));
        st[i].accept ();
        for (int j=0; j<5; j++) {
            System.out.println (" Enter internal and external marks of
            sub " + (j+1));
            s[i].im[j] = sc.nextInt ();
            st[i].sm[j] = sc.nextInt ();
```

```
        fm[j] = (s[i].im[j] + st[i].sm[j])/2;
    }
    System.out.println("Final marks of " + st[i].name);
    for(int k=0; k<5; k++)
    {
        System.out.println("Course" + (k+1) + " = " + fm[k]);
    }
}
}
```

→ Algorithm :→

Step 1 :- Start

Step 2 :- Create a package CIE

Step 3 :- Create a class named Student with 3 variables sem, usn and name.

Step 4 :- Create a public method accept which reads sem, usn and name from input.

Step 5 :- Create another class Internals in package CIE.

Step 6 :- Declare an array im[] of type int which stores internal of size 5.

Step 7 :- Create another package SEE and create a class named External which is derived from Student class from package CIE.

Step 8 :→ Declare an array sm[] of type int and size 5 which stores SEE marks.

Step 9 :→ Create a file named FinalMarks and Import classes from package CIE and SEE into the main file.

Step 10 :→ create a class named FinalMarks

Step 11 :→ create(declare) an array fm of type int and size 5.

Step 12 :→ Read n (int) from the user (ie no. of students of which marks need to be entered),

Step 13 :→ Declare objects of class SEE.External and CIE.internals of size n.

Step 14 :→ for (i = 0 to i < n) {
print("Enter Details")
Accept SEE.External [i] ~~marks~~ s
name, usn and sem.
Read Internal marks and External marks and iterate through loop.
Add im & sm/2 and store into fm

Step 15 :→ ~~Print~~ Final marks from (k = 0 to k = 5) }.

Step 16 :→ stop

Output :-

enter usn, name and sem
1BH22CS011
ADARSH DEV SINGH
2

Enter internal & semend marks subject 1
45
88
enter internal & semend marks subject 2
47
84
enter internal & semend marks subject 3
49
80
Enter internal & semend marks subject 4
45
97
Enter internal & semend marks subject 5
49
89
final Marks of ADARSH DEV SINGH
Course 1 = 89
Course 2 = 89
Course 3 = 89
Course 4 = 93
Course 5 = 93

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