

PROGRAM-6

Date ___/___/___

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Q) Create a package CIE which has two classes - student and internal. The class student has members like usn, name, sem. The class Internal derived from student 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.

```
1 -> CIE/student.java
package CIE;
import java.util.Scanner;
public class student {
    protected String usn;
    protected String name;
    protected int sem;
    public void inputStudentDetails() {
        Scanner s = new Scanner(System.in);
        System.out.print("Enter USN:");
        usn = s.nextLine();
    }
}
```

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```

        System.out.print("Enter name:");
        name = s.nextLine();
        System.out.print("Enter semester:");
        sem = s.nextInt();

    }

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

```

src/Internals.java

```

package CIS;
import java.util.Scanner;

```

```

public class Internals extends Student {
    protected int[] internalMarks = new int[5];

    public void inputInternalMarks() {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter Internal Marks for 5 subjects:");
        for (int i = 0; i < 5; i++) {
            System.out.print("Subject " + (i+1) + ": ");
            internalMarks[i] = s.nextInt();
        }
    }
}

```



```

1 package mySEE;
2 import java.util.Scanner;
3
4 public class External extends Internal {
5     private int[] seeMarks = new int[5];
6     private int[] finalMarks = new int[5];
7
8     public void inputSEEMarks() {
9         Scanner s = new Scanner(System.in);
10        System.out.println("Enter SEE
11        marks for 5 subjects:");
12        for (int i = 0; i < 5; i++) {
13            System.out.print(
14                "Subject " + (i+1) + ": ";
15            seeMarks[i] = s.nextInt();
16        }
17    }
18
19    public void calculateFinalMarks() {
20        for (int i = 0; i < 5; i++) {
21            finalMarks[i] = internalMarks[i]
22                + seeMarks[i];
23        }
24    }
25
26    public void display() {
27        for (int i = 0; i < 5; i++) {
28            System.out.print(
29                "Subject " + (i+1) + ": "
30            );
31        }
32    }
33 }
    
```

```

public void displayFinalMarks() {
    displayStudentDetails();
    System.out.println("Final  
marks for 5 subjects:");
    for (int i = 0; i < 5; i++) {
        System.out.println("Subject  
" + (i + 1) + ": " + finalMarks[i]);
    }
}

```

```

}

main: java my.tns.mysp2
import java.util.Scanner;

class Main {

```

```

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

        for (int i = 0; i < n; i++) {
            System.out.println("Enter  
details for students  
" + (i + 1) + ":");

```



```

students[i] = new External();
students[i].inputStudentDetails();
students[i].inputIEMarks();
students[i].inputSEEMarks();
students[i].calculateFinal
marks();

```

```

System.out.println("\n Final marks of
students: ");

```

```

for (int i=0; i<n; i++) {
    System.out.println("Student"
+ (i+1) + ": ");
    students[i].displayFinalMarks();
}

```

```

}

```

```

}

```

Enter number of students: 1

Enter details for student 1:

Enter USN: 001

Enter Name: Aliya

Enter Semester: 2

Enter Internal marks for 5 subjects:

subject 1: 95

subject 2: 87

subject 3: 79

subject 4: 94

subject 5: 82

Enter SEE marks for 5 subjects:

subject 1: 98

Subject [2] : 96

Subject [3] : 99

Subject [4] : 89

Subject [5] : 98

Final Marks for students :

Student 1 : 100

USN : 001

Name : Arya

Semester : 2

Final Marks for 5 subjects :

Subject 1 : 193

Subject 2 : 183

Subject 3 : 178

Subject 4 : 183

Subject 5 : 180

Scanned

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