WEEK → 6

Create a package CIE which has two classes - student and internal. The class student has members like USN, name, sem. The class internals derived from student has an array that stores the internal marks stored in five courses of the current semester of the student. Create another packagee 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 package in a file that declares the final marks of n students in all five courses.

```
javac -d mypackage simpleclass.java
java simpleclass.java
```

Student. java

```java
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 String get usn() {
        return usn;
    }

    public String get Name() {
        return name;
    }
    public int get Sem() {
        return sem;
    }
}
```

~~package~~

Internal. java

```java
package CIE;
public class Internals extends student {
    protected int [] internal Marks;
    public Internals (String usn, String name, int sem, int[] internal Marks) {

        super (usn, name, sem);
        this .internal Marks = internal Marks;

    }
        public int [] get Internal Marks () {
        return internal Marks;

    }
    public int calculate Internal Marks () {
        int total = 0;
        for (int marks ; internal Marks) {
            total + = marks;

        }
        return total;

    }

}
```

External. java

```java
package SEE;
import CIE. student;
public class External extends student {
    protected int [] external Marks;
    public external (String usn, String name, int sem, int []
                    external Marks) {
        super (usn, name, sem);
        this . external Marks = external marks;

    }
```

```java
public int[] getExternalMarks() {
    return externalMarks;
}
public int calculateExternalMarks() {
    int total = 0;
    for (int marks : externalMarks) {
        total += marks;
    }
    return total;
}
}
```

Final marks.java

```java
import CIE.internals;
import GEE.External;

public class FinalMarks {
    public static void main(String[] args) {
        int[] internalMarks1 = {80, 75, 70, 85, 90};
        int[] internalMarks2 = {78, 82, 88, 86, 84};

        int[] externalMarks1 = {85, 80, 90, 70, 75};
        int[] externalMarks2 = {80, 85, 90, 88, 78};

        Internals student1 = new Internals("24BECS404", "Abhay",
                                5, internalMarks1);
        External student2 = new External("24BECS412", "Koala", 5,
                                externalMarks2);

        int finalmarks1 = student1.calculateInternalMarks() + student2.
                            calculateExternalMarks();
        int finalMarks2 = student1.calculateInternalMarks() + student2.
                            calculateExternalMarks();
```

```
System.out.println ("Student 1 - USN : " + student 1. get usn () + " Name : "
                    + student 1. get Name () + ", final marks : " + final
                    marks 1);
System.out.println ("Student 2 - USN " + student 2. get usn () + ", Name : " +
                    student 2. get Name () + ", Final Marks : " +
                    final marks 2);
```

}

3

Output :

Student 1 - USN : 24BECS404, Name : Abhay , Final marks : 821
Student 2 - USN : 24BECS492, Name : Koala , Final marks : 821