

Lab - 6

Create a package CIE which has two classes - Student and Internals. The class Student has members like vsn, name, sem. The class Internals 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 SET which has the class External which is a derived class of Student. This class has an array that stores the SET 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.

//Student.java

package CIE;

import java.util.*;

public class Student

{

protected String vsn = new String();

protected String name = new String();

protected int

public void inputStudentDetails()

{

Scanner sc = new Scanner(System.in);

System.out.println("Enter student vsn");

vsn = sc.next();

System.out.println("Enter student name")

```
name = sc.next();
System.out.println("Enter semester");
num = sc.nextInt();
```

3

```
public void displayStudentDetails()
```

```
System.out.println("Student num: " + num);
System.out.println("Student name: " + name);
System.out.println("Student semester: " + sem);
```

3

3

```
// Internals.java
```

```
package CIE;
```

```
import java.util.*;
```

```
public class Internals extends Student
```

3

```
protected int marks[] = new int[5];
```

```
public void input(CIE marks)
```

3

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

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

```
System.out.println("Enter 5 subject  
marks");
```

```
marks[i] = sc.nextInt();
```

3

3

3

11 External java
package . SEE ;
import CIE . Internals ;
import java . util . Scanner ;
public class Externals extends Internals

{
protected int marks [] ;

protected int finalmarks [] ;

public Externals ()

{

marks = new int [5] ;

finalmarks = new int [5] ;

public void input SEE marks ()

{

Scanner sc = new Scanner (System . in) ;
for (int i = 0 ; i < 5 ; i ++)

System . out . println (" Subject " + (i + 1) + "

marks [i] = sc . nextInt () ;

3 8

public void calculate Finalmarks []

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

finalmarks [i] = marks [i] / 2 + super . marks [i]

3

public void display Finalmarks ()

{

```
display Student Details();  
for(int i=0; i<5; i++)
```

```
{ System.out.println("Subject "+(i+1)+": "+finalMarks[i]); }
```

```
// Main.java
```

```
import SEE.Externals
```

```
class Main
```

```
{ public static void main (String args [ ])
```

```
int num of students = 2;
```

```
Externals final Marks [ ] = new Externals [num of students];
```

```
for (int i=0; i< num of students; i++)
```

```
final Marks [i] = new Externals ();
```

```
final Marks [i].input Student Details();
```

```
System.out.println("Enter IIT marks");
```

```
final Marks [i] = input.IITmarks();
```

```
System.out.println("Enter SEE marks");
```

```
final Marks [i] = input.SEEmarks();
```

```
System.out.println("Displaying data : /n");
```

```
for (int i=0; i< num of students; i++)
```

```
final Marks [i].calculate Final marks();
```

```
final Marks [i].displayFinal marks();
```

Output

Enter student num

IBM22CS23

Enter student name

Sakshi

Enter student semester

3

Enter CIE marks

Enter 5 marks : 39

Enter 5 marks : 38

Enter 5 marks : 26

Enter 5 marks : 40

Enter 5 marks : 36

Enter SEE marks

Subject 1 marks : 78

Subject 2 marks : 89

Subject 3 marks : 90

Subject 4 marks : 87

Subject 5 marks : 92

Enter student num

IBM22CS23

Enter student name

Rani

Enter student semester

3

Enter CIE marks

Enter 5 marks : 39

Enter 5 marks : 38

Enter 5 marks : 30

Enter 5 marks : 30

Enter 5 marks : 25

Enter SEG marks

Subject 1 marks : 56

Subject 2 marks : 78

Subject 3 marks : 89

Subject 4 marks : 90

Subject 5 marks : 92

Displaying data

Student name : Sakshi

Student usn : IBM22CS233

Student semester : 3

Subject 1 : 78

Subject 2 : 81

Subject 3 : 71

Subject 4 : 83

Subject 5 : 82

Student name : Rani

Student usn : IBM22CS217

Student semester : 3

Subject 1 : 58

Subject 2 : 77

Subject 3 : 80

Subject 4 : 70

Subject 5 : 80

Sakshi B. R

IBM22CS233