Lab 9:

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.

Code:

```
package cie;
import java.util.Scanner;


public class student
{
	Scanner s= new Scanner(System.in);
	public String usn=new String();
	public String name=new String();
	public int sem;
	public student()
	{
		System.out.println("Enter USN, Name and Semester ");
		usn=s.nextLine();
		name=s.nextLine();
		sem=s.nextInt();
	}
}


package cie;
import java.util.Scanner;

public class internals extends cie.student
{
	Scanner s= new Scanner(System.in);
	public int marks[]=new int[5];
	public internals()
	{
		System.out.println("Enter marks of all 5 courses ");
		for(int i=0;i<5;i++)
		marks[i]=s.nextInt();
	}
}
```

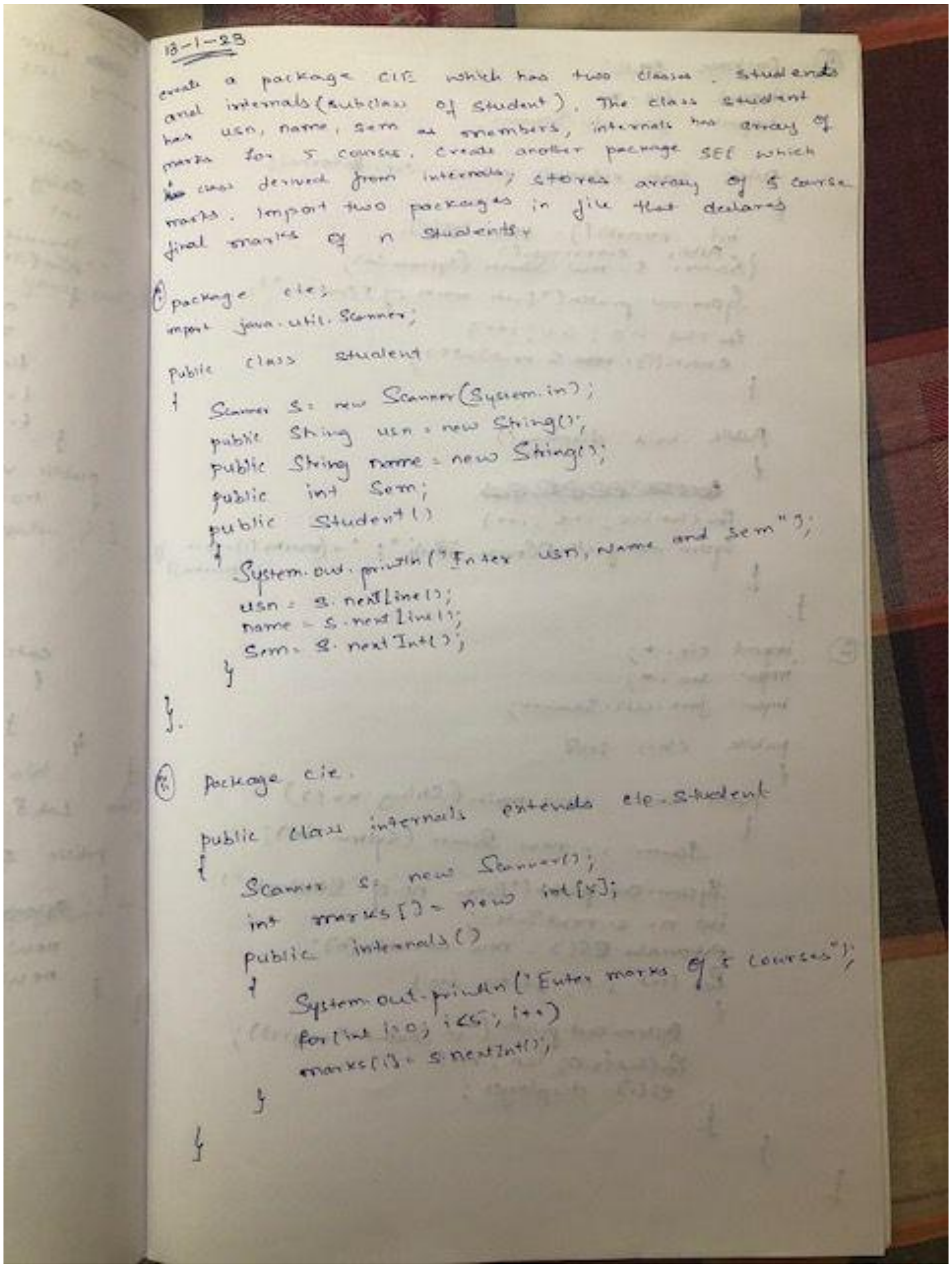
```
package see;

import java.util.Scanner;
import cie.*;

public class externals extends cie.internals
{
        Scanner s= new Scanner(System.in);
        public int emarks[]=new int[5];
        public externals()
        {
                System.out.println("Enter marks of all 5 courses ");
                for(int i=0;i<5;i++)
                emarks[i]=s.nextInt();
        }
        public void display()
        {
                for(int i=0;i<5;i++)
                System.out.println("Course "+i+": "+(marks[i]+(0.5*emarks[i])));
        }
}

import java.util.Scanner;
import cie.*;
import see.*;

class main
{
        public static void main(String xx[])
        {
                Scanner s=new Scanner(System.in);
                System.out.println("Enter number of students");
                int n;
                n=s.nextInt();
                externals es[]=new externals[n];
                for(int i=0;i<n;i++)
                es[i]=new externals();
                for(int j=0;j<n;j++)
                {
                System.out.println("Student
                "+(j+1)); for(int i=0;i<n;i++)
                es[i].display();
                }
        }
}
```

Output:

```
Enter number of students
2
Enter USN, Name and Semester
CS047
Revanth
2
Enter marks of all 5 courses
40
46
42
48
37
Enter marks of all 5 courses
76
78
98
88
86
Enter USN, Name and Semester
CS0155
XYZ
3
Enter marks of all 5 courses
46
45
44
43
48
Enter marks of all 5 courses
88
86
74
66
87
Student 0
Course 0: 78.0
Course 1: 85.0
Course 2: 91.0
Course 3: 92.0
Course 4: 80.0
Course 0: 90.0
Course 1: 88.0
Course 2: 81.0
Course 3: 76.0
Course 4: 91.5
Student 1
Course 0: 78.0
Course 1: 85.0
Course 2: 91.0
```

```
37
Enter marks of all 5 courses
76
78
98
88
86
Enter USN, Name and Semester
CS0155
XYZ
3
Enter marks of all 5 courses
46
45
44
43
48
Enter marks of all 5 courses
88
86
74
66
87
Student 0
Course 0: 78.0
Course 1: 85.0
Course 2: 91.0
Course 3: 92.0
Course 4: 80.0
Course 0: 90.0
Course 1: 88.0
Course 2: 81.0
Course 3: 76.0
Course 4: 91.5
Student 1
Course 0: 78.0
Course 1: 85.0
Course 2: 91.0
Course 3: 92.0
Course 4: 80.0
Course 0: 90.0
Course 1: 88.0
Course 2: 81.0
Course 3: 76.0
Course 4: 91.5
```

Observation:



13-1-23

Create a package CIE which has two classes - students and internals (subclass of student). The class student has usn, name, sem as members, internals has array of marks for 5 course. Create another package SEE which has class derived from internals, stores array of 5 course marks. Import two packages in file that declares final marks of n students.

(i)

```
package cie;
import java.util.Scanner;

public class student
{
   Scanner s = new Scanner(System.in);
   public String usn = new String();
   public String name = new String();
   public int sem;
   public Student()
   {
    System.out.println("Enter usn, Name and sem");
     usn = s.nextLine();
     name = s.nextLine();
     sem = s.nextInt();
   }
}.
```

(ii)

```
package cie.

public class internals extends cie.student
{
   Scanner s = new Scanner();
   int marks[] = new int[5];
   public internals()
   {
     System.out.println("Enter marks of 5 courses");
     for(int i=0; i<5; i++)
     marks[i] = s.nextInt();
   }
}
```

```
ⓑ package see;
  import cie.*;
  import java.util.Scanner;

  public class externals extends cie.Externals.
  {
     int emarks[] = new int[5];
     public externals()
    {Scanner s = new Scanner (system.in);
     System.out.println("Enter marks of 5 courses");
     for (int i=0; i<5; i++)
      emarks[i] = s.nextInt();
    }

   public void display()
   {
      [illegible]
      for (int i=0; i<5; i++)
      System.out.println("Course "+(i+1)+" : " +(marks[i]+(ci+
                                                           emarks))
   }.
  }.

ⓒ import cie.*;
  import see.*;
  import java.util.Scanner;

  public class Lab7
  {
    public Static void main(String xx[])
     {
        Scanner s = new Scanner (system.in);
       System.out.println("Enter no.of Students");
       int n = s.nextInt();
       externals ES[] = new externals[n];
       for (int j=0; j<n; j++)
       {
          System.out.println("\n Student " + (j+1));
          for(int i=0; i<n; i++)
           es[i].display();
       }.
    }
  }.
```