

Create a package CIE which has two classes - Personal 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 Personal. 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.

CIE -> Personal.java , Internals.java

Personal.java

```
package CIE;

public class Personal {
    public String name , usn ;
    public int sem ;
    public Personal ( String n , String u , int s )
    {
        this.name = n;
        this.usn = u ;
        this.sem = s;
    }

    public void display1()
    {
        System.out.println("Name : " + name);
        System.out.println("Usn : " + usn);
        System.out.println("Sem : "+ sem);
    }
}
```

Internals.java

```
package CIE;

public class Internals {

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

```

public Internals( int m[])
{
    this.marks = m;
}
public void display2()
{
    System.out.println("Marks scored in internals : ");
    for (int i = 0; i < marks.length ; i++)
    {
        System.out.println("Subject " + (i+1) + ": " + marks[i]);
    }
}

}

```

SEE -> External.java

```

package SEE;

import CIE.*;

public class External extends Personal {

    public int external[] = new int[5];

    public External ( String n , String u , int s , int ext[])
    {
        super(n,u,s);
        this.external = ext;
    }

    public void display3()
    {
        System.out.println("Marks scored in externals : ");
        for (int i = 0; i < external.length ; i++)
        {
            System.out.println("Subject " + (i+1) + ": " + external[i]);
        }
    }
}

```

## Packages.java (main)

```
import java.util.Scanner ;
import CIE.*;
import SEE.*;
public class Packages {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n ;
        System.out.println("Enter the number of students : ");
        n= sc.nextInt();
        for(int j = 1 ; j<=n ; j++)
        {
            System.out.println("Enter the name of the student : ");
            String name = sc.next();
            System.out.println("Enter the usn : ");
            String usn = sc.next();
            System.out.println("Enter the sem of the student :");
            int sem = sc.nextInt();
            int imarks[] = new int[5];
            System.out.println("Enter the internals marks of student out of 50
: ");
            for(int i =0 ; i<5 ; i++){
                System.out.print("Internals subject " + (i+1) + ":" );
                imarks[i] = sc.nextInt();
            }
            Internals in = new Internals(imarks);
            int emarks[] = new int[5];
            System.out.println("Enter marks of SEE out of 100 : ");
            for(int i =0 ; i<5 ; i++){
                System.out.print("Externals subject " + (i+1) + ":" );
                emarks[i] = sc.nextInt();
            }

            External ex = new External(name, usn, sem, emarks);
            ex.display1();
            in.display2();
            ex.display3();
            int total[] = new int[5];
            System.out.println("Total marks scored : ");
            for(int k = 0 ; k<5 ; k++)
            {
                total[k] = in.marks[k] + (ex.external[k]/2);
                System.out.println("Subject " + (k+1) + " : " + total[k]);
            }
        }
    }
}
```

```
    }  
}  
}
```

Output :

```
C:\Users\Admin\Desktop\1wn24cs222>java Packages  
Enter the number of students :  
1  
Enter the name of the student :  
Rahul  
Enter the usn :  
1wn24cs333  
Enter the sem of the student :  
3  
Enter the internals marks of student out of 50 :  
Internals subject 1:45  
Internals subject 2:46  
Internals subject 3:44  
Internals subject 4:43  
Internals subject 5:43  
Enter marks of SEE out of 100 :  
Externals subject 1:88  
Externals subject 2:89  
Externals subject 3:90  
Externals subject 4:92  
Externals subject 5:92  
Name : Rahul  
Usn : 1wn24cs333  
Sem : 3  
Marks scored in internals :  
Subject 1: 45  
Subject 2: 46  
Subject 3: 44  
Subject 4: 43  
Subject 5: 43  
Marks scored in externals :  
Subject 1: 88  
Subject 2: 89  
Subject 3: 90  
Subject 4: 92  
Subject 5: 92  
Total marks scored :  
Subject 1 : 89  
Subject 2 : 90  
Subject 3 : 89  
Subject 4 : 89  
Subject 5 : 89
```