Ex No 5 Packages

Date :

Aim:

To write java programs using packages.

1. Write a Java program to create a Package “YEAR_I” which has a class YearIMarks (members – sub1mark, sub2mark). Create another package “YEAR_II” which has a class YearIIMarks (members – sub3mark, sub4mark). Create n objects of Student class (having rollNumber, name, YearIMarks and YearIIMarks). Calculate the Grade (‘Pass’ > =50 else ‘Fail’) for each subject and display the result of the student in proper format.

Algorithm:

Step1: start
Step2: create packages year1,year2 with classes year1marks,year2marks respectively.
Step3: In the classes year1marks and year2marks have methods sub1,sub2 respectively.
Step4: Create a class student with data members rollno and name.
Step5: create object for student,year1marks and year2marks and get the details of students from the user and display whether the student passed the exam.
Step6: stop.

Program:

```
package year1;
public class year1marks {
   public double sub1mark, sub2mark;

   public year1marks(double a, double b) {
      sub1mark = a;
      sub2mark = b;
   }

   public String Sub1(double m1) {
      if (m1 >= 50)
         return "PASS";
      else
         return "FAIL";
   }
}
```

```
package year2;
public class year2marks {
    public double sub3mark, sub4mark;

    public year2marks(double a, double b) {
        sub3mark = a;
        sub4mark = b;
    }

    public String Sub2(double m1) {
        if (m1 >= 50)
            return "PASS";
        else
            return "FAIL";
    }
}
package exp5;
import year1.year1marks;
import year2.year2marks;
import java.util.Scanner;
public class pg5_1 {
    public static void main(String[] args){
        Scanner in=new Scanner(System.in);
        Students[] s=new Students[10];
        year1marks[] y1=new year1marks[10];
        year2marks[] y2=new year2marks[10];
        System.out.println("enter no. of students");
        int n=in.nextInt();
        for(int i=0;i<n;i++){
            System.out.println("enter roll no and name:");
            int a= in.nextInt();
            String b= in.next();
            s[i]=new Students(a,b);
            System.out.println("enter First year marks:");
            double c=in.nextInt();
            double d=in.nextInt();
            y1[i]=new year1marks(c,d);
            System.out.println("enter Second year marks:");
            double e= in.nextInt();
            double f= in.nextInt();
            y2[i]=new year2marks(e,f);
            System.out.println("NAME:"+s[i].name);
            System.out.println("ROLLNO:"+s[i].r_no);
            System.out.println("YEAR1 MARKS");
            System.out.println(y1[i].Sub1(c));
            System.out.println(y1[i].Sub1(d));
```

```
            System.out.println("YEAR2 MARKS");
            System.out.println(y2[i].Sub2(e));
            System.out.println(y2[i].Sub2(f));
        }



    }
}

class Students{
    int r_no;
    String name;
    Students(int a,String b){
        r_no=a;
        name=b;
    }
}
```

Output:

enter no. of students

1

enter roll no and name:

12

arjun

enter First year marks:

45

56

enter Second year marks:

78

65

NAME:arjun

ROLLNO:12

YEAR1 MARKS

FAIL

PASS

YEAR2 MARKS

PASS

PASS

2.Create a package with the following levels: pack1, pack2, and pack3. Test each package.

Algorithm:

Step1: start.
Step2: create package pack1 which has class p1 with disp1 method.
Step3: create package pack2 inside pack1 with class p2 with disp2 method.
Step4: create package pack3 inside pack2 with class p3 with disp3 method.
Step5: create object for classes p1,p2,p3 and call the methods disp1,disp2,disp3.
Step6: stop.

Program:

```
package pack1;

public class p1 {
   public void display1(){
      System.out.println("inside package 1");
   }
}
package pack1.pack2;

public class p2 {
   public void display2(){
      System.out.println("inside package 2");
   }
}
package pack1.pack2.pack3;

public class p3 {
   public void display3(){
      System.out.println("inside package 3");
```

```
    }
}
import pack1.p1;
import pack1.pack2.p2;
import pack1.pack2.pack3.p3;
public class main {
    public static void main(String[] args){
        p1 o1=new p1();
        o1.display1();
        p2 o2=new p2();
        o2.display2();
        p3 o3=new p3();
        o3.display3();
    }
}
```

Output:

inside package 1

inside package 2

inside package 3

3. Show how protected properties from the subclass can be accessed but not default properties.

Algorithm:

Step1: start.
Step2: create package procpack with class inside which has protected method disp1 and default method display.
Step3: create another package and import the above package with main() to access the above method through inheritance
Step4: create object for that class and call the method
Step5: stop.

Program:

```
package procpack;
public class inside{
    protected void disp1()
    {
        System.out.println("protected access specifier in disp1");
    }
    void display()
```

```
    {
        System.out.println("default access specifier in display");
    }
}
package out;

public class outside extends procpack.inside{
    public static void main(String[] args) {
        outside obj=new outside();
        obj.disp1();
        try{
            obj.display();
        }
        catch(Exception e){
            System.out.println("default access specifier cannot be used");
        }
    }

}
```

Output:

protected access specifier in disp1

default access specifier cannot be used

Result :

Thus, the java programs using packages has been written executed and the output is verified.

Observation(20)	
Record(5)	
Total(25)	
Initial	