AOOP LAB

LAB

```
SESSION 01: STRUCTURAL PATTERNS
Pre-Lab:
                           AND THE REST
               Singleton Patterin
1. Code
   package phelab_1;
   class Prob1 of
      private static Probl myObject = new Probl();
       static Probl get Instance ()
            netuan myObject;
       Private Prob1 () of
       void print() {
          System. out. print In ("Hello! World");
       8
                         The second section of the second
 package phelab_1;
 class Problemo of
                                     _11 - 4 - 61
      public static void main (String [ ] args) &
```

Probl a = Probl-get Instance ();

a. print();

6

OUTPUT: Hello ! Woxld Builder Pattern Code package phelab_2; public interface Item { public String name (); public Packaging packaging (); public float paice(); 3 package phelab_2; public abstract class Burgers implements Item f public Packaging packaging () { Heturn new Wrapper (); 3 package pre Lab_2; public class Veg Bungen extends Bungens f Public float price() [. Return 40.0f; public String name () f Hethun "Veg Bungen". package phelab_2; public class Chicken Bungen extends hungers f public float price() { return 60.07;

```
public String name () {
        Roturn "Chicken Burger"
 1
package pholab_2;
                  office of
public abstract class Cold Drink implements Item of
   -public Packaging packaging () {
        netuan new Bottle();
package puelab_2;
public class Pepsi extends Cold Drink of
   public float Police () {
       neturn 25.0f;
    public String name () (
   neturn "Pepsi";
package phelab_2;
public class loke implements Cold Drink of
   public float paice () f
      notunn 20.0f;
   public Staing name () {
       netunn "Coke";
package phelab-2;
Public intextace Packaging of
public String pack();
3
```

```
package preLab_2;
public class Bottle implements Packaging f
     public String pack()f
          return "Bottle";
 package pheLab-2i
 public class Whappen implements Packaging f
      public String Pack()f
            notunn "Wnappen";
 package phelab_2;
 impost iova. util. *:
 public class Meal 9
     paivate List < I tem > i= new AnnayList < I tem > ()/
     public void add I tem (I tem i tem) {
         1. add (item);
     public float get (ost () f
          float cost =0;
           for (Item 1: i) f
          cost += i.paice ();
          neturn cost;
    public roid display () &
        for (Item i:i) {
             System. out print In (" I tem: "+ i. name ());
            System.out-paintln (", Packaging: "+i-Packaging()-pack());
            System. out print in (" Price: "+ i.price();
```

package phelab_2; public class Meal Builder of Public Meal Bill + () f Meal m= new Meal(); m. add I tem (new Veg Burge & ()); m. addItem (new Pepsi (1); xetuan m; public Meal Bill2() f Meal m = new Meal(); m.add Item (new Chicken Burger ()); m. add I tem (new (oke()); neturn m; 3 Package Pale_Lab2; Public class Demo { public static void main (String [] args) { Meal Builder meal Builder = new Meal Builder (); Meal veg Meal = meal Builder. Bill 1(); System out print In (kg Meal"); Vog Meal · display (); System. out println ("Total (ost: "+ veg Meal-ge f(ost()); Meal non Veg Meal = meal builder. Bill 2(); System. out. print In (" In In Mon-veg Meal"), von Veg Meal . display (); System. out. println (" Total Cost: "+non Veg Med.gel Cost()) 3 3

OUTPUT: Veg Meal Item: Veg Bunger, Packaging: Waapper Price: 40.0 Item: Pepsi, Packaging: Bottle Price: 25.0 Total Cost: 65.0 Non-Veg Meal Item: Chicken Bunger, Packaging! Wnappen Price: 60.0 Item: Coke, Packaging: Bottle Price: 200 Total (ost: 80.0 tion and are IN LAB Bridge Pattern package inlab_1; public interface Student of public void add student (string name); public void delete Student (String name); public void display(); package in Lab_1; impost java. util. *; public class Students implements Student & List < String > list = new Array List < String > (); public void add Student (String name) { list, add (name), System-out - println (" Added "+ name);

```
public void delete Student (String name) &
          for (i=o; i < list.size(); i++) {
               if (i=o; ic list. size(); i++){
                   Hist Hemore (1)
              if (list. get (i). equals (name)) {
                   list . Hemove (+);
                   System. out. println ("Deleted "+ name);
                   break;
          if (i == List. size (1)
              System. out. Phintln (". Name not found");
     public void display () f
          System. out. paintln ("All Student Names: ");
         fox (String 1: list)
               System.out.println(i);
     3
package in Lab_1;
public class Student, Bridge of
      Private Student s=new Students ()
     public void add Student (String name) (
           s. add Student (name);
     public void delete Student (string name) f
           s. delete Student (name);
     public void display ()f
           s. display ();
     }
```

package in Lab-1; public class Bridge Format extends Student Bridge of public void display () { System.out. paintln ("_____ Super-display (); System. out. println ("---package in Lab-1; public class Demo & public static void main (String I] args) & Bridge Format byf = new Bridge format (); byf. add Student (" Ajay"); byf. add Student (" Bala"); byf addstudent (" (at hey"); bgf. add Student (" Chella"); bgf. add Student ("Dolly"); bgf. add Student ("Ellan"); bgf. addStudent ("Francis"); bgf-add Student ("Stella"); bgf. display (); bgf. delete Student ("Chella"); bgt. display (); byf. add Student (Zaxa); byf. display (); I was to be to be to be OUT PUT All Student Mames:

Ajay

Bala Cathey chella Dolla Ellan Examples Stella Deleted Chello Added Zaska MAII Student Names: Ajay Bala Cathey Dolly Ellan Francis Stella 20/10 3. (Hiteria Design Pattern package in Lab_3; public class Peason of private String name, gerder, marital status; public Person (string name, string gender, string mahital Status) & this · name = name; this gender = gender; this makital Status = marital Status; public String get Name () { neturn name;

public String get Gender () f neturn gender; public String get Maxital Status () { neturn morital Status; public String to String() f return "Person [Name="+ name+", Gender="+ gender + ", Marital Status = " + marital Status +"] m"; package in Lab_3; imposet java. util. Andray List; public interface Criteria f public AnnayList < forson> get (niteria (AnnayList < Porson> (t 211 package in Lab_3; imposit iava. util. Annay List; public class Male implements Criteria of Public Annay List < Penson> get (xiteria (Annay List. < Person > list) of Annay List < Person> male = new Annay List < Person> (); for (Posson i: list) f if (i get Gender () equals Ignorie Case ("male")) of male. odd(i); neturn male;

Package inlab_3; imposed sava util. Asexay List; public class Female implements (xitexia 5 public Annay List < Person > get Criteria: (AnnayList < Ponson > list) { Anday List < Peason > female = new Agray List SPERSONX); for (Person i: list) of if (i.get Gender (). equals Ignore (ase ("female")) f temale.add(i); return female; 3 package inLab_3; (1) bbo. homer or impost java-util-AnnayList; public class Mannied implements (niteria f public Annay List < Penson> get (niteria (Annay List < Person > list) of Annay List < Penson & married = new Arraylist < Pexson>(); in the leaves tor (Rason Pilist) f it (i.get Maxital Stutus ()-equals Ignore Case ("mannied")) f mathied add (i);

return married; package in Lab_3; impost java-util. AssayList; public class Mannied implements Criteria of public Annay List & Penson > get Criteria (AnxayList < Person> list) of tril yorked won = booklam znoorest > tril yorked LPessons (); for (Person i:list) of if (i.get Maxital Status (). equals Ignore Case (" maxtied ")) { mayried.add (i); neturn married; package Inlab_3; java. util. Assay List; public class Not Mannied implements Criteria f public Annay List & Penson > get (niteria (may List < Peason > list) of Assay List & Person > not Married = New Asray List & Person > () fog (Person i: list) of if (i-get Maxital Status (). equals Ignore Case ("not maggied"))of

not Markied. add(1); return not Married; package in Lab = 3; impost java util. Ankay List; public closs Demod public static void main (String [] args) of Agray List < Pegson > list = new Agray List < Pegson> list add (new Pexson ("Robert", "Male", "Not Mannied")); list add (new Person ("John", "Male", "Married")); list. add (new Person ("Mike", "Male", "Not Mannied")); list. add (new Peason ("Bobby", "Male", "Not Married")); list-add (new Person ("Laura", "Female", "Mannied"); list add (new Person [" Diana", "Female", " Not Married? (niteria male Criteria = new Male (); System.out.printlr ("Males: In"+ male Criteria get (riteria Chiteria female Chiteria = new Female (); System out println ("Females: In"+ female (riteria. get (niteria (rist); Caiteria max ried (aiterio = new Married (); System.out. paintln ("Mannied: In" + mannied Criteriaget (niteria (list)); (niteria non Mannied Criteria = new Not Manaied (); System.out-phintln ("Not Married: In" 1 non Married Criteria · get (niteria (list)); 3

DUTPUT

Males: [Name = Robert, Gender = Malo, Marital Status = Not Moss , Person [Name = John, Genden = Male, Marital Status = Married] , Person [Name-Mike, Gender = Male, Marital Status = Not Married] , Person [Name=Bobby, Gender=Male, Marital Status = NotMarried] Females: [Peason [Name = Lausta, Genden = Female, Marital Status = Marshied] Person [Name= Diana, Gender = Female, Marital Status = Nat Married] Maggied: [Pesson [Name = John, Grendest = Malo, Masital Status = Massied] i Person [Name = Lauro, Gender = Female, Marital Status = Married] Not Mashied: [Person [Mame = Robert, Gender = Male, Marital Status = Not Married] , Posson [Name = Mike, Gender-Male, Marital Status = Not Married] , Porson [Name = Bobby, Gender-Male, Marital Status = Not Married] , Posson [Name = Diana, Gender = Female, Marital status = Not Magnied]

POST LAB

1. Command Pattern package postlab_1; public interface Command of public void execute (); package postlably; and the development public class light of public void on () of water in all men to an a System. out-paint In ("Light is on"); public void off() of System. out. print In (" Light is off"); a whi dinina at. package postLab_1; public class Light Off implements Command of Light light; public Light Off (Light light) { this-light=light; public void execute () of light. off (); package postlab_1; public class Light on implements Command of Light Light; public Light On (Light light)of this . light = light;

```
Public void execute () &
          light on ();
package postlab_1;
                            The at the still
 public dass steneof
     public void on () of
        System-out-paintln ("Stereo is on");
                              public void off () f
     3 System. out. println ("Stereo is off");
     public void set (D() 1
        System.out.println ("Stereo is set for CD input");
     public void set Volume (int Volume) f
      System. out. paint in l'Stere o volume set to't volume).
package postLab_4,"
       Steheo steheo;
public class Stexeooff implements
       public Steries Off (Steries steries) of
          this stereo = stereo;
       public void execute () {
          Stereo- off ();
                     " We to be I then
package postlab_1;
```

class Steteo On implements Command of

· 7 (61) · 1 (1) · 1 · 1

public

Stereo stereo;

```
public Steller On (Steller Steller) f
                thic. stereo = stereo;
          public void execute () {
                Stereo. on ();
                stereo. set (DC);
                 Stever. set Volume (11);
 package postlab_1;
 public class Remote Control of
       Command click;
       public void set Command (command command) of
             click = command;
        public void button () f
             click. execute ();
package postlab_1;
public class Domo f
    public Static void main (string [] args) of
           Remote Control remote = new Remote(ontrol();
           Light light = new Light();
           Steller steller = new Steller ();
           Hemote. Set Command (new Lighton (light));
           nemote. but ton ();
           remote. sot Command (new Sterroon (sterro));
           gemote. button();
           remote set Command (new Sterresoff (sterres));
           remote button ();
    3
```

4

to the same of the OUTPUT Light is on beginning the this Stereo is on Steller is set for CD input

. + Interior

Stelles volume set to 11

Stereo is off