Laburdes I using the concept of method overloading And the area of different shapes, scedangle, circle and squeen Sorone code import java. util. \*; class figure & double findAren (flout o) { seturn xxxx3.12;3 Ent find Area (Stind a CI) { return ana; } Prof find Asca (Find I, Find b) { seturn lab;} class mais 1 { public state void men (3dry at I) & float 7; Pud 1,6; Scanner Cry 2 new Scanner (Bysters. Trs); Figure obj z new Figure (); Syden oud prindle ("In Enter bength of sadius of circle: "); Yz fup. nemt Fload (); System. oud. prisodes ("In Enter length of one side of spread :"); l=gry.nent Ind(); Geden oud prindle ("Man & square with one sich buyth" + l+ " ="+ obj. find Breu(1)); Ejedensond prindla ("In Ender length of seedangle:"); 1- Sup. nen IIn (); System. out. pointle ("In Enter breadth of sectangle: "); System. and printed (" Area of sequent with length " + 1 + " and breach"

4 b + " = " + obj. find Bea (l, b));
}

Result: Brogram sucessbully encurted and output obtained.

## Myssithen

Stepl : Start

Styp 2: Deta Declare a class named figure

Stys. - Declare Implemented & method of name Ind Asen with different seturn type and no. of argument inside class Sym

Step 4: - escale an object of Jane and call the method find Bree weight through different ways.

Styps: prind the area returned by each calling.
Stypb: Stop

Output

Endu length of sadius of circle:

Asia of circle with suchlus 6.0 = 112.32000.

Ender length of one side of square:

Asca of squere with me Side length 6 = 36

Ender length of rectangle: 3

Ender breadth of nedangle: 4

Drea of reedemple with buyth 3 and boscoulth 4 2 12

a) (seade a class 'Employee' with data members Empid, Name, Jalany Address and constructors to instalize the data members. Courte another clouss 'Teacher' that suburids the properties of class employee and contain its own data members and also include display turition to display all the data members. It array of Objects to display details of N teachetis. Down Code Emport java. util. x; The second second class Employee? Ent empid, salary; String name, address Complyee (Port Gd, Story name, And Sal, Storing addr) ? empsd=id; this name = name; sulary z sal; This addr = addr; } 134 class teacher enduels Employee ? Shing dept, embj; Teacher (Stry d, String &, and id, String name, and sed, String adds) {

Shing dept, subj;
Teacher (Shing d, Shing s, and id, Shing name, and soil, Shing add) {
super (id, name, sal, adds);
dept = d; subj = 5;

Nord display () {
System. out. pointles "ID: "+ empred + "In Alme: "+ name + "In Salary: "+

salovry + "In Address." + addr + "In Department :"
+ dept + "In Inhjects tanglet: "+ subje "In");

}

```
public class arrof thij ?
    public slatte voted marin (Strong a []) {
      Scanner 82 new Scanner (System in);
      Ent n, ed, salvy;
       Stry name, address, dept, sub;
       Complayer ett
       Teacher d [] = new Teacher [20];
       System out printles ("Ender no of teachers: ");
        m = s. rund Int ();
        for (mt 120; 120; 141)
           System. oud. println ("Employee", (ie));
            System. and proble ("Gran the emp of I name of employee: ");
             9d = 8. nend Ind();
             nome = S. nen(C);
             System. oud. prinkln ("Goden salvoy of addres :");
             salony = s. nendInd();
              address = 8 nend ()',
             System.out.println (Teacher "+ (i+1));
              System and prisols ("Ender dyparoment of subjects taught: ");
              dept = s.nend();
             t(i) : new Teacher (dept, sub, id, name, salary, address);
         for (and iso; ikn; ita) {[i]. display ();
```

Result: Program sucussfully encuded and sisult obtained.

```
Output
Entu no of teachers.
Employee I
Ender the empted of name of employee:
 101 Am
Enter galary of adobsess:
2000 thirmvalla
Teacher 1
Onter department of subjects taught:
 BEE elebonice
 Comployee L
 Ender the empid of name of employee:
  102 Croken
 Ender salary & adelsess:
  2500 Kollam
 leather 2
  Ender deportment of subjects faught:
  MCA DS
 leacher 1
                                 Caacher 2
  50:101
                                  Ib: 102
                                   Nanu: Croku
 Name: Ann
  Salary: 2000
                                   Salovy: 2500
  Address: thimvalle
                                   Adelses: Kollam
  Upulment: EEE
                                   Deputment: MCA
  Subjects tought: electronics
                                   Subjects taught: DS
```

3) Creak a class Person with data numbers Novne, Gender, Adels co, Age and a constructor to Entralize the dada numbers and another class 'Employee' that emberies the properties of class Person and also. contains its own data members like Empid, Company name, But Fruton, Salary and isk non constructor. Create another class "teacher" that Enluriss the properties of class Employee and contains its own data members like Subject, Dypartment, Teachered and also contain constructors and methods to display the dada members. Use array of objects to display defails of N fearthers. Source Code truport java. util »; Marie and class person ? and age ! String name, gender, address; person (String name, String gender, String address, and age) & this name = name; this gunder = gender; this address = address; this age = age; class employer entirels person & Section Stewart ant emptd, salony; Shing: Mane, qualitication, employee (Stry name, Story gender, Story address, Ent age, iol empil, string (Alume, Story qualification, in Salvey) { Super (name, gender, address, age); this. CName = cName; this empld = empld, this sulary = sulary;

```
class teacher entends employee {
        gut IId;
         Show subject, department;
         Leather (ind Ald, String Subject, String department, Stringnume,
                 Shing gender, String address, and age, intempted, String Name,
                  String qualitication, ind salvey)
              super (name, gender, address, age, emple, Mame, quelification,
                                                                      Salary);
               This. tJd 2 t Id;
               this subject = subject;
               this department: department; I
        void display() {
              Desden. oud. printle (4/4 Teacher id: "+ + Id);
             System. out. prostes ("It Employee id: "+ empid);
              System. oud. prissle ("It Name: " + name);
              System. out. privales ("It Subject: " + subject);
              System, and print la ('It Department: '+ department);
              System-out. printles ("It Gender: " + gender);
             System and printle (14 Address: " + address);
              System out minth (MA Age: 4 + age);
              System and probles. ("It (ampound name " " c Name);
              System oud you'd to ("It Quelitication: " + qualitication);
              System out pointle ("It salary: "+ salary);
```

class marn 1 { proble static void mais (8tring arys[]) { int n, teacher Id, cage, empid, salving, Storry name, gunder, address, Mame, subject, dept, quals Freation; Kunner Engrit, new Scanner (Systemin); Syphens and print (In Ender the no of Leachers: "); n, input. nen I Ind (); feachers of [] = new feachers [n]; for (m) 1:0; 12n; 12) { Lauber Ich 2 121', Rystom and prisales ( Ender didails of Lacher " a (1-1); System. ond. prisklo ("(nder employee id!"); empid = input nend Int (); System on d. printles (Ender name: "); name 2 Empudinend(); By Stur. oud. prisoln ("En bu subject: "); subject = Input nund(); Bystern, and youngle ("Enter department:"); dept: Enpris. vum &(); System and privates (Enter gender: "); gender 2 mpnd nem 20; Bysdem-ond. printle (Ender address: "); address: Emped. nem? (); System ond prioble ("Gita age: "); age = impud . rend Ind (); System. and. portodo (" En la company name"); Mame 2 Enpul nemb (); System out printle ("En a qualification: "); qualification: inpud-nent (); System out : printle (" En tu salary : "); salary = saport nend Int(); 4[1] = new teacher (dochersel, subject, dept, name, exceler, adelsess, age, Explus out mille ("); Bypdens. and prindle ("In Healbade "- (1-1)); of [i]. display (s) I input-close (s) y Repett. - Bogram succestilly encurted of outpant obtained

```
Output
Ender the no of teacher: 2
anter Makails of Lucher 1
Enter employee id:
100
Erder name:
Ann
Buter Subject:
electronics
 Ender department:
 EEE
 Ender gurder:
 Temale
 Enter address:
 Thinvalle
 Ender ampany name:
  Rit
  Culed qualification:
 Much
 Enter salary:
 2500
 Enter details of Jeacher 2
  Enter employee id:
  102
  Ender name:
  Croku
  Ender subject
```

DS

Ender depentment: Meta
Guther genden: Make
Guther eige: 35
Guther eige: 35
Guther eige: 35
Guther eige: 35
Guther qualification: MCA
Guther gualification: MCA
Guther salary: 2400

Details of Teachers

Jeacher 1

Teacher Id: 1

Employee rd: 100

Name: Ann

Subject : Electronies

Department : EEE

Garder: Female

Address: Thimvelle

Age: 34

Company name: Rit

: ( analidration : Mech

Palary: 2500

Teacher 2

Teacher 9d:2

Employee id: 102:

Nume: Goku

Subject: DS

Depurbment: MCA

Gundor: Male

Address: Kollan

Age: 35

Company voune: Rit

Qualifration: MCA

Salary: d 400

4) Write a program has class Publisher, Book, Literature, and Liction. Read the Ento and print the details of books from either the category, using Enherstence. Lavre code ampost java. util. x; class Publisher ? Shing name; Publisher (String name, int date) { this date = date: this. name 2 name; Class Book endenels Robbisher & String title, author; End no-of-pages; Book (String title, String andhor, ind no. of pages, String name, ind. date) { super (name, date); this enthro = author; this. tible = tible; this. no. J. pages = no. J. pages; read display Dedeils () { System out prindlo ("Tible: " + tible); System oud prindles ("Author: "+ outher); System. oud. prindles (Number of pages: " + no-of-pages); System and printles ("Publisher name: " « name); 3 Systemions prisoles ("Publish dak: " - dade): 3 class Fiction entends Prook? Static String type= "Fiction";

Fiction (String title, String another, not no. of-pages, Bloing manny ens dade) { super (title, author, no-of-pages, name, date); } Mold display & System and prioller ("Brok type: " - type); display Dedon's (); 9 class Liberature endends Brok? static string type = "Literature"; Liberature (8 bring unther, 5 bring another, in 1 no. of pages, 82 ring name, ind das) E super (d'the, another, no-of-puyes, name, class); } roid display () & System and priodles ("Book type: " + type); desplay Details (); } public class he starchial Inheritance ? State String title, andhors, Manne; static and no-of-pages, date; state void suddet Beanner Enp = new Scanner (System in); static word read Data () { System. out-prioble ("Ender the brok title: "); title = inp. nend (); Syedem. out. prindles ("Gorder the brok author: "); cuther = inp. next(); System and printh (" Ende the brok publisher name:"); Mane = Emp. nentes; System out mindle (Ender the number of purges in book : "); no. of puge 2 sup. nent Ind(); Tysamout problem ("Ender the book guldbish dede: ");

```
dock = Gup. nend Int();
public static void main (String roys []){
 search Data ();
 Fiction 7: new Fiction (title, anothers, no. of. puzes, p. Name, date);
 scaclData();
 J. display();
  Syedem on J. prinder (" ANDRANDER BOOK cholik of lidratur Age monorpours)
  l. display ();
  Emp. close (); Melosing scanner object
```

Remle: - Pregown successfully executed and output obtained.

f brown in

I have been all out it

ALLERANTE Ender Hook delails of fection type money Inder the book title: Alchemist Ender the book andhor: Paulo Ende the number of pages in book: 1213 Ender the bak publish date: 20072000 \*\*\*\* Ender details of liderature type \*\*\*\*\*\*\* Ender the book title: To-kill-a-mocking-bird. Publisher Enter the book author: Haper-Lee name: Shing derde : int Finder the book publisher name: Onfind Publisher (name, dal) buter the number of pages in book! 3443 Order the book publish date: 31081800 ARRADADADADA Brok defails of Fection Lynnan ADADADA Brok title: 3 hing book type: Fiction author: story Title: Alchemist no. of gages: Bot rad Bisplay Details () Author: Paulo Number of page : 1213 Liberation Reblisher name: On Ford type: 8 bd og static type: String Ston Kirksh da de : 20072000 Hold display() , normanne Book debails of Title: To-kill-a marking-bird

Auther: Haper-Lee

Rubbleton name: On fred

Publish dad: 3108/800

```
Create classes Student and Spiris. Create another class Right
 Entheristed from Student and Spirits. Display the academic and spirits
  sure of a student.
  Source Code
 amport. util .*)
 ander Sace student &
       String sname = "Anender", genelin= "Male";
     ful murk = 70;
 Enderface spools {
       String contegury : "Running";
     and place 21, score 20;
 class Result implements student, sports?
       Ent total = score + merk;
       public road display () {
         System ond . prindle ("Name: "+ sname);
         System. out pristle ("Gender: " - gender);
         System-oud priod la ("Horks had: "+ mark);
         System. ond. probles ("Sports cadegory: " a cadegory);
         System and prindle (" Place obtained: 4 place):
         System on I print In (" Marke sensorded: " + score);
         System out priotles ("In Total Marts: " + total); }
public class multiple Inheritance ?
     public southe void main (Stry [] asugs) {
               Result = 8 = new Result (); System. out. printle ( xissan Details )
```

autput

ANTARRAMENTA Deduits AMAGORANONED

Name: Arounda

Gender: Male

Marks had : 70

Sports carry: Running

Place obtained: 1

Mark sevended: 20

Total Monte: 90

Result: Propum success fully creented and of obtained.

manufactured to the state of th

6) Create an Puter face having prototypes of Lune Hous area () and parimeter (). (seade two clouses Circle and Rechangle which implement the whore interface. Greak a menu driver program to find and of puimebel of objects. Lower Code The same of Emport Java. util. \*; Enderfau shape { double area(); double paimeter(); } Class Circle implements shape { Corde (2017) { this . 7 = 7;} public double area () { rehim 3:14 + 7 + 7;} public double perimeter () { situan 2 x 3.14 x x;} class ledangle suplements shape { Rectangle (ind l, Bod b) { this. l = l; this. b = b; } public double aven () { seton løb; } 11 public double perimeder es { schorn & s (leb);} public class arealerineter Interface { public static void mass (Shiy [] arys) { Scanner Pup = new Scenner (System Fr); bulean flag = true; gsdun. ond. prioble (" xxxxxxxx Meny xxxxxxxx "); System oud printle (" 1 - Circle "); System oud. print la ("2-Rectangle"); System. out. printle ("0-Enil");

```
Syxlamon A. printles ("Condex your choice :");
   and c = inp. nend Ind();
   Switch (c) {
         Case 1: {
               System. ont. priobles (4 Ender sudius: ");
               Circle cr. new Circle (sup. nem 12 1813);
               System oud printles ("Area of circle is" + cr. arun (1);
              System and printles ("Perimeter of circle is a cr. quimeter);
               break; 4
          case 2 '. {
              Systemoud priviles (" Conter length and breadth");
              Rectangle r: new Rectangle (inp. nem 1 Ind (), ing. nem 1 Ind ());
              Proton out printer ("Area of restargle is " + r. coren ())
              System on I print to ("Perimeter of sectangle is "+ or primeter);
              bocak; 4
           case 0:{
               Rystem. oud. printle ("BYE ....");
               Hay 2 Julse;
                mak; }
    I while (flag);
Sup. close ();
```

Rosuld: Programs successfully encurred and output obtained.

Output

HORRER WENU HARRANA

1 - Ciscle

2 - Rectangle

0 - Init

Enter your chorce: 1

Enter radius: 4

Area of circle is 50.24

Perimeda of circle 18 25.12

Ender your choice: 2

4 it choses absents side Enter length and breadth: 3 it is in my state at sisting

Area of ocedangle 95 12.0

Resimeder of sectangle is 14.0

Contra your choice: O the list to be to be to be the second i de a mai - i and and and of

" Line I, who waster is a close of severt winding,

patro del material materiale I have to my more bone sidely stadied

and the first of the bolt

Transfer Contain

The state of

a service of the service of

in the same of the same

7) Prepare bill with the given from at using calculate method from Interface.

Order No.

Dak:

Product Id	Name	Quantity	unit-price	Total	
101	A	2	25	50	
102 B		T -	100	( 00	

Net. Amound 150

Source Cocle

Enderface amount {

rished calculate ();

class product implements amount?

state ent net Amt, ord No, date;

ant product Id, quantity, with-price, total;

String name;

product (Fut productId, String name, Fut questity, Fut unit-price)

this product Id 2 product Id;

this name = name;

this quantity quantity;

this unit-price;

this name 2 norme;

J

```
public void calulate () {
            total = quantity = unit-price;
            ned Amt e=todal;
     nord display () {
         System and prin lla Goroduced Id - ".
                                                                + quantity +
                                   + unid - price + "
                                                        " + total);
public class Bill {
      public state void main (Shing [) anys) {
          product deck 2 2209 2000;
           product. odNo= 9355456;
           product pl2 new product product Ich
           product p2 = new product (102, "B", 1, 100);
           pl. certentate ();
            P2 - Calculate ();
          Systemion 1. porollo ("Order No: "+ produt. ord No);
          System out printle ("Dak: "+ product cluste);
          Syskeroud proble (In freducted Name Quartity unit price Total
         Bystem out point &
        of stem at provides
          System oud printle ("It It It Net. Amount" + product well Ant);
```

Cerult: brogram successfully encented and only observed.

Output

Order No: 9355456

Pade : 20092100

Product Id	Name	Quantity	unt-price	Total	1.5
(0)	A	2	a5	A 50	10.
102	P	L <sub>231</sub>	100	000	3-27

Ned Anount 150

I there was a many good of melions

was milk that the to the

, lover - is the opening that

the second of

I make that many in

And the same will

the state of the same

```
8) Using the concept of method oversiding, find the area of shaper,
  Lectangle, Cixle and Square.
  Source code
  Purport Java. util. 8;
  class sectangle &
         and lib; suchange () {}
         redayle (ent length, Ent bodth) { le lyth; be bretth; }
       double asuarl) { schorn labig
   class and enknds redaugle {
       ful y; circle () { }
        circle (Fort routhus) { ~ 2 radius; }
        double area() { schom (3.14 > 7 > 7); }
   class square entends circle ?
           square (mt side) { s = srcle; }
          double over () { return (3×5);}
   class over oldling {
         public static void main (8thing arys(1) {
     Ent libir, side;
     Scanner 3: New Scanner (Byshim . 500);
     System out priobles (Ewer length of breuelth of the secountle:);
      12 s. next IndCo,
      bas nendInd(s;
     redangle of 2 new redangle (lib);
      System out printlin ( Asia: " e sticrea ());
```

System.oud. priod do (Enter the sachus: "); d, s.nentInd(1) ciscle (= new circle 6); System out priotles (Area: "+ c. asea ()); System on Privales ("ender the sicle of the square:"); sicle = sinendInd(); sudangle scanew square (side); System on topinkla ("Aren: "+ scaren()). s-close (): of observed. Risult: Programs Encessfully encirbed of

Clous digram sudante 1: Ind b: int sudangle () sectangle (l, D) double area () ande r: sut Und () # Circle (1) double over () quare s: ant 39 nare (3) double area ()

Output

contact the buyth of breadth of the rectangle:

5 4

More: 20.0

ender the radius.

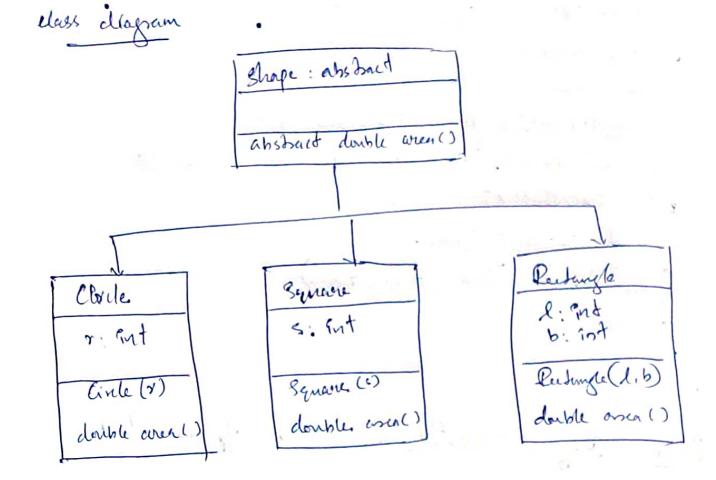
3 mu : 48.55 qqqqqq

ender the side of the square:

Arca: 9.0

1) Cocade an Abstract class 'Strope' with an abstract method finel Area to Find the orser of different shapes. Create subclasses Persongle, Ciscle, and square from Shape. Calculate and display are a of Recounte, Circle and Square Loura Code abstract closes shape & abstract double area (); 3 class Circle entends Shape ? Circle (and r) { this. > = x;} clouble ever () { >churn 3.14 + x = x; } class Square enderels Shape ? Square (m1 s) { this. s = s; } double ascal) { schorn 505;} class Redaugle endureds Shape { Fit l,b', Recongle (and 1, sol b) { this lal; This bab; } double arun() { return lab; } public class established Class ? public static void made (Stry (I args) { Circle C: new Circle (6); 3quove. 392 new Square (6); lectargle 7 = new Rectargle (2, 3); Byshmoud printles ("Asca of circle with radiuls "+ i.v+" = "+ c. wear)); Bysdens out proble ("Aread square with one stle- 1 29.51 = "+ squarence); System on I-priallo ("Asca of sectangle with length" a v. l+ and mendth"

Result: - Program successfully enembed of old observed.



ender the light of breadth of the redaingle: 5 4
Ama: 20.0

enter the radius: 3

Au : 28-25-991949 99