SOURCE CODE

```
import java.util.*;
class overloadd
{
	int a;
	int area;
	double y;
	void area(int l,int b) {
		int length = l;
		int breadth = b;
		a=length*breadth;
		System.out.println("Area: "+a);
	}
	void area(int s) {
		int side = s;
		area = side * side;
		System.out.println("Area: "+area);
	}
	void area(double r) {
	   double radius = r;
		y = 3.14*radius*radius;
		System.out.println("Area: "+y);
	}
	public static void main(String[] args)  {
	overloadd obj = new overloadd();
	Scanner sc = new Scanner(System.in);
	System.out.println(" Area of different shapes using overloaded functions ");
	System.out.println("\nRECTANGLE");
	System.out.println("Enter the length and breadth:");
	int l = sc.nextInt();
	int b = sc.nextInt();
	obj.area(l,b);
	System.out.println("\nSQUARE");
	System.out.println("Enter the side:");
	int s = sc.nextInt();
	obj.area(s);
	System.out.println("\nCIRCLE");
	System.out.println("->Enter the radius:");
	double r = sc.nextDouble();
	obj.area(r);
	sc.close();
 }}
```

OUTPUT

```
mca1@cscc2d63:~$ javac overload.java
mca1@cscc2d63:~$ java overload
 Area of different shapes using overloaded functions

RECTANGLE
Enter the length and breadth:
4 5
Area: 20

SQUARE
Enter the side:
4
Area: 16

CIRCLE
->Enter the radius:
4
Area: 50.24
```

SOURCE CODE

```
import java.util.Scanner;
class Employee {
   int Empid;
   String Name;
   double Salary;
   String Address;
   Employee(int no, String na, double sal, String add) {
      this.Empid = no;
      this.Name = na;
      this.Salary = sal;
      this.Address = add;
   }
}
public class Teacher extends Employee{
 String dept;
 String subject;

 Teacher(int no, String na, double sal, String add, String dep, String sub){
    super(no,na,sal,add);
    this.dept= dep;
    this.subject=sub;
 }

 void display(){
   System.out.println("Employee id: "+Empid);
   System.out.println("Name: "+Name);
   System.out.println("Salary: "+Salary);
   System.out.println("Address: "+Address);
   System.out.println("Department: "+dept);
   System.out.println("Subject: "+subject);
 }
 public static void main(String[] args) {
   System.out.println("\nEnter the No. of Employee's");
   Scanner sc1 = new Scanner(System.in);
   int num = sc1.nextInt();
   Teacher arr[]=new Teacher[num];
   for(int i =0;i<num;i++)
   {
      Scanner sc =new Scanner(System.in);
      System.out.println("\nEnter Employee id: ");
      int Empid=sc.nextInt();
```

```
        System.out.println("\nEnter Employee Name: ");
        String Name=sc.next();
        System.out.println("\nEnter Salary: ");
        double Salary=sc.nextDouble();
        System.out.println("\nEnter Address: ");
        String Address=sc.next();
        System.out.println("\nEnter department: ");
        String dept=sc.next();
        System.out.println("\nEnter Subject: ");
        String subject=sc.next();
        arr[i]=new Teacher(Empid,Name,Salary,Address,dept,subject);
       }
        System.out.println("\n********Informations of all the
        employee's**********");
         for(int i=0;i<num;i++){
         int j=i+1;
         System.out.println("\n"+j+").");
         arr[i].display();
        }
         sc1.close();
 }


}
```

OUTPUT

```
mca1@cscc2d63:~$ javac teacher.java
mca1@cscc2d63:~$ java teacher

Enter the No. of Employee's
2

Enter Employee id:
111

Enter Employee Name:
Achu

Enter Salary:
20000

Enter Address:
Achutham

Enter department:
CS

Enter Subject:
C

Enter Employee id:
120

Enter Employee Name:
Ram

Enter Salary:
22000

Enter Address:
snehalayam

Enter department:
Management

Enter Subject:
Business
```

```
Informations of all the employees

1).
Employee id: 111
Name: Achu
Salary: 20000.0
Address: Achutham
Department: CS
Subject: C

2).
Employee id: 120
Name: Ram
Salary: 22000.0
Address: snehalayam
Department: Management
Subject: Business
```

SOURCE CODE

```
import java.util.Scanner;
class person
{
   String Name;
   String Gender;
   String Address;
   int Age;
   person(String name,String gender,String address, int age)
   {
      this.Name = name;
      this.Gender = gender;
      this.Address = address;
      this.Age = age;
   }
}
class Employee extends person
{
 int Empid;
 String Company_name;
 String Qualification;
 long Salary;
 Employee(String name,String gender,String address, int age,int empid, String
  company name String qualification,long salary)
 {
    super(name,gender,address,age);
    this.Empid= empid;
    this.Company_name=company_name;
    this.Qualification=qualification;
    this.Salary=salary;
 }
}

 public class Teacher2 extends Employee{
    String Subject;
    String Department;
    String Teacherid;
    Teacher2(String name,String gender,String address, int age,int empid, String
    company_name, String qualification,long salary, String subject, String
    department,
    String teacherid){
     super(name,gender,address,age,empid,company_name,qualification,salary);
```

```
  this.Subject=subject;
  this.Department=department;
  this.Teacherid=teacherid;
 }
   void display(){
    System.out.println("Name: "+Name);
    System.out.println("Gender: "+Gender);
    System.out.println("Address: "+Address);
    System.out.println("Age: "+Age);
    System.out.println("Employee id: "+Empid);
    System.out.println("Company Name: "+Company_name);
    System.out.println("Qualification: "+Qualification);
    System.out.println("Salary: "+Salary);
    System.out.println("Subject: "+Subject);
    System.out.println("Department: "+Department);
    System.out.println("Teacher id: "+Teacherid);
}
    public static void main(String[] args) {
    System.out.println("\nEnter the No. of Teacher's");
    Scanner sc1 = new Scanner(System.in);
    int num = sc1.nextInt();
    Teacher2 arr[]=new Teacher2[num];
    System.out.println("\n Enter the Teacher Details\n");
    int x = 0,j=0;
    Scanner sc =new Scanner(System.in);
    for(int i =0;i<num;i++)
    {
       x = i +1;
       System.out.println("\n"+x+").");
       System.out.println("\n Name: ");
       String a =sc.next();
       System.out.println("\n Gender: ");
       String b =sc.next();
       System.out.println("\n Address: ");
       String c =sc.next();
       System.out.println("\n Age: ");
       int d =sc.nextInt();
       System.out.println("\n Employee id: ");
       int e =sc.nextInt();
       System.out.println("\n Company name: ");
       String f =sc.next();
       System.out.println("\n Qualification: ");
       String g =sc.next();
```

```
        System.out.println("\n Salary: ");
        long h =sc.nextLong();
        System.out.println("\n Subject: ");
        String k =sc.next();
        System.out.println("\n Department: ");
        String l =sc.next();
        System.out.println("\n Teacher Id: ");
        String n =sc.next();
        arr[i]=new Teacher2(a,b,c,d,e,f,g,h,k,l,n);
      }
       sc.close();
       System.out.println("\n********Informations of all the
       Teacher's***********");
        for(int i=0;i<num;i++){
        j=i+1;
        System.out.println("\n"+j+").");
        arr[i].display();
       }
   sc1.close();
  } }
```

OUTPUT

```
 Employee id:
114

 Company name:
Ibm

 Qualification:
Pg

 Salary:
25000

 Subject:
C

 Department:
Computer science
```

```
********Informations of all the Teacher's***********

1).
Name: Geethu
Gender: F
Address: aradhyam
Age: 38
Employee id: 113
Company Name: Abc
Qualification: Pg
Salary: 20000
Subject: Maths
Department: Mathematics
Teacher id: 005

2).
Name: Ramu
Gender: M
Address: ramalayam
Age: 45
Employee id: 114
Company Name: Ibm
Qualification: Pg
Salary: 25000
Subject: C
Department: Computer
Teacher id: science
```

SOURCE CODE

```
import java.util.Scanner;
class Publisher
{
	String pub_name;
	Publisher(String name)
	{
	pub_name=name;
	}
}
class Book extends Publisher
{
	String nbook,author;
	float price;
	Book(String pname,String aname,String bname,float price)
	{
		super(pname);
		nbook=bname;
		author=aname;
		this.price=price;
	}
}
class Literature extends Book
{
	Literature(String bname,String aname,String pname,float p1)
	{
		super(pname,aname,bname,p1);
	}
	void display1()
	{
		System.out.println("Publisher name: " + pub_name);
		System.out.println("Name of the book: : " + nbook);
		System.out.println("Author name: " + author);
		System.out.println("Price of book: " + price);
	}
}
class Fiction extends Book
{
	Fiction(String bname,String aname,String pname,float p2)
	{
		super(pname,aname,bname,p2);
	}
```

```
	void display2()
	{
		System.out.println("Publisher name: " + pub_name);
		System.out.println("Name of the book: " + nbook);
		System.out.println("Author name: " + author);
		System.out.println("Price of book: " + price);
	}
	 }
	class Bookdetails
	{
	 public static void main(String args[])
	 {
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter details of the book(literature): ");
		System.out.println("Name of book: ");
		String b1name=sc.nextLine();
		System.out.println("Name of author: ");
		String a1name=sc.nextLine();
		System.out.println("Publisher name: ");
		String p1name=sc.nextLine();
		System.out.println("Price: ");
		float p1=sc.nextFloat();
		Scanner s=new Scanner(System.in);
		System.out.println("Enter details of the book(fiction): ");
		System.out.println("Name of book: ");
		String b2name=s.nextLine();
		System.out.println("Name of author: ");
		String a2name=s.nextLine();
		System.out.println("Publisher name: ");
		String p2name=s.nextLine();
		System.out.println("Price: ");
		float p2=s.nextFloat();
		System.out.println(" ");
		System.out.println("Book Details : ");
		Literature l=new Literature(b1name,a1name,p1name,p1);
		l.display1();
		System.out.println(" ");
		System.out.println("Book Details : ");
		Fiction f=new Fiction(b2name,a2name,p2name,p2);
		f.display2();
	 }
}
```

OUTPUT

```
mca1@cscc2d63:~$ gedit book.java
mca1@cscc2d63:~$ gedit bookdetails.java
mca1@cscc2d63:~$ javac bookdetails.java
mca1@cscc2d63:~$ java bookdetails
Literature Book Details:
Title: Pride and Prejudice
Year: 1813
Publisher: ABC Publications
Author: Jane Austen
Category: Literature

Fiction Book Details:
Title: The Great Gatsby
Year: 1925
Publisher: ABC Publications
Genre: Drama
Category: Fiction
```

SOURCE CODE

```
import java.util.*;
interface Student
{
  void read1(String sname,float s,String admsn);
}
interface Sports
{
  void read2(float p);
}
class Result implements Student, Sports
{
        public String name,admsn;
        public float total;
        public float point;
        public void read1(String sname,float s,String regno)
        {
          name=sname;
          total=s;
          admsn=regno;
        }
        public void read2(float pt)
        {
                point=pt;
        }
        public void display()
        {
          System.out.println("Register number: "+admsn);
          System.out.println("Name: " +name);
          System.out.println("Academic CGPA: "+total);
          System.out.println("Score obtained in sports: "+point);
        }

   }
 class interface
   {
     public static void main(String args[])
     {
       Scanner sc=new Scanner(System.in);
       Scanner s=new Scanner(System.in);
       float pt,total;
```

```
        System.out.print("Enter the admission number: ");
        String admsn=sc.nextLine();
        System.out.print("Name of the student: ");
        String name=sc.nextLine();
        System.out.println("Enter the academic and sports details of a student: ");
        System.out.print("Enter the total CGPA obtained: ");
        total=s.nextFloat();
        System.out.print("Enter the overall score point obtained in sports(out   of 10): ");
        pt=s.nextFloat();
        Result o =new Result();
        o.read1(name,total,admsn);
        o.read2(pt);
        o.display();
    }
}
```

OUTPUT

SOURCECODE

```
import java.util.Scanner;
interface prop
{
   void getdata();
   void area();
   void perimeter();
}

class Circle implements prop
{
   double pi = 3.14;
   double r;
   Scanner sc = new Scanner(System.in);
   public void getdata()
   {
      System.out.println("Enter the radius of the circle:");
      r = sc.nextDouble();
   }

   public void perimeter()
   {
      System.out.println("Perimeter of the circle: "+(2*pi*r));
   }

   public void area()
   {
      System.out.println("Perimeter of the circle: "+(pi*r*r));
   }
}

class Rectangle implements prop
{
   double l,b;
   Scanner sc = new Scanner(System.in);

   public void getdata()
   {
      System.out.println("Enter the length of the rectangle:");
      l = sc.nextDouble();
      System.out.println("Enter the breadth of the rectangle:");
      b = sc.nextDouble();    }
```

```
  public void area()
  {
     System.out.println("Perimeter of a rectangle: "+(l*b));
  }
  public void perimeter()
  {
     System.out.println("Perimeter of a rectangle: "+(2*(l+b)));
  }
}
 public class shapes
{
  public static void main(String[] args)
  {
     int ch;
     Scanner sc = new Scanner(System.in);
     Circle ob = new Circle();
     Rectangle obj = new Rectangle();
     do
     {
        System.out.println("\n1.Circle\n2.Rectangle\n3.exit");
        System.out.println("Enter your choice:");
        ch = sc.nextInt();
        switch(ch)
        {
           case 1 :ob.getdata();
                   ob.area();
                   ob.perimeter();
                   break;
           case 2 :obj.getdata();
                   obj.area();
                   obj.perimeter();
                   break;
           case 3 :System.out.println("Exited...");
                   System.exit(0);
        }
     }while(true);
  }
}
```

OUTPUT

```
mca1@cscc2d63:~$ javac shapes.java
mca1@cscc2d63:~$ java shapes

1.Circle
2.Rectangle
3.exit
Enter your choice:
1
Enter the radius of the circle:
3
Perimeter of the circle: 28.259999999999998
Area of the circle: 18.84

1.Circle
2.Rectangle
3.exit
Enter your choice:
2
Enter the length of the rectangle:
3
Enter the breadth of the rectangle:
4
Area of a rectangle: 12.0
Perimeter of a rectangle: 14.0

1.Circle
2.Rectangle
3.exit
Enter your choice:
^Z
[4]+  Stopped                 java shapes
```

SOURCECODE

```
import java.util.*;
import java.text.SimpleDateFormat;
interface bill
{
  void method();
}
class Product implements bill
{
        String p_name;
        int p_id,p_qty,order_no;
        float p_price,total_price;
        Product()
        {
        }
        Product(String name,int id,int qty,float price,float total)
        {
                p_name=name;
                p_id=id;
                p_qty=qty;
                p_price=price;
                total_price=total;
        }
        void display()
        {
          Date date = new Date();
          SimpleDateFormat formatter = new SimpleDateFormat("dd/MM/yy");
          String str = formatter.format(date);
          Random rand = new Random();
          int upperbound = 25;
          int int_random = rand.nextInt(upperbound);
          System.out.println("\n");
          System.out.println("Order no:"+ int_random);
          System.out.println("Date: " + str);
          System.out.println("------------------------------------------------------------");
          System.out.println("\nProduct Id\tName\t Quantity\tUnit price\tTotal");
        }
        public void method()
        {
         System.out.println(p_id+"\t\t" +p_name+"\t\t" +p_qty+"\t" +p_price+"\t\t"
         +total_price);}}
        class Bill
```

```
{
  public static void main(String args[])
{
 Scanner sc=new Scanner(System.in);
 Scanner s=new Scanner(System.in);
 float net_amt=0,total;
 System.out.print("Enter the total number of items: ");
 int n=sc.nextInt();
 Product [] obj=new Product[n];
 for(int i=0;i<n;i++)
 {
 System.out.println("Enter product" + " " +(i+1) + " " + "details:");
 System.out.print("Name: ");
 String name = s.nextLine();
 System.out.print("ID: ");
 int id= sc.nextInt();
 System.out.print("Quantity: ");
 int qty = sc.nextInt();
 System.out.print("Price (per item): ");
 float price = sc.nextFloat();
 total = price * qty;
 net_amt+=total;
 obj[i]=new Product(name,id,qty,price,total);
 }
 Product prdct=new Product();
 prdct.display();
 for(int i=0;i<n;i++)
 obj[i].method();
 System.out.println("-----------------------------------------------------");
 String temp="Net Amount";
 System.out.println("\t\t\t\t\t\t"+temp+" "+net_amt);
 System.out.println();
  }
}
```

OUTPUT

```
mca_exam@cscc2d71:~$ javac Bill.java
mca_exam@cscc2d71:~$ java Bill
Enter the total number of items: 3
Enter product 1 details:
Name: shampoo
ID: 101
Quantity: 2
Price (per item): 100
Enter product 2 details:
Name: soap
ID: 203
Quantity: 8
Price (per item): 30
Enter product 3 details:
Name: atta
ID: 301
Quantity: 10
Price (per item): 58


Order no:24
Date: 03/07/23
------------------------------------------------------------------------

Product Id     Name    Quantity      Unit price     Total
101            shampoo       2      100.0          200.0
203            soap          8      30.0           240.0
301            atta          10     58.0           580.0
------------------------------------------------------------------------
                                    Net Amount 1020.0
```

SOURCE CODE

```
 import java.util.Scanner;
 abstract class shape{
 abstract void Findarea();
}
class Rectangle extends Shape{
    double length,breadth;
    Rectangle(double len,double bre){
        this.length=len;
        this.breadth=bre;
    }
    void Findarea(){
            double area=length*breadth;
            System.out.println("Area of rectangle is :"+area);
    }
}

class Square extends Shape{
    double side;
    Square(double s){
        this.side=s;
    }
    void Findarea(){
            double area=side*side;
            System.out.println("Area of square is :"+area);
    }
}

class Circle extends Shape{
double radius;
 Circle(double r){
  this.radius=r;
    }
    void Findarea(){
        double area=3.14*radius*radius;
        System.out.println("Area of circle is :"+area);
    }
}
   class Abstract {
    public static void main(String[] args)
    {
```

```
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the radius of the circle :");
        double radius=sc.nextDouble();
        Circle obj=new Circle(radius);
        obj.Findarea();
        System.out.print("Enter the side of the square :");
        double side=sc.nextDouble();
        Square obj1=new Square(side);
        obj1.Findarea();
        System.out.print("Enter the length of the rectangle :");
        double length=sc.nextDouble();
        System.out.print("Enter the breadth of the rectangle :");
        double breadth=sc.nextDouble();
        Rectangle obj2=new Rectangle(length,breadth);
        obj2.Findarea();
        sc.close();
    }
}
```

OUTPUT

```
nca_exam@cscc2d71:~$ javac Abstract.java
nca_exam@cscc2d71:~$ java Abstract
Enter the length of the rectangle: 3
Enter the breadth of the rectangle: 9
Area of rectangle is  27.0
Enter the radius of the circle: 4
Area of circle is  50.24
Enter the side length of the square: 2
Area of square is  4.0
nca_exam@cscc2d71:~$
```

SOURCE CODE

```
import java.util.*;
class Shapes{
float a,b;
Shapes(){}
Shapes(float value){
a=value;
}
Shapes(float val1,float val2){
a=val1;
b=val2;
}
double area(){
System.out.println("Area of different shapes");
return 0;
}
}
class Rectangle extends Shapes{
Rectangle(float a,float b){
super(a,b);
}
double area(){
return a*b;
}
}
class Circle extends Shapes
{
Circle(float a)
{super(a);
}
double area(){
return 3.14*a*a;
}}
class Square extends Shapes{
Square(float a){
super(a);
}
double area(){
return a*a;
}}
class overriding{
public static void main(String args[]){
```

```
Scanner sc=new Scanner(System.in);
Shapes obj=new Shapes();
obj.area();
System.out.print("Enter the radius of the circle: ");
float r=sc.nextFloat();
Circle obj1=new Circle(r);
System.out.println("Area of circle is " + " " + obj1.area());
System.out.print("Enter the length of the rectangle: ");
float l=sc.nextFloat();
System.out.print("Enter the breadth of the rectangle: ");
float b=sc.nextFloat();
Rectangle obj2=new Rectangle(l,b);
System.out.println("Area of rectangle is " + " " + obj2.area());
System.out.print("Enter the side length of the square: ");
float a=sc.nextFloat();
Square obj3=new Square(a);
System.out.println("Area of square is " + " " + obj3.area());
}
}
```

OUTPUT