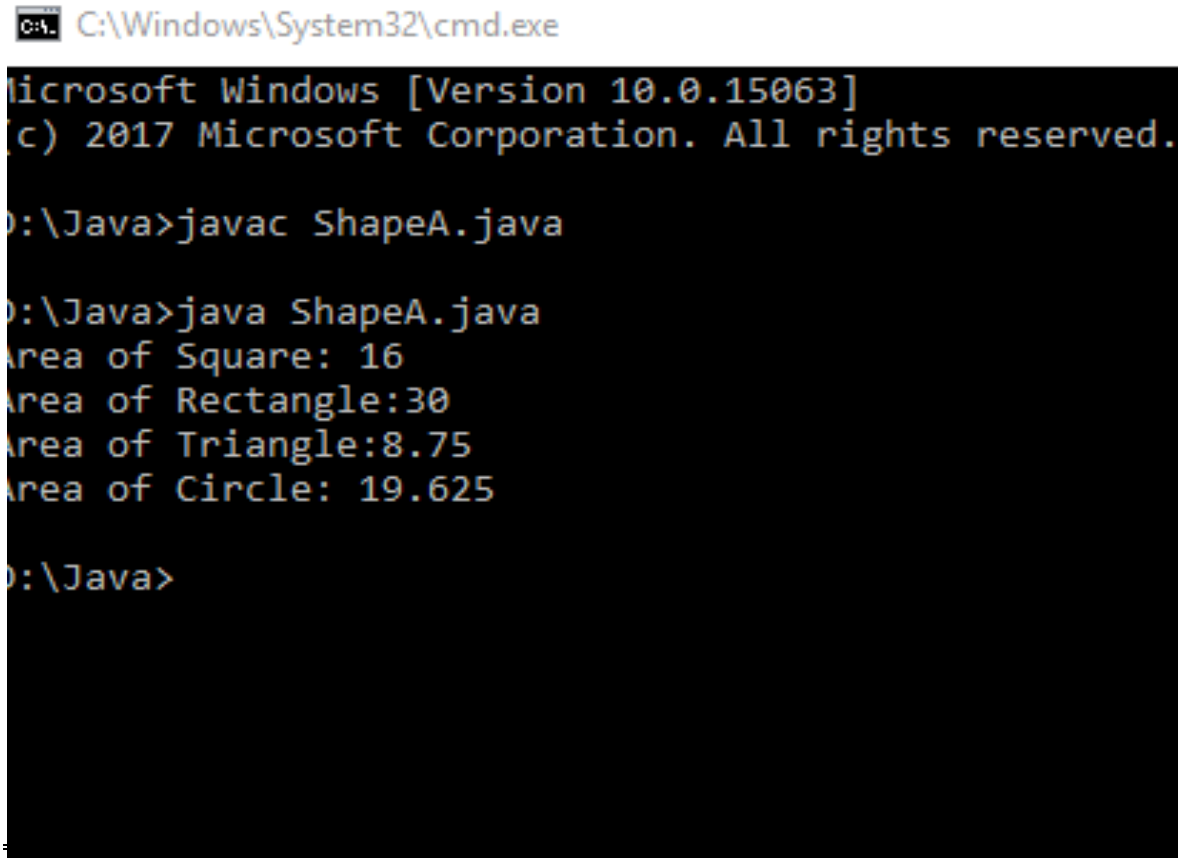
CO3

1) Area of different shapes using overload function.

Program

```
public class ShapeA
{
int area(int side)
{
return side*side;
}
int area(int l,int b)
{
return l*b;
}
double area(double b,double h)
{
return (0.5*(b*h));
}
double area(double r)
{
return (3.14*r*r);
}
public static void main(String[] args) {
ShapeA obj=new ShapeA();
System.out.println("Area of Square: "+obj.area(4));
System.out.println("Area of Rectangle:"+obj.area(5,6));
System.out.println("Area of Triangle:"+obj.area(3.5,5.0));
System.out.println("Area of Circle: "+obj.area(2.5));

}
}
```

Output


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.
D:\Java>javac ShapeA.java
D:\Java>java ShapeA.java
Area of Square: 16
Area of Rectangle:30
Area of Triangle:8.75
Area of Circle: 19.625
D:\Java>

2) Create a class ‘Employee’ with data members Empid, Name, Salary, Address, and constructors to initialize the data members. Create another class ‘Teacher’ the inherit the properties of class employee and contain its own data members department, Subjects taught and constructors to initialize these data members and also include display fuction to display all the data members. Use array of subjects to display details of N teachers.

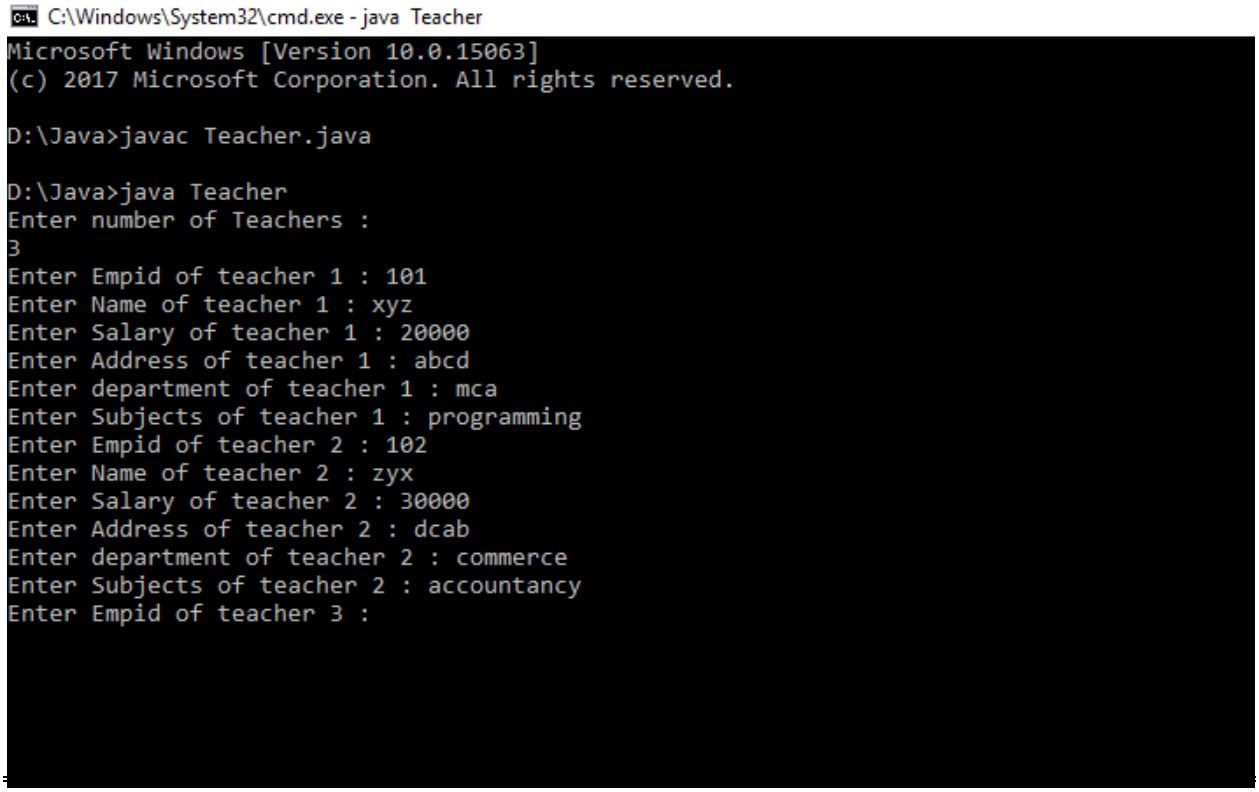
Program

```
import java.util.*;
 class Employee
 {
 int empid;
 String name,address;
  double salary;
 public Employee(int empid, String name, String address, double salary){

this.empid = empid;
  this.name = name;
this.address = address;
this.salary = salary;
 }
}
public class Teacher extends Employee
```

```
{
String subject,department;

public Teacher(int empid, String name, String address, double salary, String department, String subject )
 {
super(empid, name, address, salary);
this.subject = subject;
this.department = department;
}

void display()
{
System.out.println("Employee id : "+this.empid+" Name : "+this.name+" Salary : "+this.salary+" Address : "+this.address+" department : "+this.department+" Subjects : "+this.subject);
}
public static void main(String[] args)
 {
 Scanner sc=new Scanner(System.in);
 int n;
System.out.println("Enter number of Teachers : ");
 n=sc.nextInt();
 Teacher obj[]=new Teacher[n];
```

```
for(int i=0;i<n;i++) {
        int j = i+1;
System.out.print("Enter Employee id of teacher "+j+" : ");
        int Empid = sc.nextInt();
System.out.print("Enter Name of teacher "+j+" : ");
        String Name = sc.next();
System.out.print("Enter Salary of teacher "+j+" : ");
        double Salary = sc.nextDouble();
System.out.print("Enter Address of teacher "+j+" : ");
        String Address = sc.next();
System.out.print("Enter department of teacher "+j+" : ");
        String department =sc.next();
System.out.print("Enter Subjects of teacher "+j+" : ");
        String Subjects =sc.next();

       obj[i] = new Teacher(Empid, Name, Address, Salary, department, Subjects);
  }
System.out.println("Teacher's List is \n");
for(int i=0;i<n;i++) {
 obj[i].display();
}
 }
}
```

Output


C:\Windows\System32\cmd.exe - java Teacher
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.
D:\Java>javac Teacher.java
D:\Java>java Teacher
Enter number of Teachers :
3
Enter Empid of teacher 1 : 101
Enter Name of teacher 1 : xyz
Enter Salary of teacher 1 : 20000
Enter Address of teacher 1 : abcd
Enter department of teacher 1 : mca
Enter Subjects of teacher 1 : programming
Enter Empid of teacher 2 : 102
Enter Name of teacher 2 : zyx
Enter Salary of teacher 2 : 30000
Enter Address of teacher 2 : dcab
Enter department of teacher 2 : commerce
Enter Subjects of teacher 2 : accountancy
Enter Empid of teacher 3 :

3) Create a class ‘Person’ with data members Name, Gender, Address, Age and a constructor to initialize the data members and another class ‘Employee’ that inherits the properties of class person and also contain its own data members like Empid, Company_name, Qualification, Salary and its own calculator. Create another class ‘Teacher’ that inherits the properties of class Employee and contains its own data members like Subject, Department, teacherid and also contain constructors and methods to display the data members. Use array of objects to display the details od N teachers.

Program

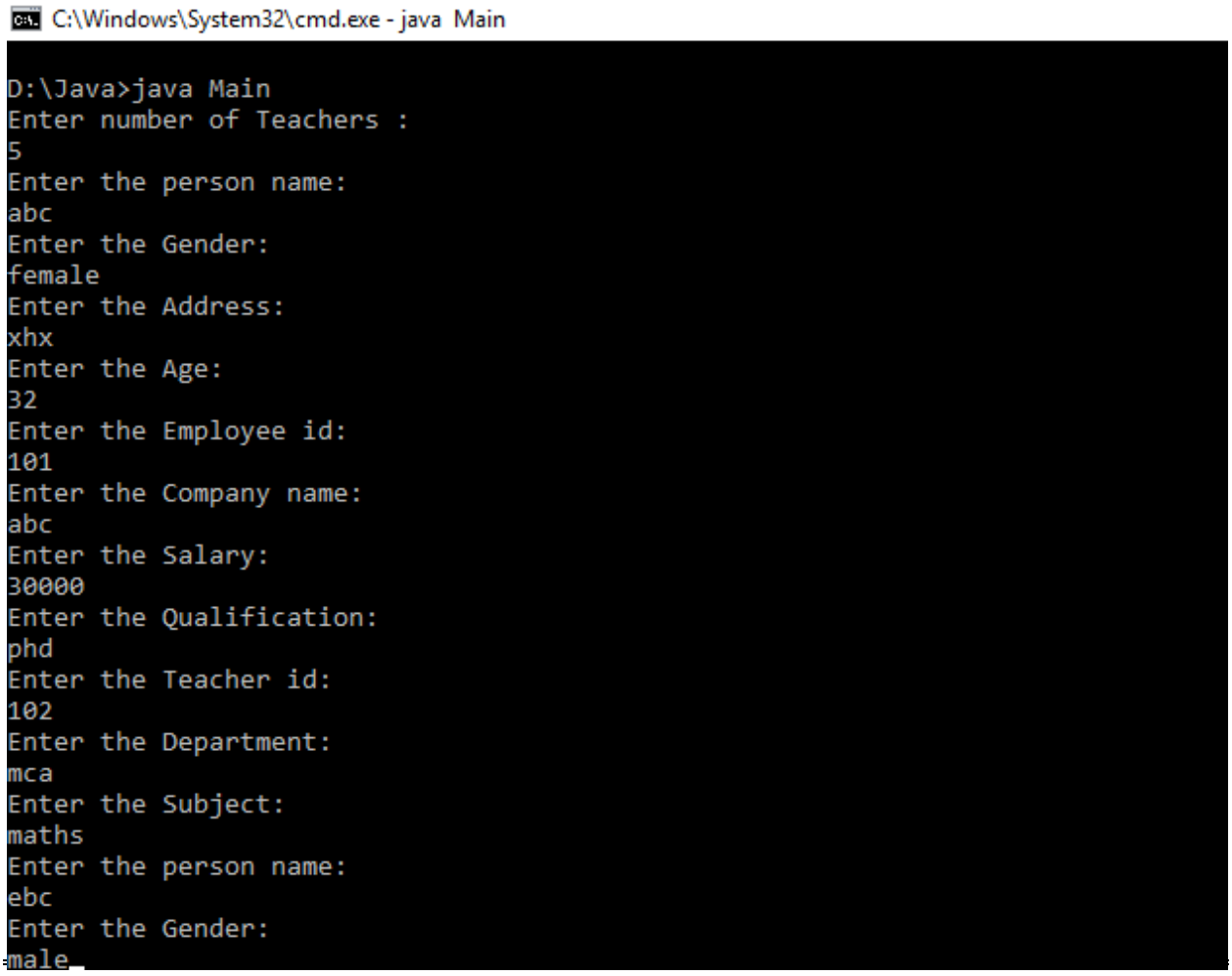
```
Package  sample;
import java.util.Scanner;
class Person
{
 String name,gender,address;
 int age;
 public Person(String name, String gender, String address, int age) {
super();
  this.name = name;
this.gender = gender;
this.address = address;
this.age = age;
 }
}
class Employee extends Person {
 int empid;
 String company_name,qualification;
  double salary;
 public Employee(String name, String gender, String address, int age, int
empid, String company_name,
 String qualification, double salary) {
super(name, gender, address, age);
```

```
this.empid = empid;
this.company_name = company_name;
this.qualification = qualification;
this.salary = salary;
 }
 }
 class Teacher extends Employee
{
String subject,department;
int teacherid;
public Teacher(String name, String gender, String address, int age, int
empid, String company_name,
  String qualification, double salary, String subject, String department, int
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("Personal details are");
System.out.println(" Name : "+this.name+" Gender : "+this.gender+" Age
:"+this.age);
System.out.println("Employee details are");
System.out.println("Empid : "+this.empid +" company_name :
"+this.company_name+" Salary : "+this.salary+" Address : "+this.address+"
qualification : "+this.qualification);
System.out.println("Teacher's details are");
System.out.println(" teacherid : "+this.teacherid+ " department :
"+this.department+" Subjects : "+this.subject);
}
}
public class Main{
```

```
 public static void main(String[] agr) {
  Scanner s=new Scanner(System.in);
  int n;
System.out.println("Enter number of Teachers : ");
  n=s.nextInt();
  Teacher obj[]=new Teacher[n];
for(int i=0;i<n;i++) {
System.out.println("Enter the person name:");
    String nam1=s.next();
System.out.println("Enter the Gender: ");
    String gen1=s.next();
System.out.println("Enter the Address: ");
    String adr1=s.next();
System.out.println("Enter the Age:");
    int age1=s.nextInt();
System.out.println("Enter the Employee id: ");
    int id1=s.nextInt();
System.out.println("Enter the Company name: ");
    String cname1=s.next();
System.out.println("Enter the Salary:");
    double sal1=s.nextDouble();
System.out.println("Enter the  Qualification:");
    String qu1=s.next();
          System.out.println("Enter the Teacher id: ");
    int tid1=s.nextInt();
System.out.println("Enter the  Department:");
    String dept1=s.next();
System.out.println("Enter the Subject:");
    String sub1=s.next();

    obj[i]=new
Teacher(nam1,gen1,adr1,age1,id1,cname1,qu1,sal1,sub1,dept1,tid1);
   }
for(int i=0;i<n;i++) {
         obj[i].display();
```

```
    }
 }
}
```

Output


C:\Windows\System32\cmd.exe - java Main
D:\Java>java Main
Enter number of Teachers :
5
Enter the person name:
abc
Enter the Gender:
female
Enter the Address:
xhx
Enter the Age:
32
Enter the Employee id:
101
Enter the Company name:
abc
Enter the Salary:
30000
Enter the Qualification:
phd
Enter the Teacher id:
102
Enter the Department:
mca
Enter the Subject:
maths
Enter the person name:
ebc
Enter the Gender:
male

4) Write a program has class Publisher, Book, Literature and Fiction.Read the information and print the details of books from either the category, using inheritance.

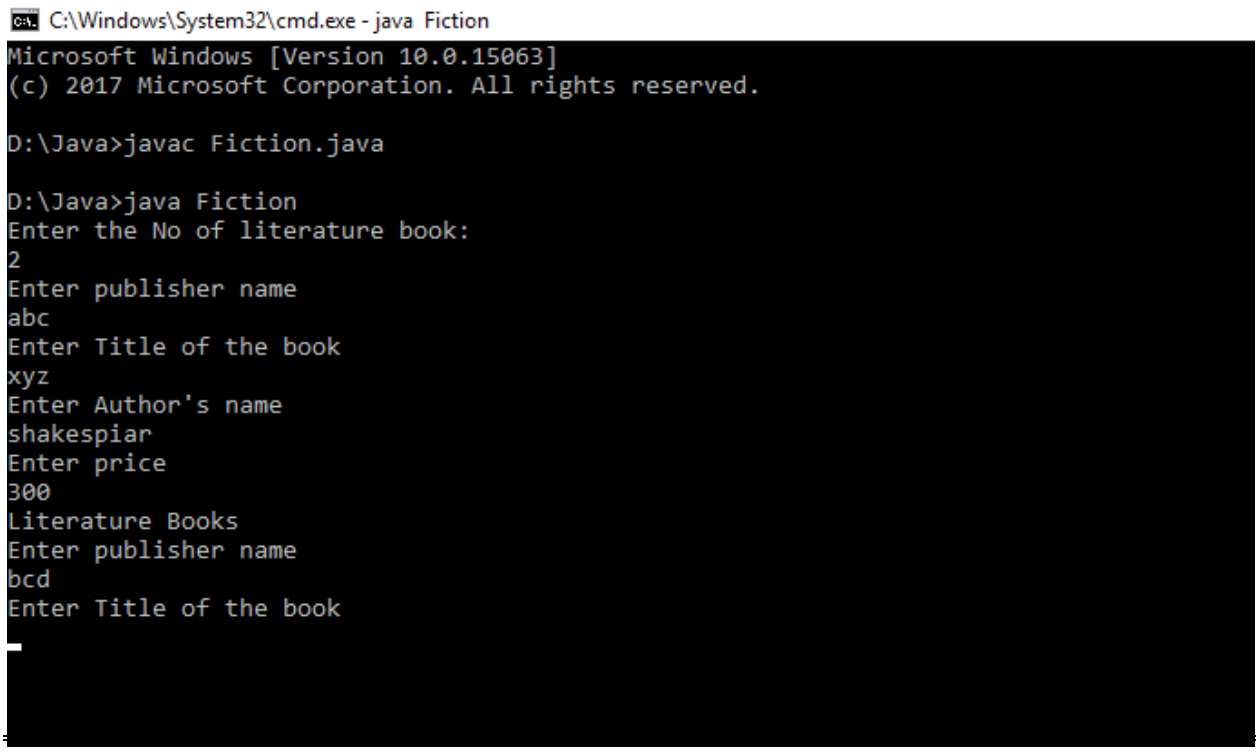
Program

```
package sample;
import java.util.Scanner;

  class Publisher {
  String Pubname;

Publisher()
 {
  Scanner s=new Scanner(System.in);
System.out.println("Enter publisher name");
Pubname=s.next();
 }
 }
 class Book extends Publisher
 {
  String title, author;
  int price;

Book()
 {
  Scanner s=new Scanner(System.in);
System.out.println("Enter Title of the book");
  title=s.next();
System.out.println("Enter Author's name");
  author=s.next();
System.out.println("Enter price");
  price=s.nextInt();
 }
 }
```

```
 class Literature extends Book
 {
Literature()
 {
System.out.println("Literature Books");
 }
  void display()
  {
System.out.println("Publisher name: "+Pubname);
System.out.println("Title of the book: "+title);
System.out.println("Author's name: "+author);
System.out.println("Price: "+price);
  }

}
 class Fiction extends Literature
 {
Fiction()
 {
System.out.println("Friction Books");
 }
 void display()
 {
super.display();
 }

 public static void main(String args[])
 {
  int n;
  Scanner s=new Scanner(System.in);

System.out.println("Enter the No of literature book: ");
  int a=s.nextInt();
  Literature L[]=new Literature[a];
for(int i=0;i<a;i++)
```

```
  {
   L[i]=new Literature();
  }

System.out.println("Enter the No of Fiction book: ");
  int b=s.nextInt();
  Fiction F[]=new Fiction[b];
for(int i=0;i<b;i++)
  {
   F[i]=new Fiction();
   }
     int no;
System.out.println("Enter your choice of book");
  no=s.nextInt();
  int type =no;
  switch (no)
  {
  case 1:
System.out.println(".....Details of literature books");
for(int i=0;i<a;i++)
   L[i].display();
   break;
  case 2:
System.out.println(".....Details of fiction books");
for(int i=0;i<b;i++)
   F[i].display();
   break;
  default:
System.out.println("Wrong input");
  }
 }
}
```

Output


C:\Windows\System32\cmd.exe - java Fiction
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.
D:\Java>javac Fiction.java
D:\Java>java Fiction
Enter the No of literature book:
2
Enter publisher name
abc
Enter Title of the book
xyz
Enter Author's name
shakespiar
Enter price
300
Literature Books
Enter publisher name
bcd
Enter Title of the book