Course Outcome 3(CO3):

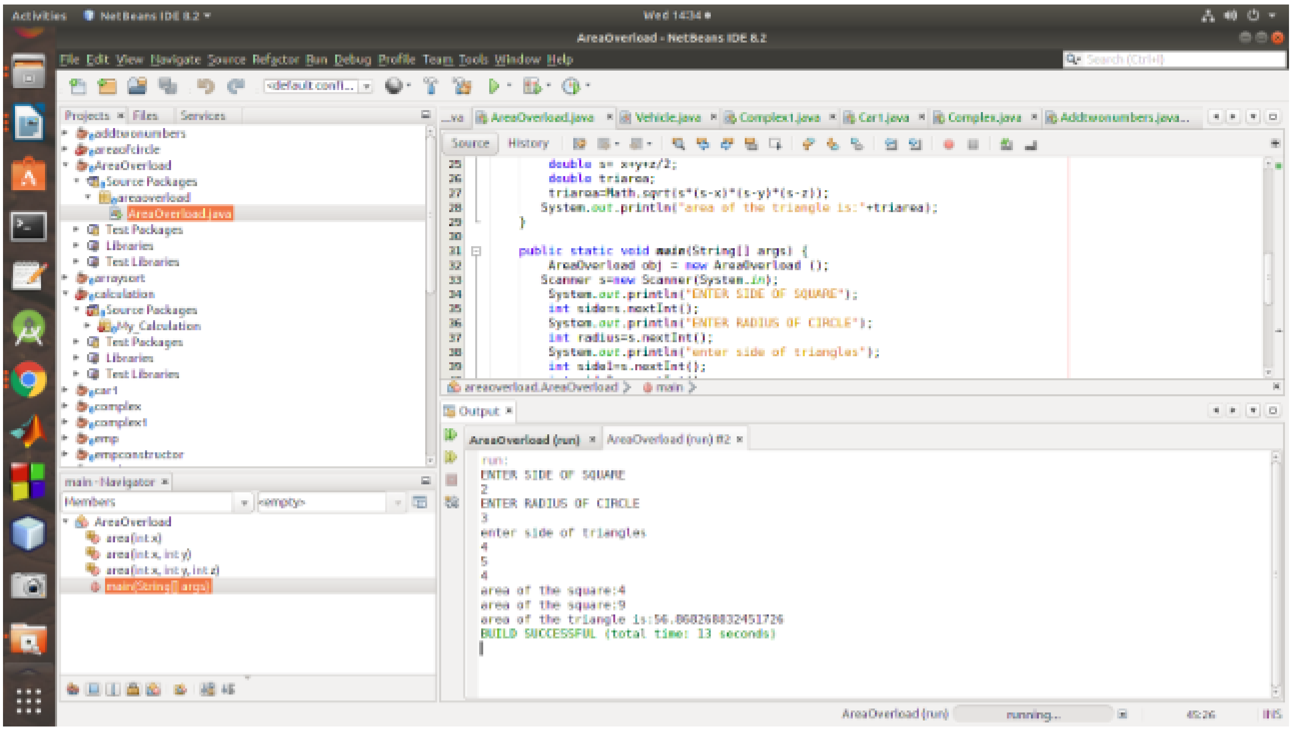
1. Area of different shapes using overloaded functions.

Program:

```
package areaoverload;
import java.util.Scanner;
/**
 *
 * @author sjcet
 */
public class AreaOverload {

    void  area(int x)
    {
        System.out.println("area of the square:"+(x*x));
         }
    void area(int x,int y)
    {
       System.out.println("area of the circle:"+(x*x*3.14));
    }
    void area(int x,int y,int z)
    {

        double s= x+y+z/2;
        double triarea;
        triarea=Math.sqrt(s*(s-x)*(s-y)*(s-z));
       System.out.println("area of the triangle is:"+triarea);
    }

    public static void main(String[] args) {
        AreaOverload obj = new AreaOverload ();
       Scanner s=new Scanner(System.in);
        System.out.println("ENTER SIDE OF SQUARE");
        int side=s.nextInt();
        System.out.println("ENTER RADIUS OF CIRCLE");
        int radius=s.nextInt();
        System.out.println("enter side of triangles");
        int side1=s.nextInt();
        int side2=s.nextInt();
        int side3=s.nextInt();


        obj.area(side);
        obj.area(radius);
        obj.area(side1,side2,side3);



}
```

}

output:



```
            double s= x+y+z/2;
            double triarea;
            triarea=Math.sqrt(s*(s-x)*(s-y)*(s-z));
           System.out.println("area of the triangle is:"+triarea);
        }

        public static void main(String[] args) {
            AreaOverload obj = new AreaOverload ();
           Scanner s=new Scanner(System.in);
            System.out.println("ENTER SIDE OF SQUARE");
            int sidea=s.nextInt();
            System.out.println("ENTER RADIUS OF CIRCLE");
            int radius=s.nextInt();
            System.out.println("enter side of triangles");
            int side1=s.nextInt();
```

```
run:
ENTER SIDE OF SQUARE
2
ENTER RADIUS OF CIRCLE
3
enter side of triangles
4
5
4
area of the square:4
area of the square:9
area of the triangle is:56.868268832451726
BUILD SUCCESSFUL (total time: 13 seconds)
```

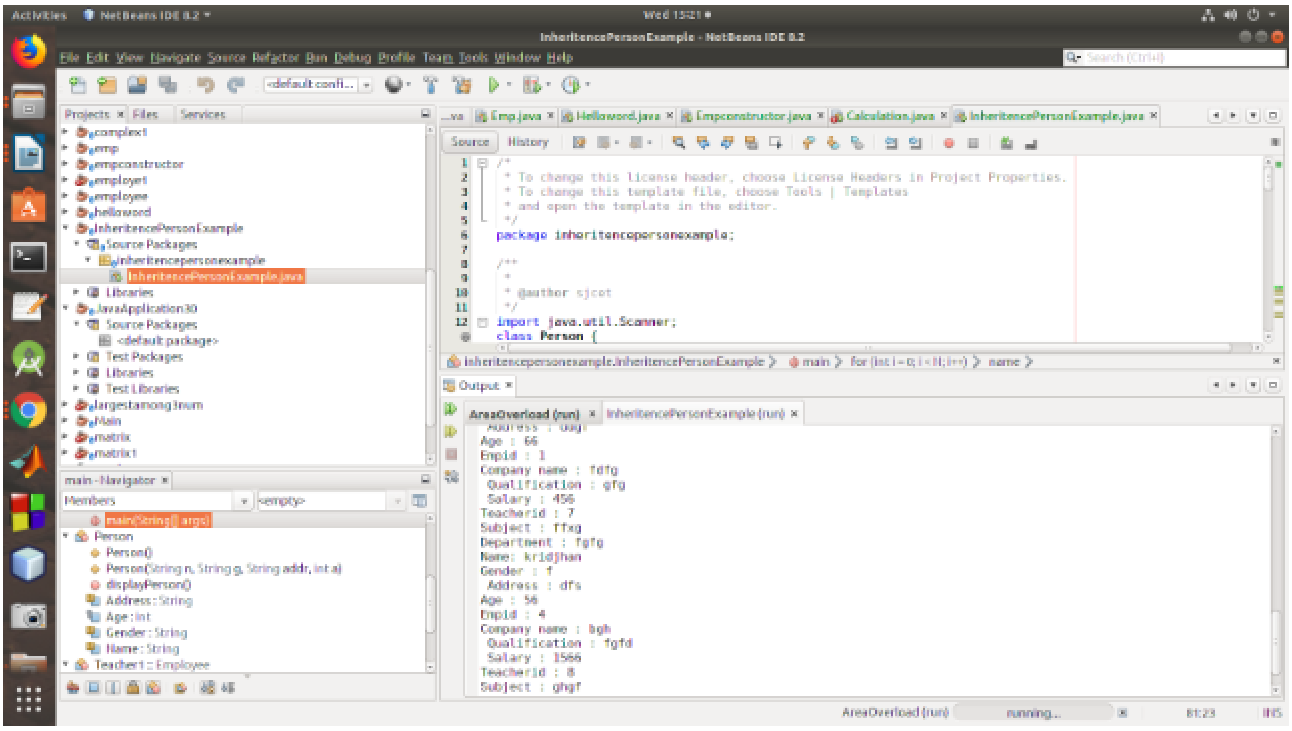
2. Create a class ‘Person’ with data members Name, Gender, Address, Age and a constructor to initialize the data members and another class ‘Employee’ that inherits the properties of class Person and also contains its own data members like Empid, Company_name, Qualification, Salary and its own constructor.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

Program:

```
package inheritencepersonexample;

/**
 *
 * @author sjcet
 */
import java.util.Scanner;
class Person {
String Name, Gender , Address ;
protected int Age ;
public Person ( ) { }
public Person ( String n , String g , String addr , int a ){
this . Name = n ;
this . Gender = g ;
this . Address =addr ;
this . Age = a ;
}
public void displayPerson ( ) {
System.out.println ( "Name: "+Name ) ;
System.out.println ( "Gender : " + Gender ) ;
System.out.println ( " Address : " + Address ) ;
System.out.println ( "Age : " + Age ) ;
}
}
class Employee extends Person {
int Empid , Salary ;
String Companyname , Qualification ;
public Employee ( ) { }
public Employee ( String n , String g , String addr , int a , int eid , String cname , String
qual , int sal
){

super ( n , g , addr , a ) ;
Empid = eid ;
Companyname = cname ;
Qualification= qual ;
Salary = sal ;

}
public void displayEmployee ( ) {
super . displayPerson ( ) ;
System.out.println ( "Empid : "+Empid ) ;
System.out.println ( "Company name : " + Companyname ) ;
System.out.println( " Qualification : " + Qualification ) ;
System.out.println ( " Salary : " + Salary ) ;
}
}
class Teacher1 extends Employee{
String Subject , Department ;
int Teacherid ;
public Teacher1 ( String n , String g , String addr , int a ,
int eid , String cname , String qual , int sal ,
String sub , String dept , int tid ){
super ( n , g , addr , a , eid , cname , qual , sal ) ;
Subject = sub ;
Department = dept ;
Teacherid = tid ;
}
public void displayTeacher ( ) {
super . displayEmployee ( ) ;
System.out.println( "Teacherid : " + Teacherid ) ;
System.out.println( "Subject : " + Subject ) ;
System.out.println( "Department : " + Department ) ;
}
}

public class InheritencePersonExample {
```

```
public static void main ( String args[ ] ) {
System.out.println( "Enter number of teachers " ) ;
Scanner sc=new Scanner(System.in);

int N = sc . nextInt ( ) ;
Teacher1[ ] teacher1s = new Teacher1 [N ] ;
Scanner scs = new Scanner ( System.in ) ;
for ( int i = 0 ; i<N; i ++){
System.out.println( "Enter name of the teacher " ) ;
String name = scs . nextLine ( ) ;
System.out.println ( "Enter gender of the teacher " ) ;
String gen = scs.next ( ) ;
System.out.println ( "Enter address of the teacher ") ;
String addr = scs.next( ) ;
System.out.println( "Enter age of the teacher " ) ;
int ag = sc.nextInt( ) ;
System.out.println( "Enter Empid o f the teacher ") ;
int eid = sc. nextInt( ) ;
System.out.println ( " Enter Company name " ) ;
String cn = scs.next ( ) ;
System.out.println ( "Enter qualification of the teacher " ) ;
String quali = scs . next ( ) ;
System.out.println ( "Enter salary of the teacher " ) ;
int sal = sc.nextInt( ) ;

System.out.println( " Enter Teacher id " ) ;
int tid =
Scanner sc=new Scanner(System.in);

int N = sc . nextInt ( ) ;
Teacher1[ ] teacher1s = new Teacher1 [N ] ;
Scanner scs = new Scanner ( System.in ) ;
for ( int i = 0 ; i<N; i ++){sc.nextInt( ) ;
System.out.println ( " Enter Subject of the teacher " ) ;
String sub = scs.next ( ) ;
System.out.println ( " Enter Department of the teacher " ) ;
String dept = scs.next( ) ;
Teacher1 t = new Teacher1 ( name , gen , addr , ag , eid , cn , quali , sal , sub , dept , tid ) ;

teacher1s[ i ]=t ;
}
for(Teacher1 t : teacher1s ) {

t . displayTeacher( ) ;
}
}
}
```

output:



```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package inheritencepersonexample;

/**
 *
 * @author sjcet
 */
import java.util.Scanner;
class Person {
```

```
 Address : ddgf
Age : 66
Empid : 1
Company name : fdfg
 Qualification : gfg
 Salary : 456
Teacherid : 7
Subject : ffxg
Department : fgfg
Name: kridjhan
Gender : f
 Address : dfs
Age : 56
Empid : 4
Company name : bgh
 Qualification : fgfd
 Salary : 1566
Teacherid : 8
Subject : ghgf
```