Programming Paradigms Laboratory

B.Tech.

Name : Subhendu Maji

Roll Number : 18ETCS002121

Department : Computer Science and Engineering

Faculty of Engineering & Technology

Ramaiah University of Applied Sciences

Faculty	Engineering & Technology
Programme	B. Tech. in Computer Science and Engineering
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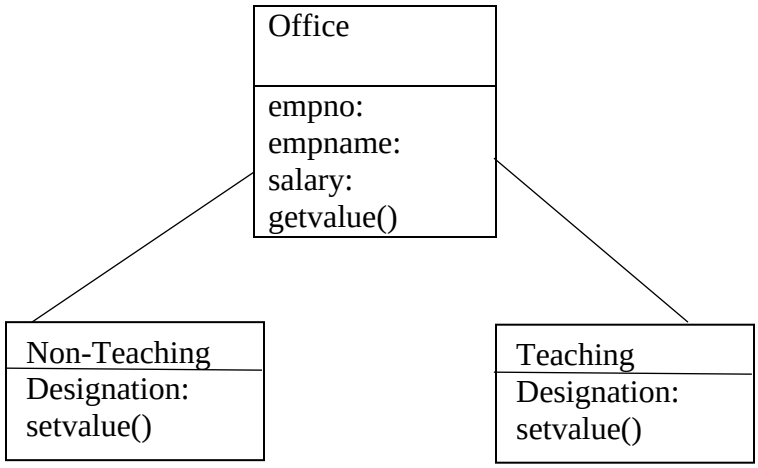
Name of the Laboratory	Programming Paradigms Laboratory
Laboratory Code	19CSL217A

Laboratory 6

Title of the Laboratory Exercise: Inheritance

1. Questions

   a. Develop a java application to implement educational hierarchy using inheritance



   b. Develop a Java program to create an class shape. Let rectangle and triangle inherit this shape class. Add necessary functions.

2. Calculations/Computations/Algorithms

```
package officelll;
import java.util.Scanner;
class office
{
    int id;
    String name;
    double salary;
    office(int a,String b,double c)
    {
        id=a;
        name=b;
        salary=c;
    }
    void getvalue()
    {
        System.out.println("The Employee name "+name+" the id is "+id+" the amount of salary paid is "+salary);
    }
}
class nonteach extends office
{
    String des="Attender";
    public nonteach(int a, String b, double c) {
        super(a, b, c);
    }
    void setvalue()
```

Fig1.1

```
    {
       id=456;
        name="manju";
        salary=30000;
         System.out.println("The Employee name "+name+" the id is "+id+" the amount of salary paid is "+salary+" the desination is "+des);
    }
}
class teach extends office
{
    String des="professor";
    public teach(int a, String b, double c) {
        super(a, b, c);
    }
    void setvalue()
    {
        id=123;
        name="akash";
        salary=20000;
         System.out.println("The Employee name "+name+" the id is "+id+" the amount of salary paid is "+salary+" the desination is "+des);
    }
}
public class Office111 {
    public static void main(String[] args) {
        int id;
       String name;
       double salary;
        Scanner obj=new Scanner(System.in);
       System.out.println("Enter the id, name and salary of the employee");
       id=obj.nextInt();
       name=obj.next();
       salary=obj.nextDouble();
```

Fig1.2

```
        teach obj1=new teach(id,name,salary);
        nonteach obj2=new nonteach(id,name,salary);
        obj1.getvalue();
        obj1.setvalue();
        obj2.setvalue();
    }
}
```

Fig1.3

Fig 1.1, 1.2, 1.3 Represents the java program to implement educational hierarchy using inheritance

```
package lab6b;
import java.util.Scanner;
class shape
{
    double l,b,h;
    shape(double l,double b,double h){
        this.l=l;
        this.b=b;
        this.h=h;
    }
}
class rect extends shape
{
    public rect(double l, double b, double h) {
        super(l, b, h);
    }
    void area()
    {
        double area=l*b;
        System.out.println("The area of the rectangle is "+area);
    }
}
class trig extends shape
{
    public trig(double l, double b, double h) {
        super(l, b, h);
    }
    void area(double b,double h)
    {
        double area=0.5*b*h;
        System.out.println("The area of the Triangle is "+area);
```

Fig2.1

```
    }
}
public class Lab6b {
    public static void main(String[] args) {
        double l,b,h;
         Scanner obj=new Scanner(System.in);
        System.out.println("Enter the length, breath and the height");
        l=obj.nextDouble();
        b=obj.nextDouble();
        h=obj.nextDouble();
        rect obj1=new rect(l,b,h);
        trig obj2=new trig(l,b,h);
        obj1.area();
        obj2.area(b,h);
    }
}
```

Fig2.2

Fig 2.1, 2.2 Represents the java program to create a class shape. Let rectangle and triangle inherit this shape class. Add necessary functions.

3. Presentation of Results

```
Enter the id, name and salary of the employee
789
anand
50000
The Employee name anand the id is 789 the amount of salary paid is 50000.0
The Employee name akash the id is 123 the amount of salary paid is 20000.0 the desination is professor
The Employee name manju the id is 456 the amount of salary paid is 30000.0 the desination is Attender
BUILD SUCCESSFUL (total time: 13 seconds)
```

Fig 1.4 represents the output of the java program to implement educational hierarchy using inheritance

```
Enter the length, breath and the height
2
4
6
The area of the rectangle is 8.0
The area of the Triangle is 12.0
BUILD SUCCESSFUL (total time: 4 seconds)
```

Fig 2.3 represents the output of the java program to create a class shape. Let rectangle and triangle inherit this shape class. Add necessary functions.

4. Conclusions

We have learned how to do the inheritance for the java program and how the inherit concept works and abstract class in the program to know how it will work and its interaction between 2 or more class.

5. Limitations of Experiments and Results

The objects should be given to the child class of the abstract class as it is inherited.