

# Internet and Web Programming

## Lab Assignment 5

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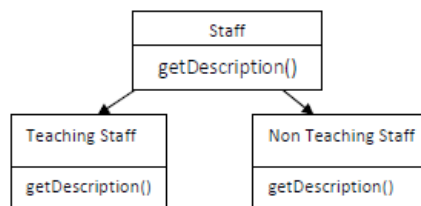
Name: Om Ashish Mishra

Registration Number: 16BCE0789

Slot: B2

### The Questions:

1. Write a java program to calculate gross salary & net salary taking the following data.  
Input: empno, empname, basic pay  
Process: DA=50% of basic pay  
HRA=25% of basic pay  
CCA=Rs2000  
PF=10% of basic pay  
PT=Rs1800
2. Print the marksheet of the student using Single Inheritance.
3. Design a Base class Customer (name, phone-number).  
Derive a class Depositor(accno, balance) from Customer.  
Again, derive a class Borrower (loan-no, loan-amt) from Depositor.  
  
Write necessary member functions to read and display the details of n  
  
Customer.(Multilevel Inheritance)
4. Write a Java program to implement the employee hierarchy. Implement Run Time polymorphism by overriding the getDescription() method.  
Add necessary fields.



5. Create user defined package (Area) contain methods to calculate the area of the various shapes square, rectangle, sphere and triangle. Invoke these methods by importing this package in other java file.
6. Create a class to implement the subscription details(Monthly,quarterly,yearly) of customer for a cable TV connection using abstract class and interface.
  - Include interface containing the method personal() and subscription().
  - Include abstract class containing the abstract method disp\_details().

## The Answers:

1.

```
import java.io.*;
public class calculator {
    public static void main(String args[]) throws IOException
    {
        InputStreamReader read = new InputStreamReader(System.in);
        BufferedReader in = new BufferedReader(read);

        System.out.println("Enter the Employee Number : ");
        float ecode = Float.parseFloat(in.readLine());
        System.out.println("Enter the Employee Name : ");
        String ename = in.readLine();
        System.out.println("Enter the Basic Salary : ");
        double bp = Double.parseDouble(in.readLine());
        double da = 0.5*bp;
        double HRA = 0.25*bp;
        double PF = 0.1*bp;
        double CCA=2000,PT=1800;
        double gs = bp + da + HRA + PF;
        double ns = bp + da + HRA + PF - CCA + PT;
        System.out.println("Gross Salary = " + gs);
        System.out.println("Net Salary = " + ns);
    }
}
```

The Output:

```
Enter the Employee Number :
1234
Enter the Employee Name :
Om Ashish Mishra
Enter the Basic Salary :
10000
Gross Salary = 18500.0
Net Salary = 18300.0
```

2.

```
import java.io.*;
class Marks {
    int m1 = 90;
    int m2 = 91;
    int m3 = 93;
    int m4 = 88;
    int m5 = 90;
    void performs(){
        System.out.println("The agregate marks of the Student is : "+(m1+m2+m3+m4+m5)/5);
    }
}

public class Student extends Marks{
    public static void main(String args[]){
        Student obj = new Student();
        System.out.println("The name of the student is Om Ashish Mishra(16BCE0789).");
        System.out.print("Marks obtained in maths out of 100 : ");
        System.out.println(obj.m1);
        System.out.print("Marks obtained in science out of 100 : ");
        System.out.println(obj.m2);
        System.out.print("Marks obtained in english out of 100 : ");
        System.out.println(obj.m3);
        System.out.print("Marks obtained in social studies out of 100 : ");
        System.out.println(obj.m4);
        System.out.print("Marks obtained in drawing out 100 : ");
        System.out.println(obj.m5);
        System.out.print("Marks obtained in drawing out 100 : ");
        System.out.println(obj.m5);
        obj.performs();
    }
}
```

The output:

```
The name of the student is Om Ashish Mishra(16BCE0789).
Marks obtained in maths out of 100 : 90
Marks obtained in science out of 100 : 91
Marks obtained in english out of 100 : 93
Marks obtained in social studies out of 100 : 88
Marks obtained in drawing out 100 : 90
The agregate marks of the Student is : 90
```

3.

```
import java.io.*;
class Customer {
    String name = "Om Ashish Mishra(16BCE0789)";
    String phone_no = "9994479767";
    public String Name()
    {
        System.out.print("The name of the person : ");
        //System.out.println(name);
        return(name);
    }
    public String phone()
    {
        System.out.print("The phone_no of the person : ");
        //System.out.println(phone_no);
        return(phone_no);
    }
}
```

```
class Depositor extends Customer{
    String accno = "16Bce09XXX";
    double balance = 2097.35;
    public String getAccountNo() {
        System.out.print("Account Number : ");
        return accno;
    }
    public double getbalance() {
        System.out.print("Balance : ");
        return balance;
    }
}
```

```

public class Borrower extends Depositor{
    String loan_no = "1bBce908XX";
    double loan_amt = 23456.89;
    public String getLoanNo() {
        System.out.print("Loan number : ");
        return loan_no;
    }
    public double getloan() {
        System.out.print("Loan Amount : ");
        return loan_amt;
    }
    public static void main(String args[]){
        Borrower obj = new Borrower();
        System.out.println(obj.Name());
        System.out.println(obj.phone());
        System.out.println(obj.getAccountNo());
        System.out.println(obj.getbalance());
        System.out.println(obj.getLoanNo());
        System.out.println(obj.getloan());
    }
}

```

The Output:

```

The name of the person : Om Ashish Mishra(16BCE0789)
The phone_no of the person : 9994479767
Account Number : 16Bce09XXX
Balance : 2097.35
Loan number : 1bBce908XX
Loan Amount : 23456.89

```

4.

```

import java.io.*;
class Staff
{
    void getDescription() { System.out.println("Staff is on Duty!!"); }
}

```

```

// Inherited class
class Teaching_Staff extends Staff
{
    // This method overrides show() of Parent
    @Override
    void getDescription() { System.out.println("A teaching Staff!!"); }
}

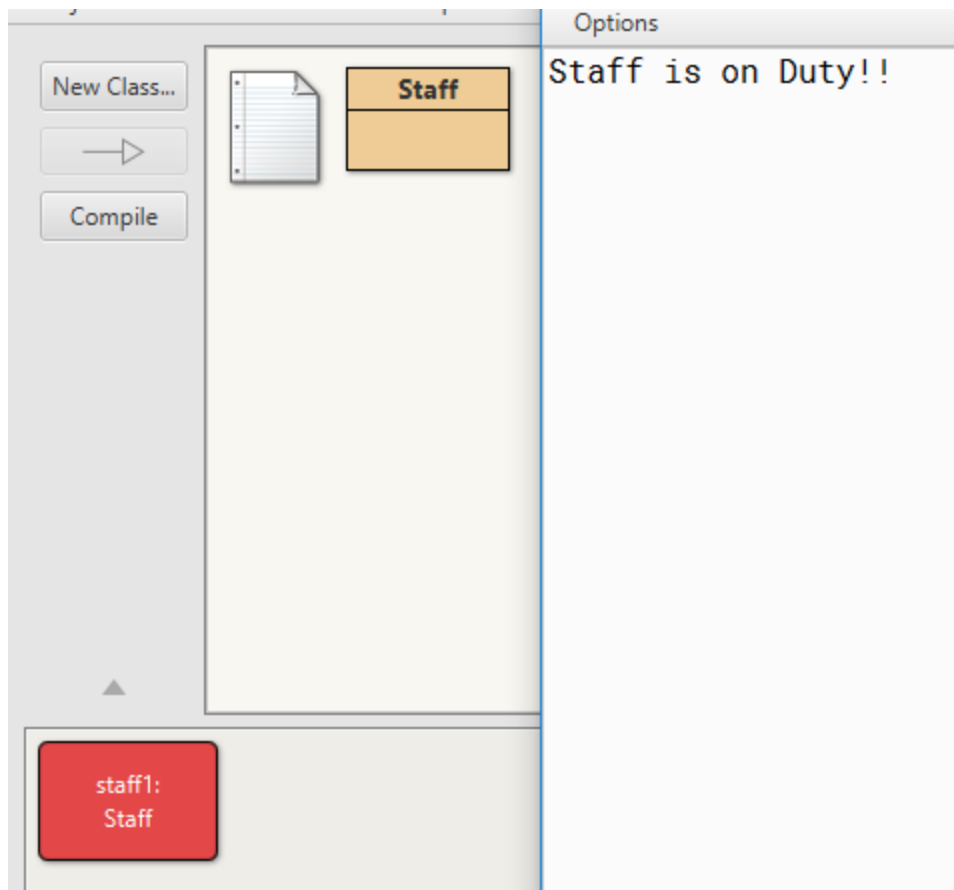
// Inherited class
class Non_Teaching_Staff extends Staff
{
    // This method overrides show() of Parent
    @Override
    void getDescription() { System.out.println("A Non Teaching Staff!!"); }
}

// Driver class
class Main
{
    public static void main(String[] args)
    {
        // If a Parent type reference refers
        // to a Parent object, then Parent's
        // show is called
        Staff obj1 = new Staff();
        obj1.getDescription();

        // If a Parent type reference refers
        // to a Child object Child's show()
        // is called. This is called RUN TIME
        // POLYMORPHISM.
        Teaching_Staff obj2 = new Teaching_Staff();
        obj2.getDescription();
        Non_Teaching_Staff obj3 = new Non_Teaching_Staff();
        obj3.getDescription();
    }
}

```

The Output:



5.

```
import java.io.*;
import ARI.*;
class clsmain
{
    public static void main(String args[])throws IOException
    {
        BufferedReader br= new BufferedReader(new InputStreamReader(System.in));
        int n,n1,a,b,c;
        clspackage r = new clspackage();
        System.out.println("Enter the number of sides : ");
        n=Integer.parseInt(br.readLine());
        if(n==1){
            System.out.println("Enter 1 for circle and 2 for square: ");
            n1=Integer.parseInt(br.readLine());
            if(n1==1){
                System.out.println("Enter the radius of the circle : ");
                a=Integer.parseInt(br.readLine());
                System.out.println("Area of the Circle = " +r.circle(a));
            }
            else if(n1==2){
                System.out.println("Enter the length of the square : ");
                a=Integer.parseInt(br.readLine());
                System.out.println("Area of the Square = " +r.square(a));
            }
        }
    }
}
```

```

if(n==2){
    System.out.println("Enter the Length of the Rectangle : ");
    a=Integer.parseInt(br.readLine());
    System.out.println("Enter the Width of the Rectangle : ");
    b=Integer.parseInt(br.readLine());
    System.out.println("Area of the Circle = " +r.rectangle(a,b));
}
if(n==3){
    System.out.println("Enter the first side of the Triangle : ");
    a=Integer.parseInt(br.readLine());
    System.out.println("Enter the second side of the Triangle : ");
    b=Integer.parseInt(br.readLine());
    System.out.println("Enter the third side of the Triangle : ");
    c=Integer.parseInt(br.readLine());
    System.out.println("Area of the Circle = " +r.triangle(a,b,c));
}
}
}
}

```

The Package creation:

```
package ARI;
```

```
import static java.lang.Math.sqrt;
```

```
public class clspackage {
```

```
    public double circle(int a)
```

```
{
```

```
    return(3.14*a*a);
```

```
}
```

```
    public double rectangle(int b, int c)
```

```
{
```

```
    return(b*c);
```

```
}
```

```
    public double square(int d)
```



```

{
return(d*d);
}

public double triangle(int e, int f, int g)
{
double s = (e+f+g)/3;
double m = sqrt(s*(s-e)*(s-f)*(s-g));
return(m);
}
}

```

The Output:

```

Enter the number of sides :
2
Enter the Length of the Rectangle :
40
Enter the Width of the Rectangle :
20
Area of the Circle = 800.0

```

```

1
Enter 1 for circle and 2 for square:
1
Enter the radius of the circle :
7
Area of the Circle = 153.86

```

```
Enter the number of sides :  
1  
Enter 1 for circle and 2 for square:  
2  
Enter the length of the square :  
4  
Area of the Square = 16.0
```

```
Enter the number of sides :  
3  
Enter the first side of the Triangle :  
12  
Enter the second side of the Triangle :  
13  
Enter the third side of the Triangle :  
14  
Area of the Circle = 63.166446789415026
```

6.

```
import java.io.*;  
class sub extends Dis, per  
{  
    int c;  
    String d = "";  
    void personal() throws IOException  
{  
    String a;  
    int b;  
    BufferedReader br=new BufferedReader(new InputStreamReader(System.in));  
    System.out.println("\n Enter Your Name:");  
    a=br.readLine();  
    System.out.println("Name = " +a);  
    System.out.println("\n Enter Your registration number:");  
    b=Integer.parseInt(br.readLine());  
    System.out.println("Reg_No = " +b);  
    System.out.println("\n Enter the number of subcription:");  
    c=Integer.parseInt(br.readLine());  
    System.out.println("Subcription Number= " +b);  
}
```

```

void subscription() throws IOException
{
    if(c>=12){
        d = "Yearly";
    }
    if(c<12 && c>=4){
        d = "Quarterly";
    }
    if(c<4){
        d = "Monthly";
    }
    System.out.println("Subscription offer = " +d);
}
}

class Mclass
{
    public static void main(String args[]) throws IOException
    {
        sub n = new sub();
        n.display();
        n.personal();
        n.subscription();
    }
}

```

```

import java.io.*;
abstract class Dis
{
    abstract void personal() throws IOException;
    public void display()
    {
        System.out.println("Subscribed Person!!");
    }
}

```

```
public interface per {  
    String name = "Om Ashish Mishra";  
    public void personal();  
    public void subscription();  
}
```

Subscribed Person!!

Enter Your Name:

Om Ashish Mishra

Name = Om Ashish Mishra

Enter Your registration number:

12

Reg\_No = 12

Enter the number of subscription:

8

Subscription Number= 8

Subscription offer = Quaterly