

**LAB MANUAL
FOR
OOP THROUGH JAVA**

PROGRAM 1

WRITE A SIMPLE PROGRAM IN JAVA

```
class manoj
{
    public static void main(String args[])
    {
        System.out.println("hello ");
        System.out.println("welcome to java world ");
        System.out.println("a very good morning ");
        manoj obj=new manoj();
        obj.add(2,7);
    }
    int result;

    void add(int x,int y)
    {
        result=x+y;
        System.out.println("result is "+result);
    }
}
```

OUTPUT

```
C:\>CD SUN
```

```
C:\Sun>cd appserver
```

```
C:\Sun\AppServer>cd jdk
```

```
C:\Sun\AppServer\jdk>cd bin
```

```
C:\Sun\AppServer\jdk\bin>javac manoj.java
```

```
C:\Sun\AppServer\jdk\bin> java manoj
```

```
hello
```

```
welcome to java world
```

```
a very good morning
```

```
result is 9
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 2

WRITE A PROGRAM TO FIND LARGEST OF THREE NUMBERS

```
class greater
{
    public static void main(String args[])
    {
        int a=98,b=87,c=99;
        if(a>b)
        {
            if(a>c)
            {
                System.out.println(" a is greater ");
            }
            else
            {
                System.out.println(" c is greater ");
            }
        }
        else
        {
            if(b>c)
            {
                System.out.println(" b is greater ");
            }
            else
            {
                System.out.println(" c is greater ");
            }
        }
    }
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac greater.java
```

```
C:\Sun\AppServer\jdk\bin>java greater  
c is greater
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 3

WRITE A PROGRAM TO PRINT FIBONACII SERIES USING LOOP

```
class fab
{
    public static void main(String args[])
    {
        int i=1;
        int j=1;
        int k=0;
        System.out.println("fibonacci series");
        while(i<=10)
        {
            System.out.println(+j);
            j=j+k;
            k=j-k;
            i++;
        }
    }
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac fab.java
```

```
C:\Sun\AppServer\jdk\bin>java fab  
fibonacci series
```

```
1  
1  
2  
3  
5  
8  
13  
21  
34  
55
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 4

WRITE A PROGRAM USING CLASSES AND OBJECT IN JAVA

```
public class data
{
    String id;
    String name;
    String age;

    public data()
    {
        id="8043";
        name="MANOJ";
        age="22";
    }
    public void displaydata()
    {
        System.out.println("my id is="+id);
        System.out.println("my name is="+name);
        System.out.println("my age is="+age);
    }
    public static void main(String args[])
    {
        data obj=new data();
        obj.displaydata();
    }
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac data.java
```

```
C:\Sun\AppServer\jdk\bin>java data  
my id is=8043  
my name is=MANOJ  
my age is=22
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 5

WRITE A PROGRAM TO IMPLEMENT INHERITANCE

```
class room
{
int l;
int b;
room(int x, int y)
    {
        l=x;
        b=y;
    }
int area()
    {
        return(l*b);
    }
}
class bedroom extends room
    {
        int h;
        bedroom(int x,int y, int z)
            {
                super(x,y);
                h=z;
            }
int volume()
    {
        return(l*b*h);
    }
}
class inheritance
{
public static void main(String args[])
    {
        bedroom room1=new bedroom(10,20,30);
        int area1=room1.area();
        int volume1=room1.volume();
        System.out.println("area1="+area1);
        System.out.println("volume1="+volume1);
    }
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac inheritance.java
```

```
C:\Sun\AppServer\jdk\bin>java inheritance  
area1=200  
volume1=6000
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 6

WRITE A PROGRAM TO IMPLEMENT MULTITHREADING

class A extends Thread

```
{
    public void run()
    {
        for(int i=1;i<=5;i++)
        {
            System.out.println("from thread A :i= "+i);
        }
    }
}
class B extends Thread
{
    public void run()
    {
        for(int i=1;i<=5;i++)
        {
            System.out.println("from thread B :i= "+i);
        }
    }
}
class C extends Thread
{
    public void run()
    {
        for(int i=1;i<=5;i++)
        {
            System.out.println("from thread C :i= "+i);
        }
    }
}
class threadtest
{
    public static void main(String args[])
    {
        new A().start();
        new B().start();

        new C().start();
    }
}
```

```
}  
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac threadtest.java
```

```
C:\Sun\AppServer\jdk\bin>java threadtest
```

```
from thread A :i= 1  
from thread A :i= 2  
from thread A :i= 3  
from thread A :i= 4  
from thread A :i= 5  
from thread B :i= 1  
from thread B :i= 2  
from thread B :i= 3  
from thread B :i= 4  
from thread B :i= 5  
from thread C :i= 1  
from thread C :i= 2  
from thread C :i= 3  
from thread C :i= 4  
from thread C :i= 5
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 7

WRITE A PROGRAM TO IMPLEMENT METHOD OVERRIDING

```
class sup
{
    int x;
    sup(int x)
    {
        this.x=x;
    }
    void display()
    {
        System.out.println("x= "+x);
    }
}

class sub extends sup
{
    int y;
    sub(int x,int y)
    {
        super(x);
        this.y=y;
    }
    void display()
    {
        System.out.println("x= "+x);
        System.out.println("y= "+y);
    }
}

class overloading
{
    public static void main(String args[])
    {
        sub s=new sub(10,20);
        s.display();
    }
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac overloading.java
```

```
C:\Sun\AppServer\jdk\bin>java overloading
```

```
x= 10
```

```
y= 20
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 8

WRITE A PROGRAM TO IMPLEMENT METHOD OVERLOADING

```
class funcload
{
    public static void main(String args[])
    {
        funcload obj=new funcload();
        obj.add(15,24);
        obj.add(2.3f,0.8f);
        obj.add(56,76.76f);
    }
    int x,y;
    float p,q,result;
    void add(int a,int b)
    {
        x=a;
        y=b;
        result=x+y;
        System.out.println("the result is:" + result);
    }
    void add(float a,float b)
    {
        p=a;
        q=b;
        result=p+q;
        Syst m.out.println("the result is:" + result);
    }
    void add(int a,float b)
    {
        x=a;
        p=b;
        result=x+p;
        System.out.println("the result is:" + result);
    }
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac funcload.java
```

```
C:\Sun\AppServer\jdk\bin>java funcload
```

```
the result is:39.0
```

```
the result is:3.1
```

```
the result is:132.76001
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 9

WRITE A PROGRAM TO IMPLEMENT PACKAGE

Creation of package

```
package pack;
public class rev
{
    public static void inita()
    {
        char str[]={'m','a','n','o','j'};
        int i=0;
        for(i=str.length-1;i>=0;i--)
        {
            System.out.print(str[i]);
        }
    }
}
```

Implementation of package

```
import pack.*;
class demo12
{
    public static void main(String args[])
    {
        rev ob=new rev();
        ob.inita();
    }
}
```

OUTPUT

```
C:\monu>md pack
C:\ monu>cd pack
C:\ monu \pack>edit rev.java
C:\ monu \pack>javac rev.java
C:\ monu \pack>cd..
C:\ monu \edit demo12.java
C:\ monu >javac demo12.java
C:\ monu >java demo12
jonam
C:\ monu>
```

PROGRAM 10
WRITE A PROGRAM TO IMPLEMENT INTERFACE

```
interface area
{
    final float p=3.14f;
    float compute(float x,float y);
}
class rectangle implements area
{
    public float compute(float x,float y)
    {
        return(x*y);
    }
}
class circle implements area
{
    public float compute(float x,float y)
    {
        return(p*x*x);
    }
}
class inter
{
    public static void main(String args[])
    {
        rectangle r=new rectangle();
        circle c=new circle();
        area a;
        a=r;
        System.out.println("\nArea of rectangle="
"+a.compute(10,20));
        a=c;
        System.out.println("\nArea of circle= "+a.compute(10,0));
    }
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac inter.java
```

```
C:\Sun\AppServer\jdk\bin>java inter
```

```
Area of rectangle= 200.0
```

```
Area of circle= 314.0
```

```
C:\Sun\AppServer\jdk\bin>
```

PROGRAM 11

WRITE A PROGRAM TO IMPLEMENT APPLETS IN JAVA

```
import java.awt.*;
import java.applet.*;
//<applet code="ma" height=750 width=350> </applet>
public class ma extends Applet implements Runnable
{

int i;
Thread t;
public void init()
{
try
{
    t= new Thread(this);
    t.start();}
catch(Exception e){}
}

public void run()
{

for(i=1;i<=20;i++){
try
{
    repaint();
    Thread.sleep(2000);}
catch(Exception e)
{}}
```

```
    }  
}  
public void paint(Graphics s)  
{  
    try  
    {  
        s.drawString("The value of i is "+i,60,50);  
    }  
    catch(Exception e){}  
}  
public static void main(String ar[])  
{  
  
    ma ob;  
  
}  
}
```

OUTPUT



The value of i is 21

Applet started.



PROGRAM 12

WRITE A PROGRAM TO IMPLEMENT EXCEPTION HANDLING IN JAVA

```
class handle
{
public static void main(String args[])
{
int a=10;
int b=5;
int c=5;
int x;
int y;
try
{
x=a/(b-c);
}
catch(ArithmeticException e)
{
System.out.println("Division by zero");
}
y=a/(b+c);
System.out.println("y="+y);
}
}
```

OUTPUT

```
C:\Sun\AppServer\jdk\bin>javac handle.java
```

```
C:\Sun\AppServer\jdk\bin>java handle  
Division by zero  
y=1
```

```
C:\Sun\AppServer\jdk\bin>
```