INDEX

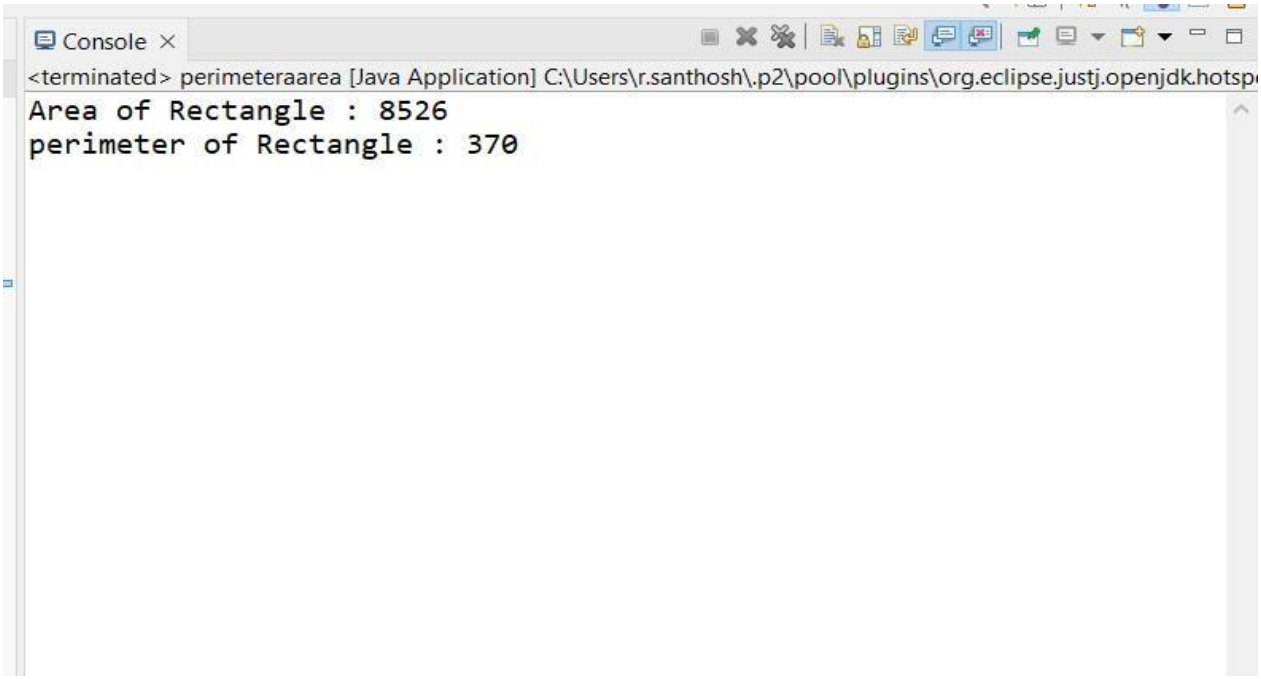
PROGRAM:-

//Ex:No:1. To find the area and perimeter of a Rectangle using BufferedReader class.

```
class cal1
{ int w,h; cal1(int w1, int
        h1)
        { w=w1;
        h=h1; } int
        area()
        {    int    a=w*h;
                return a;
        }
        int perimeter()
        { int peri=2*(w+h);
                  return peri;
        }
}

public class perimeterArea
{ public static void main(String args[])
        { cal1 obj=new cal1(87,98); int
                i=obj.area();
                System.out.println("Area of Rectangle : " + i);
                int j=obj.perimeter();
                System.out.println("perimeter of Rectangle: " + j); }
}
```

OUTPUT :

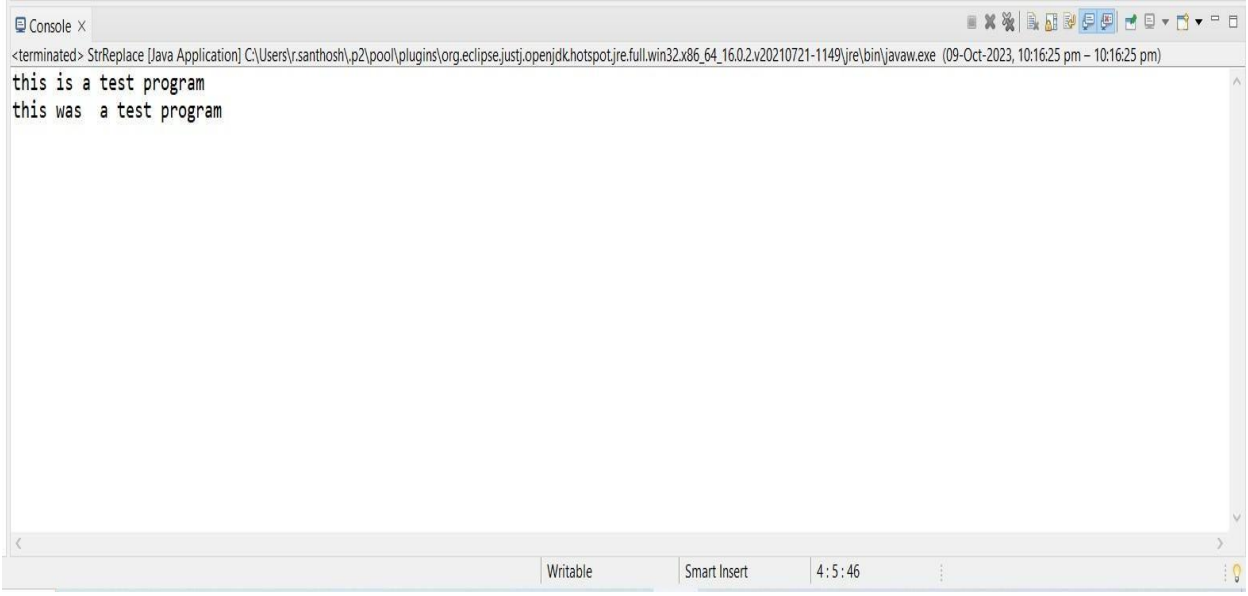

Console
<terminated> perimeteraarea [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotsp
Area of Rectangle : 8526
perimeter of Rectangle : 370

PROGRAM:

//Ex.No:2. Substring replacement

```
class StrReplace
{ public static void main(String args[])
   {
      String org="this is a test program";
      String search=" is";
      String sub=" was "; String
      result=" ";
      int i; do
      {
         System.out.println(org);
         i =org.indexOf(search); if(i!=-1)
         {
            result=org.replace(search,sub);
            org=result;
         }
      }
      while(i!=-1);
   }
}
```

OUTPUT :


Console
<terminated> StrReplace [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (09-Oct-2023, 10:16:25 pm – 10:16:25 pm)
this is a test program
this was a test program
Writable
Smart Insert
4 : 5 : 46

PROGRAM:

//Ex.No:3. sorting a given list of names in ascending order

```
import java.lang.*; import java.io.*; public class Sortng
{ public static void main(String args[]) throws IOException {
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        System.out.print("enter how many strings"); int
        n=Integer.parseInt(br.readLine());
        String x[]=new String[n];
        System.out.println("enter      "+n+"      strings");
        for(int i=0;i<n;i++)
        {
                x[i]=br.readLine();
        }
        String s=new String();
        for(int i=0;i<n;i++)
        { for(int j=0;j<n;j++)
                { if(x[i].compareTo(x[j])<6)
                        {
                                s=x[i];
`                               x[i]=x[j];
                                x[j]=s;
                        }
                }
        }
        System.out.println("string   in   alphabetical   order   are");
        for(int i=0;i<n;i++)
        {
                System.out.println(x[i]);
        }
        }
}
```

OUTPUT :

```
Console ×
<terminated> StrReplace [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openj
enter how many strings
3
enter 3 strings
tiger
dog
cat
string in alphabetical order are
cat
dog
tiger
```

PROGRAM:

```
//Ex.No:4. To create nested class import java.io.*; class outer
{ int x; outer() { x=10;}
        void test()
        { class inner
            { int y; inner()
                { y=2;
                    } void display()
                {
                                                System.out.println("y value is "+y);
                    }
                }
            System.out.println("x value is "+ x);
            inner I=new inner();
            I.display();

        }
} public class nested
{ public static void main(String args[])
   { outer o=new outer();
        o.test();
        outer.inner i=outer.new inner();
        i.test();
   }
}
```

OUTPUT :

```
Console ×
<terminated> clas1 [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe  (12-Oct-2023, 7:56:39 pm – 7:56:41 pm)
x value is 10
y value is 2
```

PROGRAM:

//Ex.No:5. To pass object as parameter

```
class test
{ int a; int b; test ( int i, int j)
    {
       a=i;
       b=j; } boolean equals(test o)
    { if(o.a==a && o.b==b) return true; else
    returnfalse;
    }
} class passob
{ public static void main(String args[])
    {   test   ob1=new   test   (10,22);   test   ob2=new
       test(100,22); test ob3=new test(-1,-1);
                                    System.out.println("ob1==ob2:"+ob1.equals(ob2));
                                    System.out.println("ob1==ob3:"+ob3.equals(ob3));
       }
}
```

OUTPUT :

```
Console ×
<terminated> passob [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64
ob1==ob2:false
ob1==ob3:true
```

PROGRAM:-

//Ex.No:6. To display arithmetic operations using inheritance.

```
Class cal
{
   int a,b; void sum(int x,int y)
   { a=x+y;
      System.out.println("Sum of 2 numbers : " +a);
   } void sub(int x,int y)
   { b=x-y;
      System.out.println("Substraction of 2 numbers : " +a);
   }
}
class Mcal extends cal
{ int c;
   void mul(int x,int y)
   { c=x*y;
      System.out.println("Multiplication of two numbers : "+b);
   }
   public static void main(String args[])
   {
      Mcal d= new Mcal(); d.sum(10,20);
      d.sub(10,20);
      d.mul(10,20);
   }
}
```

OUTPUT :

```
Console ×
<terminated> Mcal [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32
Sum of 2 numbers : 30
Substraction of 2 numbers :-10
Multiplication of two numbers : 200
```

PROGRAM:

//Ex.No:7. To compare numbers using method overloading.

```
import java.io.*; class methodOverloading
        {
            int x,y,z;
            public void maxi (int a,int b,int c)
            { x=a; y=b; z=c;
                                        if(x>y & x>z)
                        System.out.println("x is maximum"); if(y>x & y>z)
                        System.out.println(" y is maximum"); else
                        System.out.println("z is maximum");
            } void maxi(int a,int b)
    { x=a; y=b; if(x>y)
        {
        System.out.println("x is maximum");
        }
        else
    {
         System.out.println("y is maximum");

    } }} public class sample
 { public static void main(String args[])
    { methodOverloading m;
       m=newmethodOverloading();
       m.maxi(10,20,30);
      m.maxi(55,86);

    }}
```

OUTPUT :

```
Console ×
<terminated> sample (3) [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.w
z is maximum
y is maximum
```

PROGRAM:

//Ex.NO:8. To override a method with super keyword

```
class w1
{ int p,q; w1(int p,int q)
        {
                this.p=p;
                this.q=q;}
        void show()
        {
                System.out.println("Value of p is : " +p);
                System.out.println("Value of q is : " +q);
        }
} class x1 extends w1
{
        int r,s;
        x1(int p, int q, int r, int s)
        {
        super(p,q); this.r=r;
        this.s=s;
        } void show()
        {
                Super.show();
                System.out.println("Value of r is : " +r);
                System.out.println("Value of s is : " +s);
        }
} classw1x1demo
{ public static void main(String args[])
        { x1 a=new x1(10,20,30,40); a.show();
        }
}
```

OUTPUT :

```
Console ×
<terminated> w1x1demo [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.ope
Value of p is : 10
Value of q is : 20
Value of r is : 30
Value of s is :  40
```

PROGRAM:

```
//Ex.No:9. simple interest program using the interface
interface deposit
{ void interest(double principal, int year, double rate);
}

class simple implements deposit
{ public void interest(double p, int n, double r)
        { double intr, total;
                intr=p*n*r/100.
                0; total=p+intr;
                System.out.println("\nPrincipal amount: Rs. "+p);
                System.out.println("No. of years: "+n);
                System.out.println("Interest rate: "+r);
                System.out.println("Interest amount:Rs. "+intr);
System.out.println("Total amount after "+n+ "years in simple interest: Rs.
        "+total); }
}

class interestcal
{ public static void main(String args[])
        {    simple    sim=new    simple();
                sim.interest(12500.0,        4,
                12.5);
        }
}
```

OUTPUT :

```
Console ×
<terminated> interestcal [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.fu

Principal amount: Rs. 12500.0
No. of years: 4
Interest rate: 12.5
Interest amount:Rs. 6250.0
Total amount after 4years in simple interest: Rs. 18750.0
```

PROGRAM:

```
//Ex.No:10. mark statement of a student using the package package p1;
import

java.io.*; public class stud
{ public int rno; public String name; public
        int m1, m2; public int total; public
        void input()
        { rno= 131;
                System.out.println("Roll number: "+rno); name= "sudha";
                System.out.println("Name: "+name); m1= 98;
                System.out.println("Mark1: "+m1); m2= 99;
                System.out.println("Mark2: "+m2);
        } public void process()
        { total= m1 + m2;
                System.out.println("Total: "+total);
        }
}   package   p2;   import   java.io.*;
import p1.*; public class details
{ public String game= "football"; public void display()
        {
                System.out.println("Game: "+game);
        }
}
package p3; import java.io.*; import p1.*; import p2.*;
class multi
{ public static void main(String args[])
        { stud s= new stud(); detailsd=new details(); s.input();
                s.process();
                d.display();
        }
}
```

OUTPUT :

```
Console ×
<terminated> multi [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.j
Roll number: 131
Name: sudha
Mark1: 98
Mark2: 99
Total: 197
Game: football
```

PROGRAM:

// Ex.No:11. creating Threads

```
class mt implements Runnable
{
Thread t; String s; int r; mt(String ss, int tt)
{ t=new Thread(this, ss);
        s=ss; r=tt;
        t.start();
} public void run()
{
        for(; ;)
        {
                System.out.println(s); try
                {
                                        Thread.sleep(r);
                } catch(Exception e)
                { }
        }}} class ab2
{ public static void main(String ar[])
        { mt t1=new mt("good morning",1000); mt t2=new mt("hello",2000); mt
                t3=new mt("welcome",3000);
        }}
```

OUTPUT :

```
Console ×
ab2 [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149
good morning
welcome
hello
good morning
good morning
hello
good morning
welcome
good morning
hello
good morning
hello
good morning
welcome
good morning
hello
good morning
welcome
good morning
hello
good morning
good morning
hello
welcome
good morning
good morning
hello
good morning
welcome
good morning
hello
good morning
```

PROGRAM:

//Ex.No:12. User Defined Error Handling

```
class dividerdemo {
public static void main(String args[])
{
        try
        {
                int a=Integer.parseInt(args[0]); int b=Integer.parseInt(args[1]);
                System.out.println("Quotient: "+a/b);
        }
        catch(ArithmeticException e)
        {
                System.out.println("Error in denominator");
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
                System.out.println("Error in index value");
        }
        catch(NumberFormatException n)
        {
                System.out.println("Data type error.");
        }
        finally
        {
                System.out.println("Finally block.");
        }
}
}
```

OUTPUT :

```
Console ×
<terminated> cal1 [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_
Error in index value
Finally block.
```

PROGRAM:

//*Ex.No:13. ArrayIndexOutOf Bounds Exception andNumberFormatException*/

```
 import java.io.*; class catchexcept
{ public static void main(String args[])
        {
        int arr[]= {100, 200, 300, 400, 500};
        System.out.println("Enter a number as array index and find out its value.");
        System.out.println("Enter end to come out of the program."); try
        {
                String     line;
                int x;
BufferedReader  br=new  BufferedReader(new  InputStreamReader(System.in));
                while((line=br.readLine())!=null)
                {
                        if(line.equals("end"))
                        break;
                else
                {
                try
                {
                        x=Integer.parseInt(line);
                        System.out.println("valid element and it is: "+arr[x]);
                }
                catch(ArrayIndexOutOfBoundsException e)
                {
                        System.out.println("Invalid Element");
                        System.out.println("Exception Guarenteed: "+e);
                }
                catch(NumberFormatException n)
                {
                        System.out.println("Sorry no characters.");
                        System.out.println("Generated Exception: "+n);
                }
                }//end of else
                }//end of while
```

```
        }
        catch(IOException i)
{}}//end of main}
```

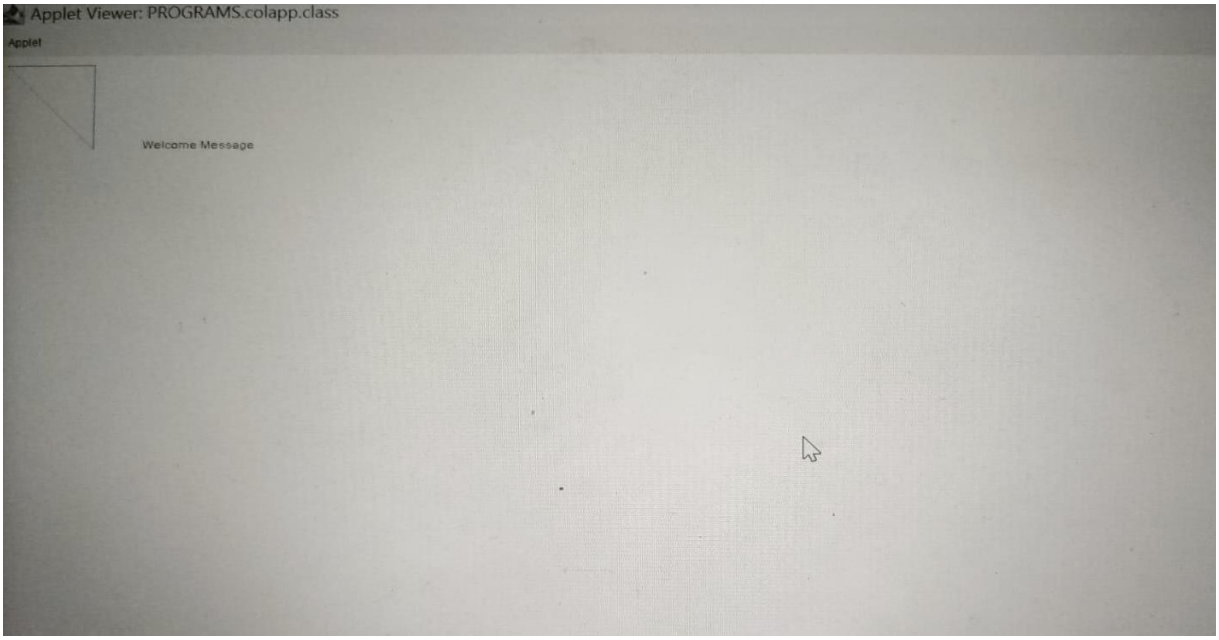
OUTPUT :

```
Console ×
cal1 [Java Application] C:\Users\r.santhosh\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_1
Enter a number as array index and find out its value.
Enter end to come out of the program.
4
valid element and it is: 500
3
valid element and it is: 400
```

PROGRAM:-

```
// Ex.No:14. Applet that displays a simple message.
import java.awt.*; import java.applet.*;
/*<applet code="colapp" width=200 height=200>
</applet>*/ public class colapp extends Applet
{ public void paint(Graphics g)
{
String s="Welcome Message"; g.drawString(s,150,100);
g.setColor(Color.red);
g.drawLine(10,10,100,10);
g.setColor(Color.blue);
g.drawLine(100,10,100,100);
g.setColor(Color.green);
g.drawLine(10,10,100,100);
}
}
```

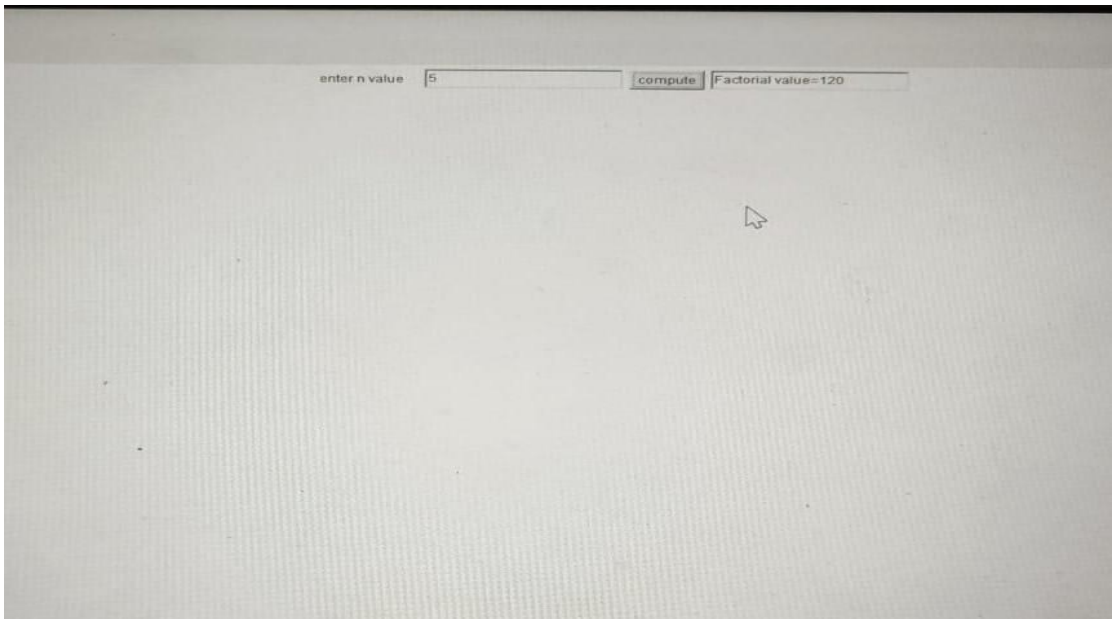
OUTPUT :


Applet Viewer: PROGRAMS.colapp.class
Applet
Welcome Message

PROGRAM:

```
//* Ex.No:15. Factorial value using Applet */ import java.awt.*;
import java.awt.event.*; import java.applet.*; public class fact extends
Applet implements ActionListener
{ int n; TextFieldt1, t2;
Label l1; Button b; public
void init()
{ l1=new Label("enter n value",Label.LEFT); t1=new
        TextField(20); b=new Button("compute"); t2=new
        TextField(20); add(l1); add(t1); add(b); add(t2);
        b.addActionListener(this);
}
public void actionPerformed(ActionEvent ae)
{
        String s1=t1.getText(); int f=1; int
        n=Integer.parseInt(s1);                for(int
        i=1;i<=n;i++) f=f*i;
        String s="Factorial value="+f; t2.setText(s);
        }
}
/*<applet code="fact" width=300 height=300></applet>*/
```

OUTPUT :



PROGRAM:

//* Ex.No:16. Draw lines, rectangles and ovals */

```
import  java.awt.*;  import
java.applet.Applet;
public class DrawShapes extends Applet
{ public void paint(Graphics g)
        {
                g.drawLine(40,30,200,30);
                g.drawRect(40,60,70,40);
                g.fillRect(140,60,70,40);
                g.drawOval(40,120,70,40);
                g.fillOval(140,120,70,40);
        }
}
/*<applet code="DrawShapes.class" height=500 width=500></applet>*/
```

OUTPUT :