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Experiment - 1

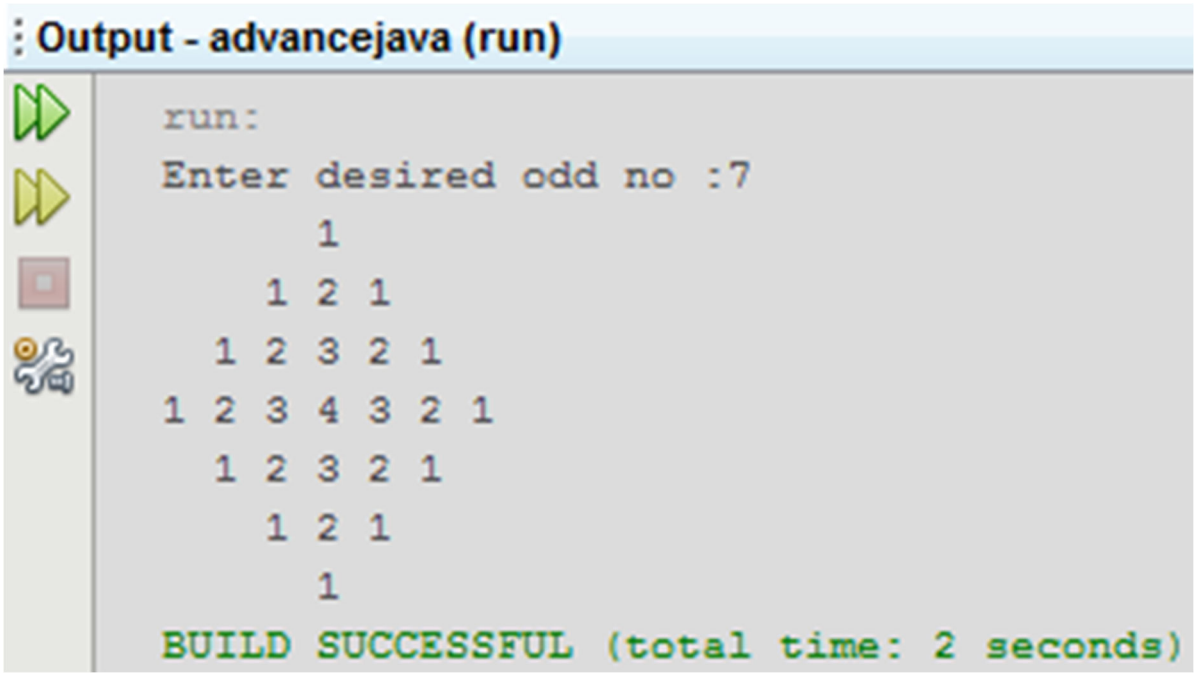
Aim: - Write a program to print the following pattern.

```
        1
    1   2   1
1   2   3   2   1
    1   2   1
        1
```

```
package advancejava;
import java.util.Scanner;
public class exp1
{
   public static void main(String []args)
   {
      System.out.print("Enter desired odd no :");
      Scanner data=new Scanner(System.in);
      int i,j,k,midline,lineno=data.nextInt();
      if(lineno%2==0)
      {   System.out.print("No is not an odd no"); return; }
      midline=lineno/2+1;
      for(i=1;i<=midline;i++)
      {
         for(k=midline-i;k>0;--k)
            System.out.print("  ");
         for(k=1;k<=i;++k)
            System.out.print(k+" ");
         for(k=i-1;k>=1;--k)
            System.out.print(k+" ");
```

```
            System.out.print("\n");
        }
        for(j=midline+1;j<=lineno;++j)
        {
            for(k=1;k<=j-midline;++k)
                System.out.print("  ");
            for(k=1;k<=lineno-j+1;++k)
                System.out.print(k+" ");
            for(k=lineno-j;k>=1;--k)
                System.out.print(k+" ");
            System.out.print("\n");
        }
    }
}
```

Output

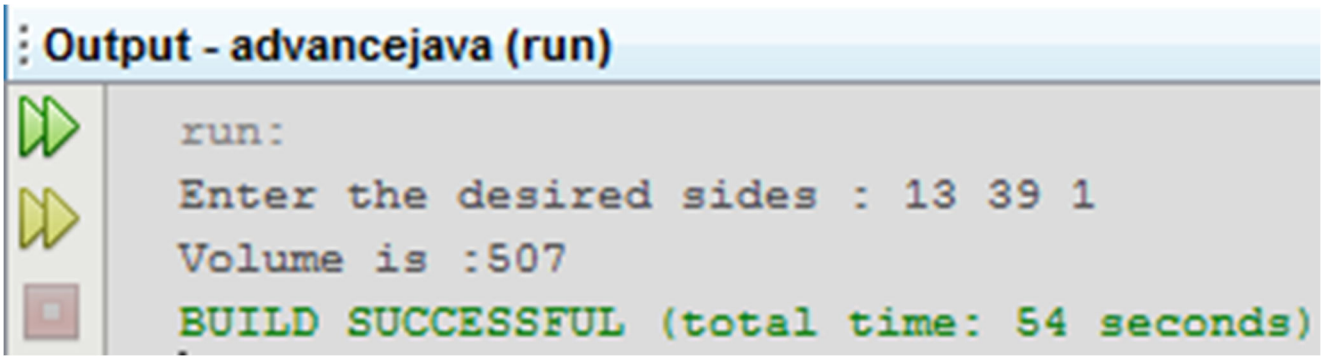


Experiment - 2

Aim: - Write a program to implement a class 'Box'. Make three instance variables of the class namely: height, width and depth. Implement a function to calculate volume. Show the functionality of 'this' keyword in the program. Also make use of overloaded constructors.

```
package advancejava;
import java.util.Scanner;
public class exp2{
   int height, width, depth;
   exp2(){}
   exp2(int height, int width, int depth) {
      this.height = height;
      this.width = width;
      this. depth = depth;
   }int boxvolume(){
      int volume=height*width*depth;
      return volume;
   }public static void main(String []args){
      Scanner data=new Scanner(System.in);
      System.out.print("Enter the desired sides : ");
      exp2 b=new exp2(data.nextInt(),data.nextInt(),data.nextInt());
      System.out.println("Volume is :"+b.boxvolume());
   }
}
```

Output



Experiment - 3

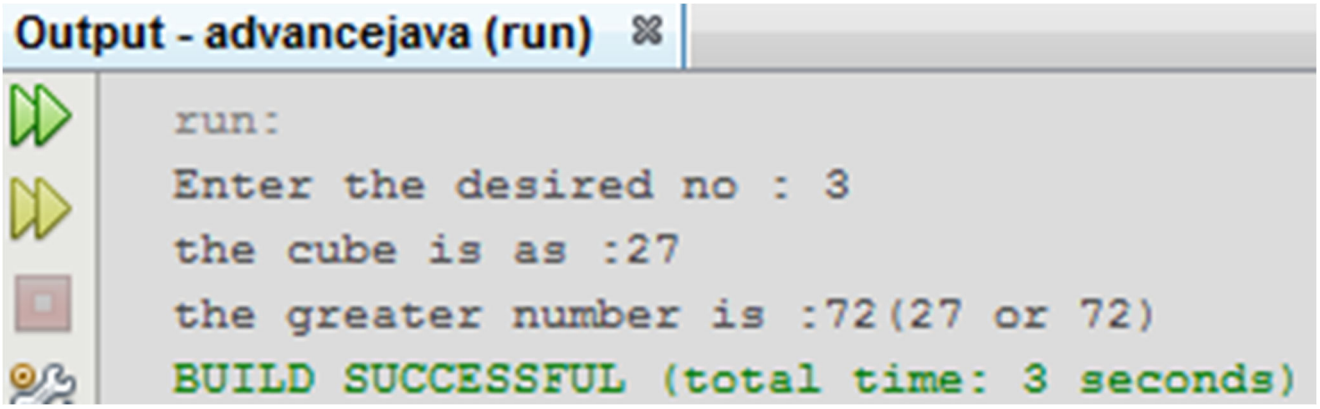
Aim: - Write a program to implement two functions. One function will calculate the cube of a number. Another function will find out the larger number between the original number and its reverse. Both the functions must return an object of class type.

```
package advancejava;
import java.util.Scanner;
public class exp3
{
   int myno, cubeno,secondno=0;
   String str;
   exp3 nocube(exp3 obj)
   {
      obj.cubeno = obj.myno*obj.myno*obj.myno;
      return obj;
   }
   exp3 greatereverse(exp3 obj)
   {
      int temp=obj.cubeno;

      while(temp>0)
      {
         secondno=secondno*10+(temp%10);
         temp/=10;
      }
      if(obj.cubeno>secondno)
         obj.str = "the greater number is :" + obj.cubeno;
      else
         obj.str= "the greater number is :" + secondno;
      return obj;
   }
   public static void main(String []args)
```

```
    {
        exp3 obj=new exp3();
        System.out.print("Enter the desired no : ");
        Scanner data=new Scanner(System.in);
        obj.myno=data.nextInt();
        exp3 obj1 = obj.nocube(obj);
        exp3 obj2 =obj.greatereverse(obj);
        System.out.println("the cube is as :"+obj1.cubeno);
        System.out.println(obj2.str+"("+obj1.cubeno+" or "+obj.secondno+")");
    }
}
```

Output



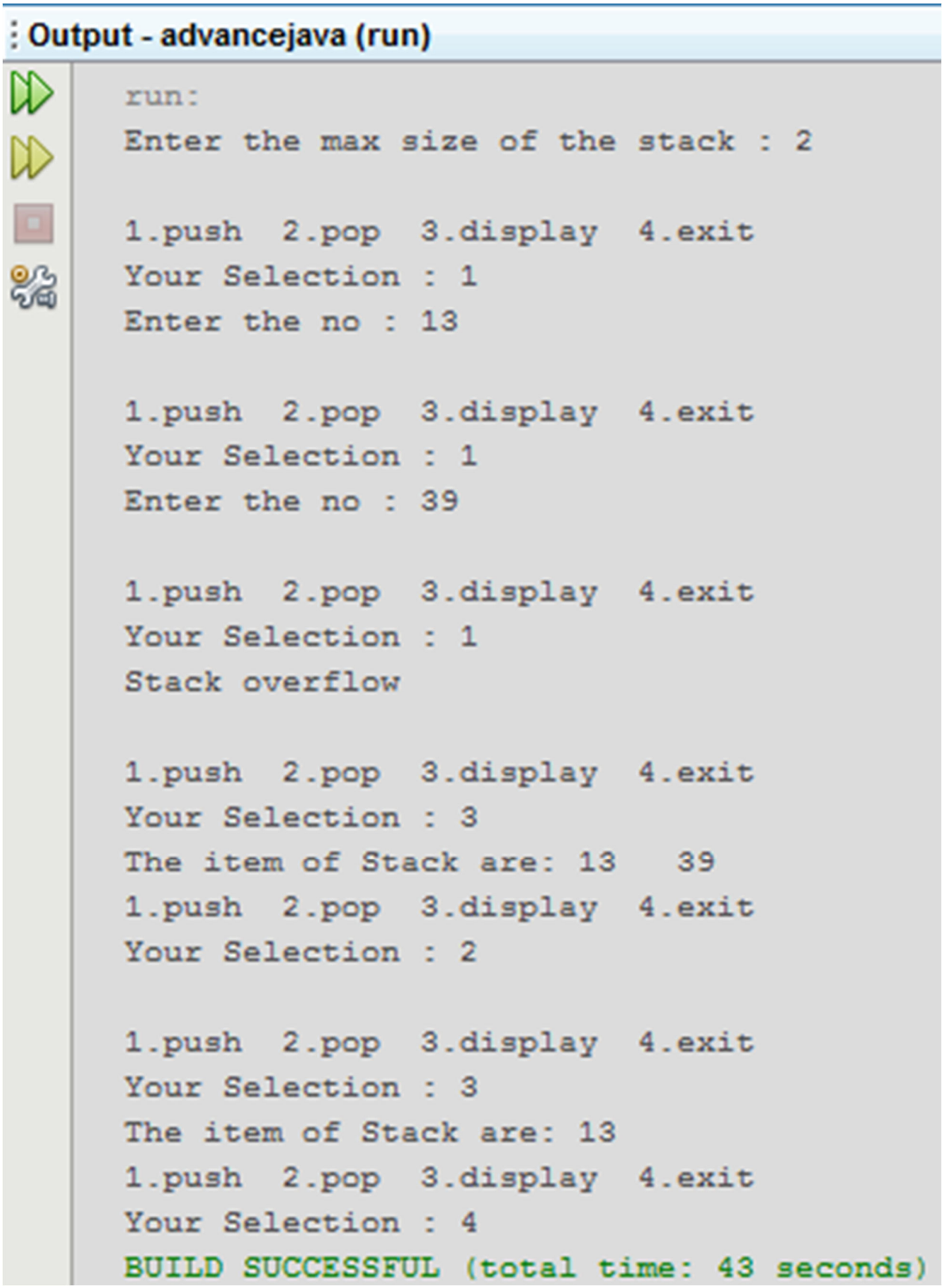
Experiment - 4

Aim: - Write a program to implement the functionality of a stack. The stack size has to be entered from command-line.

```
package advancejava;
import java.util.*;
public class exp4{
  static int maxSize,top;
  static long[] stackArray;
  public exp4(int s){
    maxSize = s;
    stackArray = new long[maxSize];
    top = -1;
  }
  public void push(long j){
     stackArray[++top] = j;
  }
  public long pop(){
     return stackArray[top--];
  }
  public static void main(String[] args){
     System.out.print("Enter the max size of the stack : ");
     Scanner data=new Scanner(System.in);
     int stackSize=data.nextInt();
     exp4 theStack = new exp4(stackSize);
     int ch,no,i;
     while(true){
        System.out.print("\n1.push  2.pop  3.display  4.exit\nYour Selection : ");
        ch=data.nextInt();
        switch(ch){
           case 1:
              if(top<maxSize-1){
                 System.out.print("Enter the no : ");
```

```
                no=data.nextInt();
                theStack.push(no);
              }
              else
                System.out.println("Stack overflow");
              break;
            case 2:
              if(top<0)
                System.out.print("Stack underflow");
              else
                theStack.pop();
              break;
            case 3:
              System.out.print("The item of Stack are: ");
              for(i=0;i<=top;i++)
                System.out.print(stackArray[i]+"   ");
              break;
            case 4:
              System.exit(0);
          }
        }
    }
}
```

Output


Output - advancejava (run)
run:
Enter the max size of the stack : 2
1.push 2.pop 3.display 4.exit
Your Selection : 1
Enter the no : 13
1.push 2.pop 3.display 4.exit
Your Selection : 1
Enter the no : 39
1.push 2.pop 3.display 4.exit
Your Selection : 1
Stack overflow
1.push 2.pop 3.display 4.exit
Your Selection : 3
The item of Stack are: 13 39
1.push 2.pop 3.display 4.exit
Your Selection : 2
1.push 2.pop 3.display 4.exit
Your Selection : 3
The item of Stack are: 13
1.push 2.pop 3.display 4.exit
Your Selection : 4
BUILD SUCCESSFUL (total time: 43 seconds)

Experiment - 5

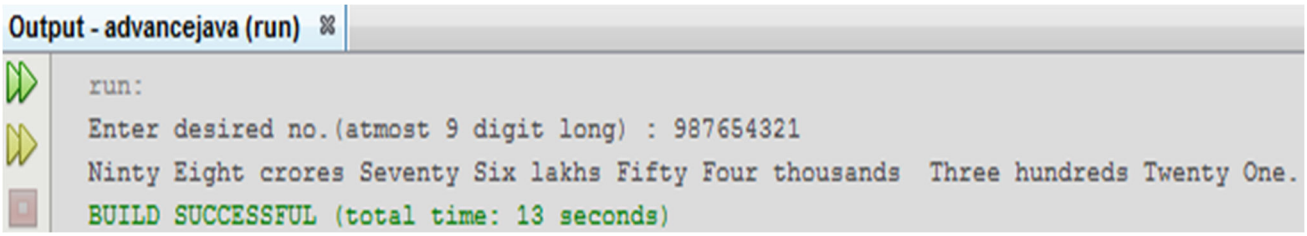
Aim: - Write a program to convert given number to words. Number should be at least 5 digits long.

```
package advancejava;
import java.util.Scanner;
public class exp5{
   static String inttostring(int tempno){
      int second=tempno%10;   int first=tempno/10;    String mystring="";
      switch(first){
         case 0: mystring="";        break;
         case 2: mystring="Twenty";  break;
         case 3: mystring="Thirty";  break;
         case 4: mystring="Forty";   break;
         case 5: mystring="Fifty";   break;
         case 6: mystring="Sixty";   break;
         case 7: mystring="Seventy"; break;
         case 8: mystring="Eighty";  break;
         case 9: mystring="Ninty";   break;
         default:
            switch(second){
               case 0:mystring="Ten";      break;
               case 1:mystring="Eleven";   break;
               case 2:mystring="Twelve";   break;
               case 3:mystring="Thirteen"; break;
               case 4:mystring="Forteen";  break;
               case 5:mystring="Fifteen";  break;
               case 6:mystring="Sixteen";  break;
               case 7:mystring="Seventeen";break;
               case 8:mystring="Eighteen"; break;
               case 9:mystring="Ninteen";  break;
            }
      }
```

```
        if(first!=1){
            switch(second){
                case 0:mystring+="";        break;
                case 1:mystring+=" One";     break;
                case 2:mystring+=" Two";     break;
                case 3:mystring+=" Three";   break;
                case 4:mystring+=" Four";    break;
                case 5:mystring+=" Five";    break;
                case 6:mystring+=" Six";     break;
                case 7:mystring+=" Seven";   break;
                case 8:mystring+=" Eight";   break;
                case 9:mystring+=" Nine";    break;
            }
        }
        return mystring;
    }
    public static void main(String []args){
        Scanner data=new Scanner(System.in);    String stringtoprint="";
        System.out.print("Enter desired no.(atmost 9 digit long) : ");
        long myno=data.nextLong();
        int tens=(int) (myno%100);      myno/=100;
        int hundreds=(int) (myno%10);   myno/=10;
        int thousands=(int) (myno%100); myno/=100;
        int lakhs=(int) (myno%100);     myno/=100;
        int crores=(int) (myno);
        if(crores!=0){
            stringtoprint+=inttostring(crores);
            stringtoprint+=" crores ";
        }if(lakhs!=0){
            stringtoprint+=inttostring(lakhs);
            stringtoprint+=" lakhs ";
        }if(thousands!=0){
```

```
            stringtoprint+=inttostring(thousands);
            stringtoprint+=" thousands ";
        }if(hundreds!=0){
            stringtoprint+=inttostring(hundreds);
            stringtoprint+=" hundreds ";
        }if(tens!=0){
            stringtoprint+=inttostring(tens);
            stringtoprint+=".";
        }System.out.println(stringtoprint);
    }
}
```

Output

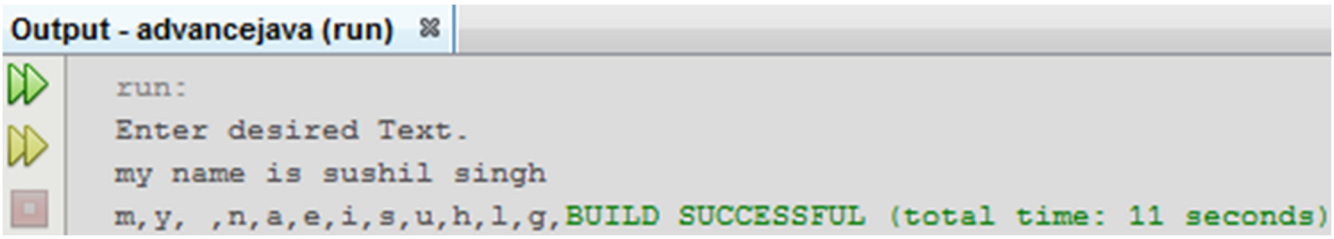


Experiment - 6

Aim: - Write a program, which will read a text and count all occurrences of a particular character.

```
package advancejava;
import java.util.Scanner;
public class exp6{
   public static void main(String []args){
      Scanner data=new Scanner(System.in);
      System.out.print("Enter desired Text.\n");
      String texttotest=data.nextLine();
      String newstring=""; int flag=1;
      for(int i=0;i<texttotest.length();i++){
         for(int j=0;j<newstring.length();j++){
            Character  t1=texttotest.charAt(i),t2=newstring.charAt(j);
            int res=t1.compareTo(t2);
            if(res==0){
               flag=0; break;
            }else
               flag=1;
         }if(flag==1)
            newstring+=texttotest.charAt(i);
      }for(int j=0;j<newstring.length();j++)
         System.out.print(newstring.charAt(j)+",");
   }
}
```

Output



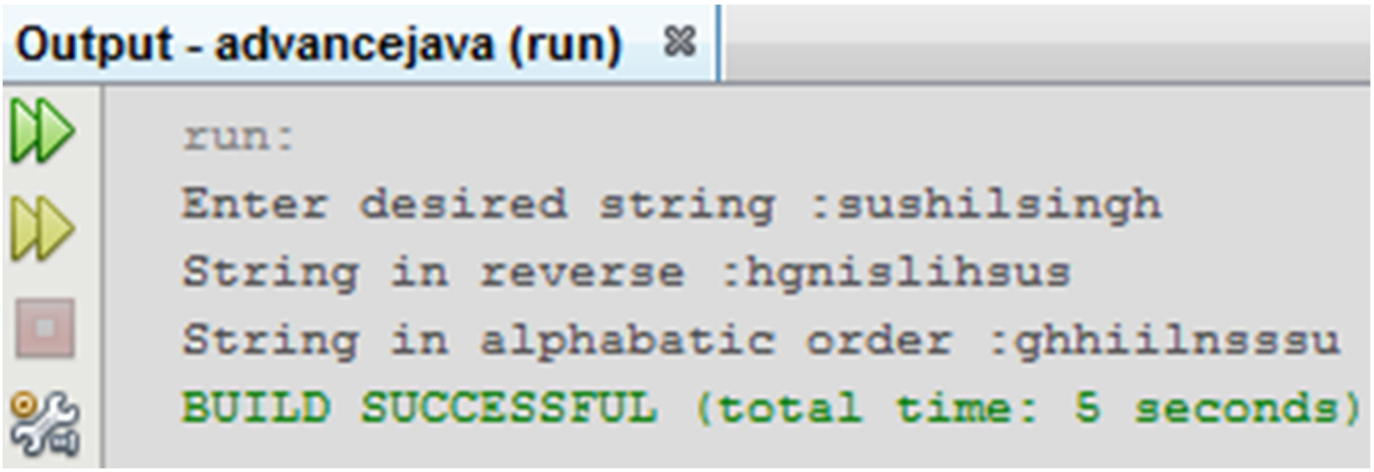
Experiment - 7

Aim: - Write a program, which will read a string and print its reverse. The program should also rewrite the string in alphabetical order.

```
package advancejava;
import java.util.Arrays;
import java.util.Scanner;
public class exp7
{
   public static void main(String []args)
   {
      Scanner data=new Scanner(System.in);
      System.out.print("Enter desired string :");
      String instring=data.next();
      StringBuilder mystring1=new StringBuilder();
      mystring1.append(instring);
      mystring1=mystring1.reverse();
      System.out.print("String in reverse :");
      for(int i=0;i<mystring1.length();i++)
         System.out.print(mystring1.charAt(i));
      Character[] chars=new Character[instring.length()];
      for(int i=0;i<chars.length;i++)
         chars[i]=instring.charAt(i);
      Arrays.sort(chars, (Character c1, Character c2) -> {
         int cmp=Character.compare(
               Character.toLowerCase(c1.charValue()),
               Character.toLowerCase(c2.charValue())
         );
         if(cmp!=0)
            return cmp;
         return Character.compare(c1, c2);
      });
      StringBuilder mystring2=new StringBuilder(chars.length);
```

```
        for(char c:chars)
            mystring2.append(c);
        System.out.print("\nString in alphabatic order :");
        for(int i=0;i<mystring1.length();i++)
            System.out.print(mystring2.charAt(i));
    }
}
```

Output

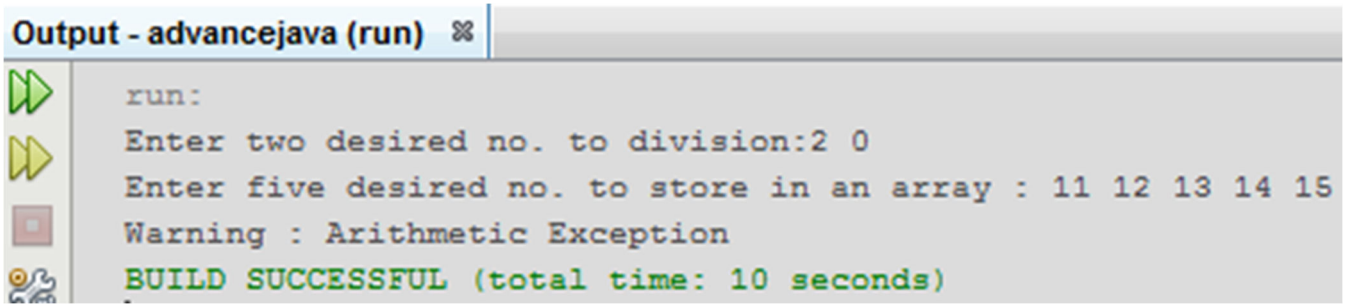


Experiment - 8

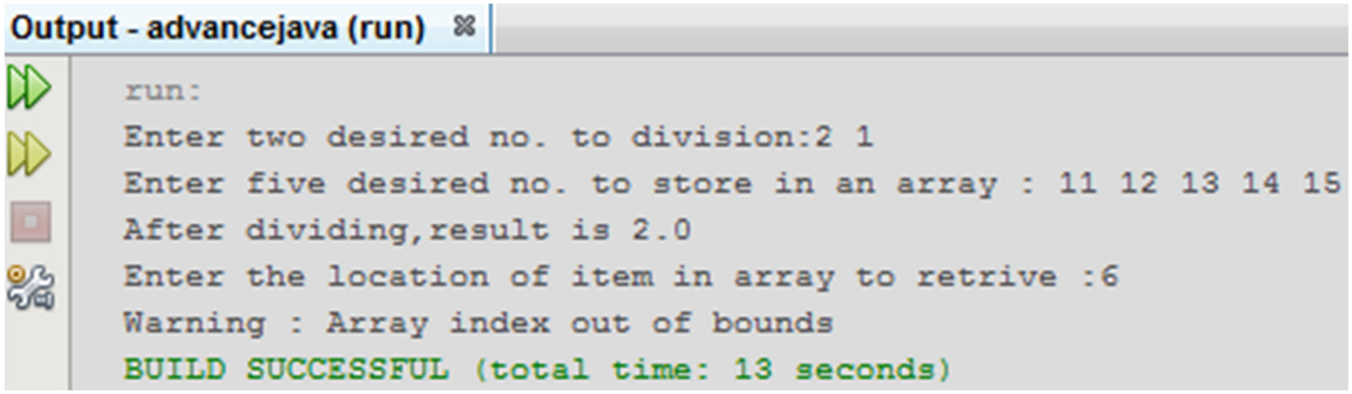
Aim: - Write a program to create a try block that is likely to generate three type of exception and then incorporate necessary catch blocks to catch and handle them appropriately.

```
package advancejava;
import java.io.*;
import java.util.*;
public class exp8{
   public static void main(String []args){
      Scanner data=new Scanner(System.in);
      System.out.print("Please enter two no. to division:");
      int A=data.nextInt();       int B=data.nextInt();
      int[] myarray=new int[5];
      System.out.print("Please enter five no to store in an array : ");
      for(int i=0;i<5;i++)
         myarray[i]=data.nextInt();
      try{
         float C=(float)A/B;
         System.out.print("After dividing,result is "+C);
         System.out.print("\nEnter the location of item in array to retrive :");
         int D=data.nextInt();
         System.out.println("The item is : "+myarray[D-1]);
         File file=new File("D:\\Important document\\file.txt");
         FileReader fr=new FileReader(file);
      }catch(ArithmeticException ex){
         System.out.print("Warning : Arithmetic Exception");
      }catch(ArrayIndexOutOfBoundsException ex){
         System.out.print("Warning : Array index out of bounds");
      }catch (FileNotFoundException ex){
         System.out.print("Warning : File not found");
      }
   }
}
```

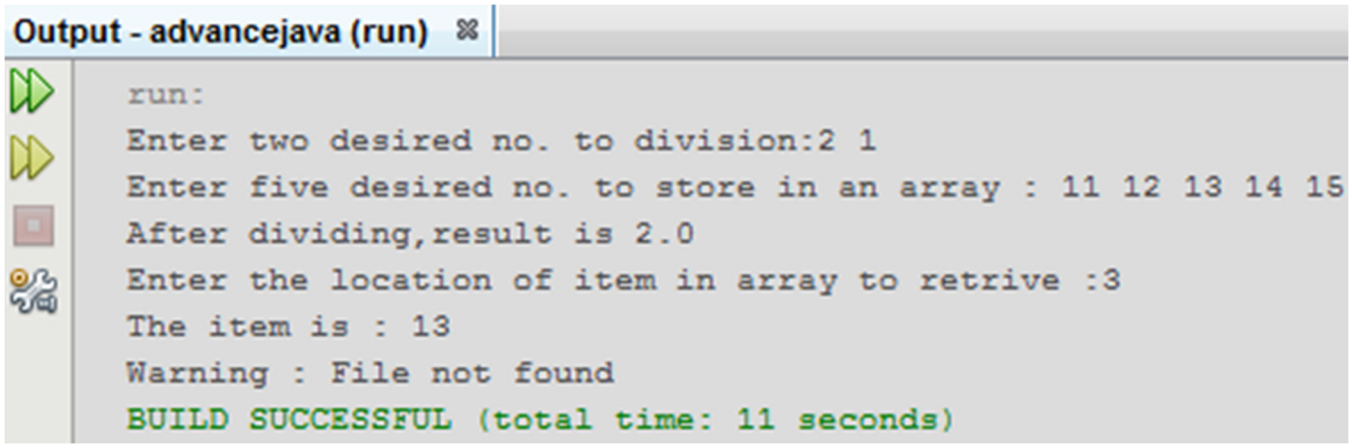
Output



Pic 8.1 :-Arithmetic exception handling.



Pic 8.2 :-Array index out of bound exception handling.



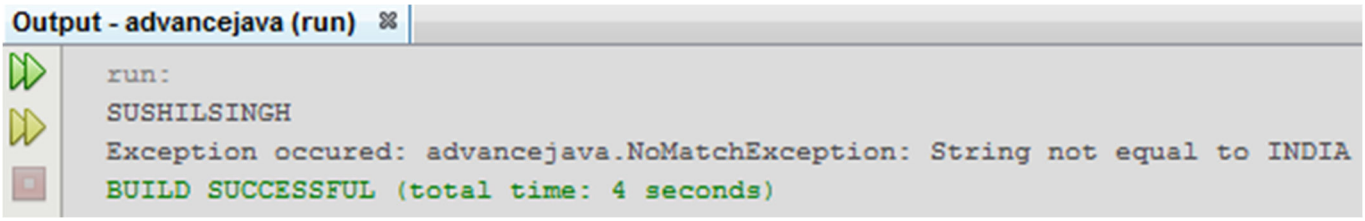
Pic 8.3 :-File exception handling.

Experiment - 9

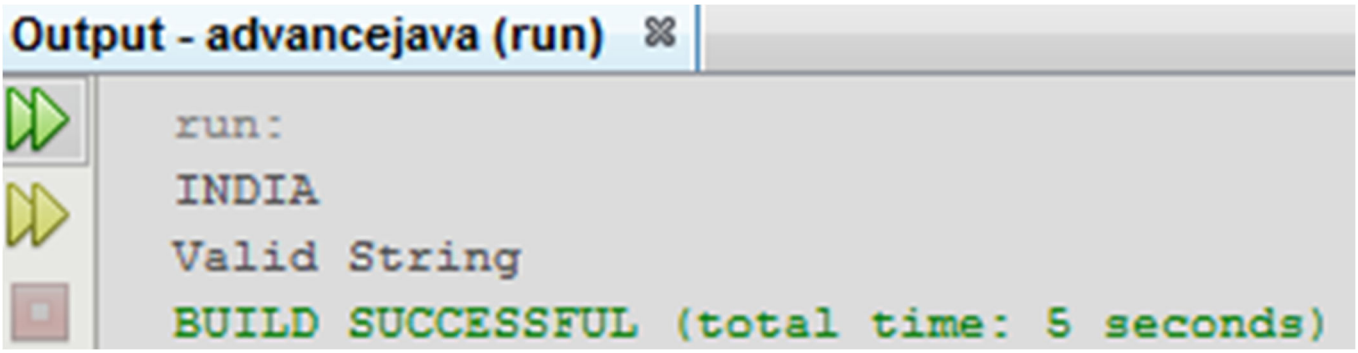
Aim: - Define an exception called 'NoMatchException' that is thrown when a string is not equal to 'INDIA'. Write a program that uses this exception.

```
package advancejava;
import java.util.Scanner;
class NoMatchException extends Exception
{
   NoMatchException(String s)
   {
      super(s);
   }
}
public class exp9
{
   static void validate(String instring)throws NoMatchException
   {
      boolean equals = instring.equals("INDIA");
      if(equals==false)
         throw new NoMatchException("String not equal to INDIA");
      else
         System.out.println("Valid String");
   }
   public static void main(String []args)
   {
      Scanner data=new Scanner(System.in);
      try{
        validate(data.next());
      }catch(Exception ex){
         System.out.println("Exception occured: "+ex);
      }
   }
}
```

Output



Pic 9.1 :-User define exception thrown.



Pic 9.2 :- User define exception not thrown.

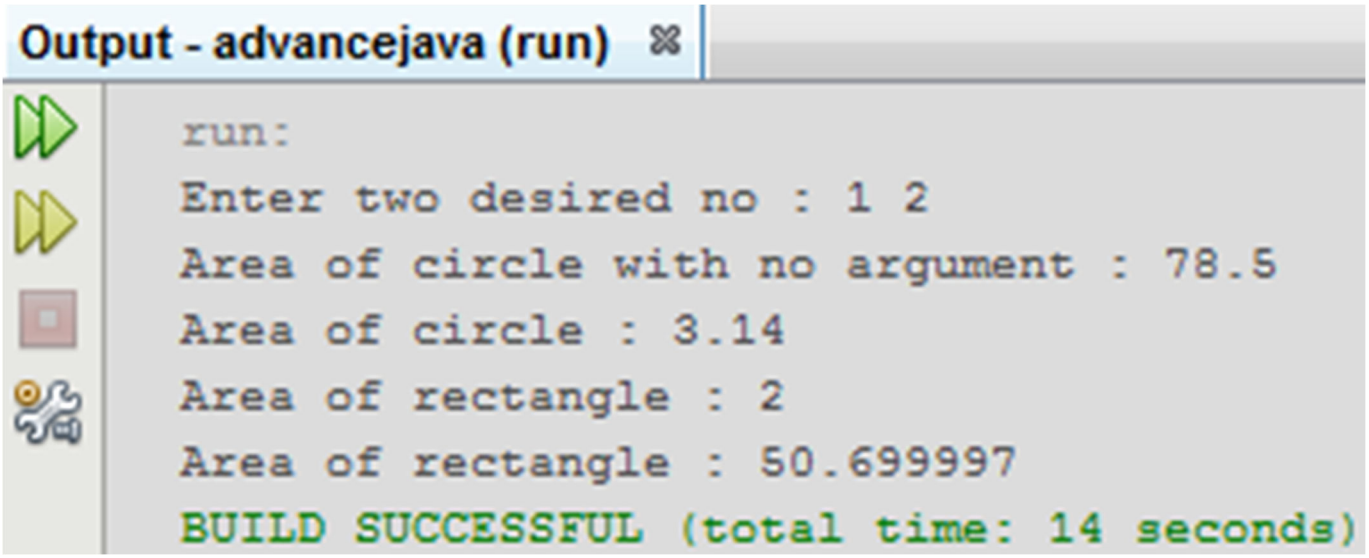
Experiment – 10A

Aim: -WAP to implement the concept of function overloading.

```
package advancejava;
import java.util.Scanner;
class areacalculator
{
   void area()
   {
      int r=5;
      System.out.println("Area of circle with no argument : "+3.14*r*r);
   }
   void area(int r)
   {
      System.out.println("Area of circle : "+3.14*r*r);
   }
   void area(int a,int b)
   {
      System.out.println("Area of rectangle : "+(a*b));
   }
   void area(float a,float b)
   {
      System.out.println("Area of rectangle : "+(a*b));
   }
}
public class exp10a
{
   public static void main(String []args)
   {
      areacalculator sushil=new areacalculator();
      Scanner data=new Scanner(System.in);
      System.out.print("Enter two desired no : ");
```

```
        int a=data.nextInt();
        int b=data.nextInt();
        sushil.area();
        sushil.area(a);
        sushil.area(a,b);
        sushil.area(1.3f,39f);
    }
}
```

Output

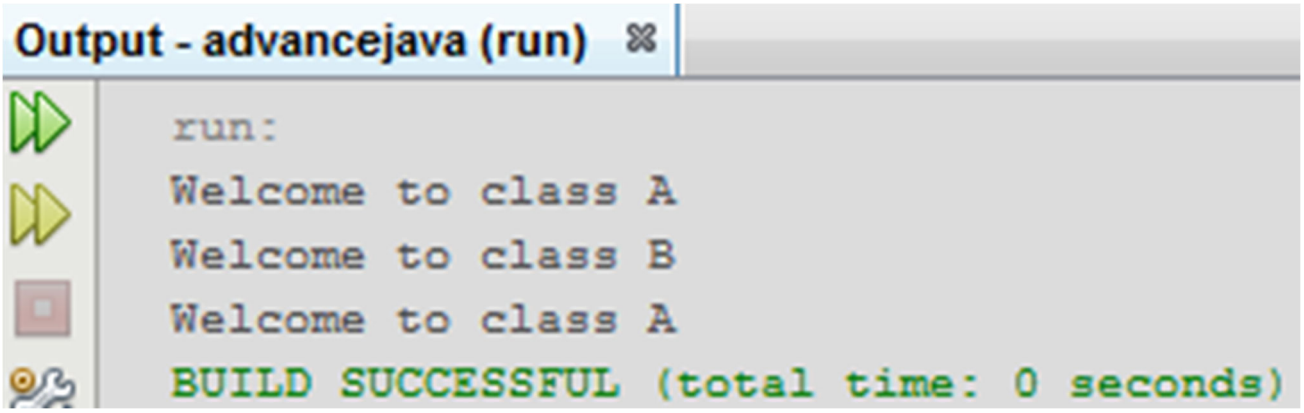


Experiment – 10B

Aim: -WAP to implement the concept of function overriding.

```
package advancejava;
class A{
    void show(){
        System.out.println("Welcome to class A");
    }
}
class B extends A{
    @Override
    void show(){
        super.show();
        System.out.println("Welcome to class B");
        super.show();
    }
}
public class exp10b{
    public static void main(String []args){
        B b=new B();
        b.show();
    }
}
```

Output



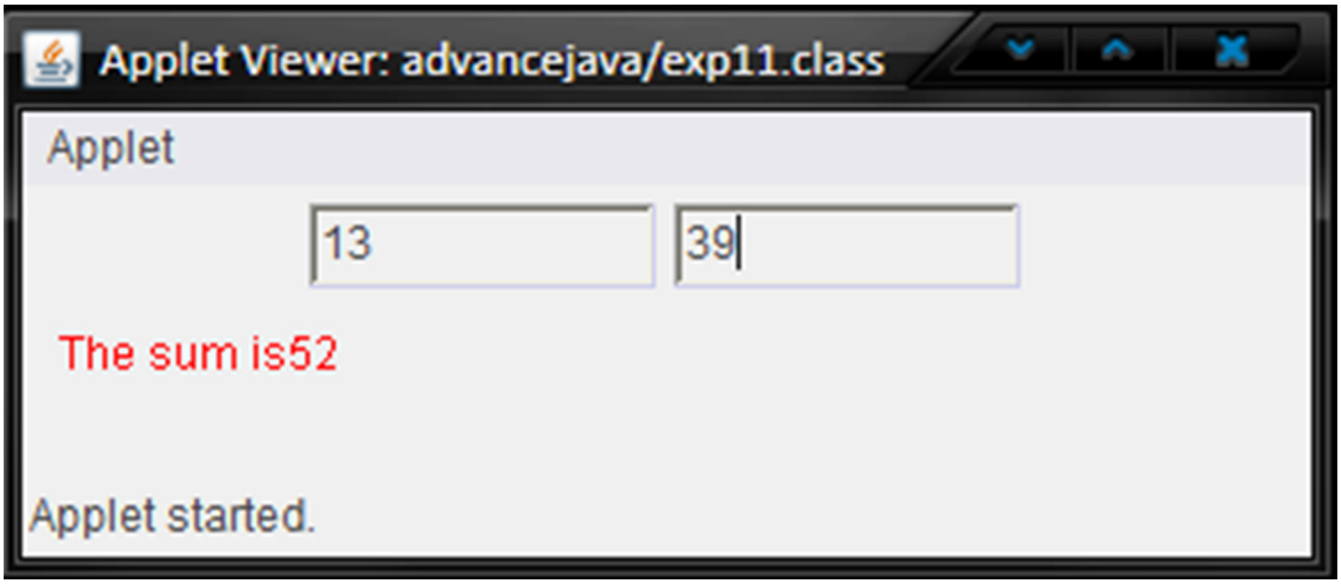
Experiment – 11

Aim: -WAP of an applet that receives two numerical values as the input from user and displays the sum of these two numbers.

```
package advancejava;
import java.applet.*;
import java.awt.*;
public class exp11 extends Applet
{
   TextField t1,t2;
   @Override
   public void init()
   {
      t1=new TextField(10);
      t2=new TextField(10);
      add(t1);
      add(t2);
      t1.setText("0");
      t2.setText("0");
   }
   @Override
   public void paint(Graphics g)
   {
      int a,b;
      g.setColor(Color.red);
      a=Integer.parseInt(t1.getText());
      b=Integer.parseInt(t2.getText());
      int c=a+b;
      String s=Integer.toString(c);
      g.drawString("The sum is"+s,10,50);
   }
   @Override
   public boolean action(Event e,Object o)
```

```
    {
        repaint();
        return true;
    }
}
```

Output



Experiment – 12

Aim: - WAP for displaying product list along with their prices and then allow user to buy any one item from them with required quantity.(Menu Driven)

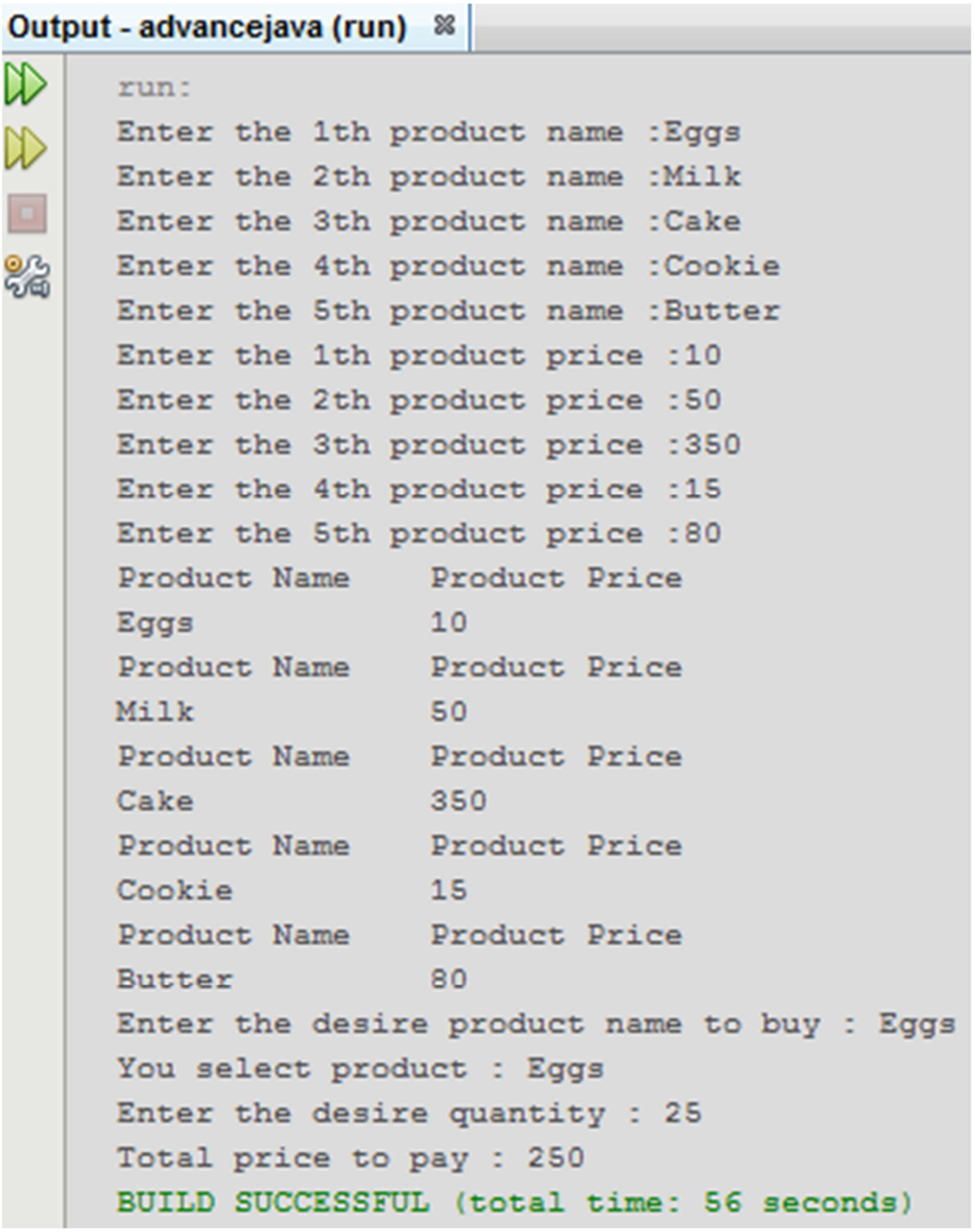
```
package advancejava;
import java.util.*;
public class exp12
{
   int[] price=new int[5];
   String[] name=new String[5];
   Scanner data=new Scanner(System.in);
   String selectitem;
   int selectprice,selectquantity,totalprice;
   public void items()
   {
      for(int i=0;i<5;i++)
      {

         System.out.print("Enter the "+(i+1)+"th product name :");
         name[i]=data.next();
      }
   }
   public void prices()
   {
      for(int i=0;i<5;i++)
      {
         System.out.print("Enter the "+(i+1)+"th product price :");
         price[i]=data.nextInt();
      }
   }
   public void display()
   {
      for(int i=0;i<5;i++)
```

```
    {
        System.out.println("Product Name\tProduct Price");
        System.out.println(name[i]+"\t\t"+price[i]);
    }
}
public void choice()
{
    System.out.print("Enter the desire product name to buy : ");
    selectitem=data.next();
    for(int i=0;i<5;i++)
    {
        if(selectitem.equals(name[i]))
        {
            System.out.println("You select product : "+name[i]);
            selectprice=price[i];
            break;
        }
    }
}
void totalprice()
{
    System.out.print("Enter the desire quantity : ");
    selectquantity=data.nextInt();
    totalprice=selectquantity*selectprice;
    System.out.println("Total price to pay : "+totalprice);
}
public static void main(String []args)
{
    exp12 sushil=new exp12();
    sushil.items();
    sushil.prices();
    sushil.display();
```

```
        sushil.choice();
        sushil.totalprice();
    }
}
```

Output



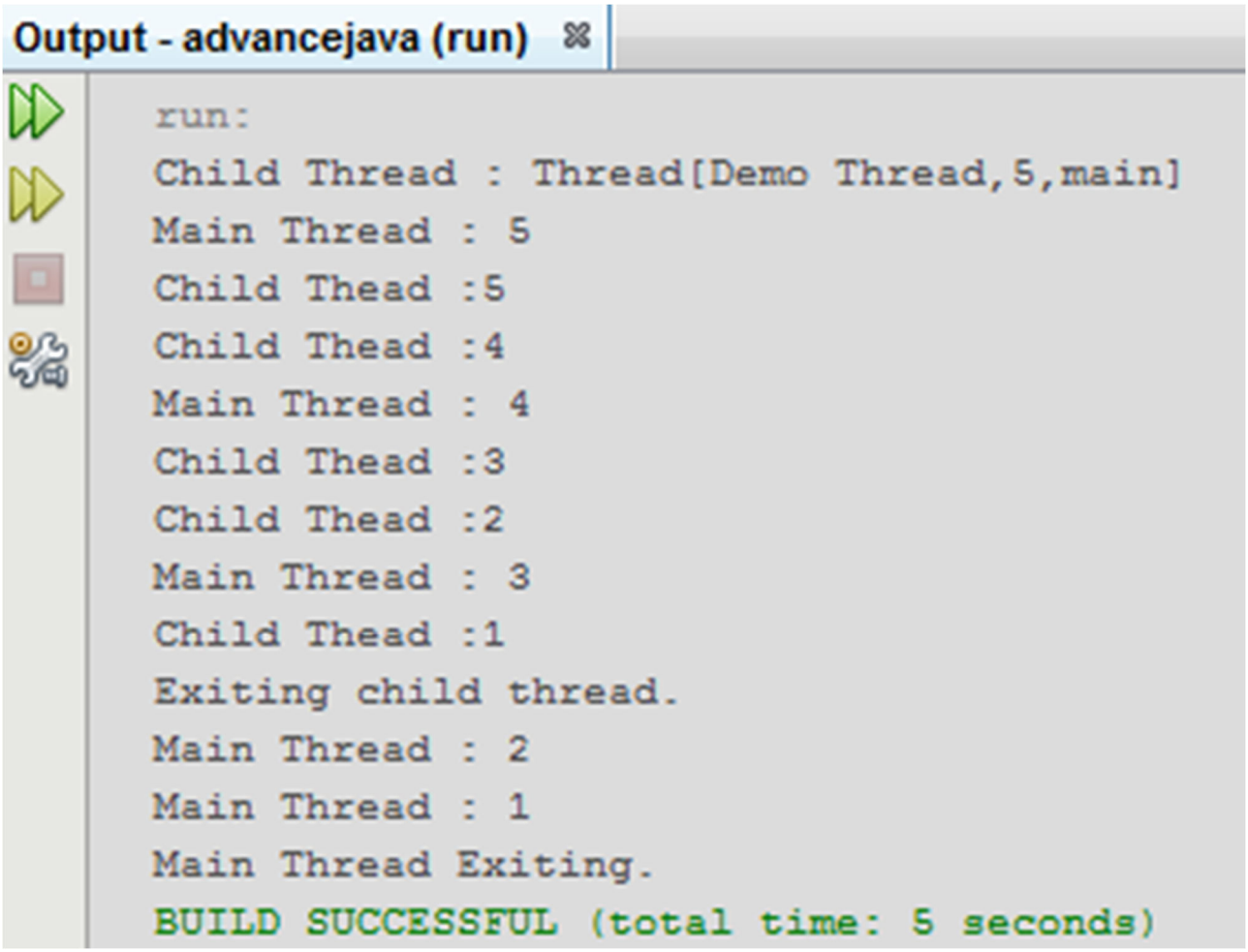
Experiment – 13

Aim: - WAP to implement multithreading(three threads using single run method).

```
package advancejava;
class newThread extends Thread
{
   newThread()
   {
      super("Demo Thread");
      System.out.println("Child Thread : "+this);
      start();
   }
   @Override
   public void run()
   {
      try
      {
         for(int i=5;i>0;i--)
         {
            System.out.println("Child Thead :"+i);
            Thread.sleep(500);
         }
      }catch(InterruptedException ex){
         System.out.println("Child Thread Interrupted.");
      }System.out.println("Exiting child thread.");
   }
}
public class exp13
{
   public static void main(String []args)
   {
      new newThread();
      try
```

```
        {
            for(int i=5;i>0;i--)
            {
                System.out.println("Main Thread : "+i);
                Thread.sleep(1000);
            }
        }catch(InterruptedException ex){
            System.out.println("Main Thread Interrupted.");
        }System.out.println("Main Thread Exiting.");
    }
}
```

Output



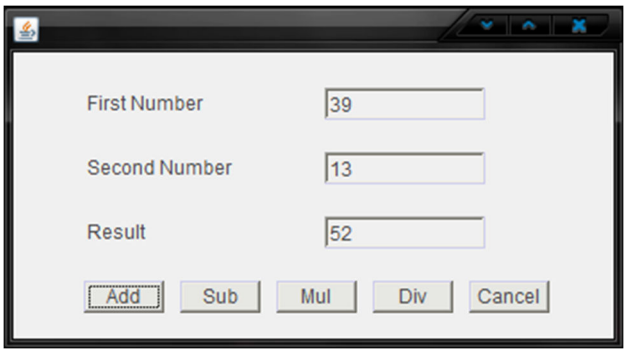
Experiment – 14

Aim: - WAP to implement the calculator using awt controls.

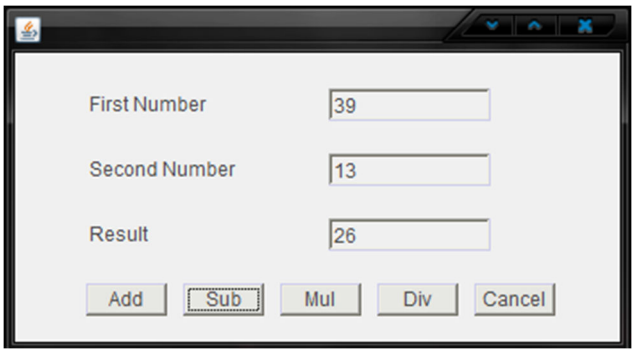
```
package advancejava;
import java.awt.event.*;
import java.awt.*;
public class exp14 implements ActionListener
{
   Frame f=new Frame();
   Label l1=new Label("First Number");
   Label l2=new Label("Second Number");
   Label l3=new Label("Result");
   TextField t1=new TextField();
   TextField t2=new TextField();
   TextField t3=new TextField();
   Button b1=new Button("Add");
   Button b2=new Button("Sub");
   Button b3=new Button("Mul");
   Button b4=new Button("Div");
   Button b5=new Button("Cancel");
   exp14()
   {
      l1.setBounds(50,100,100,20);    f.add(l1);
      l2.setBounds(50,140,100,20);    f.add(l2);
      l3.setBounds(50,180,100,20);    f.add(l3);
      t1.setBounds(200,100,100,20);   f.add(t1);
      t2.setBounds(200,140,100,20);   f.add(t2);
      t3.setBounds(200,180,100,20);   f.add(t3);
      b1.setBounds(50,250,50,20);     f.add(b1);
      b2.setBounds(110,250,50,20);    f.add(b2);
      b3.setBounds(170,250,50,20);    f.add(b3);
      b4.setBounds(230,250,50,20);    f.add(b4);
      b5.setBounds(290,250,50,20);    f.add(b5);
```

```
        b1.addActionListener(this);
        b2.addActionListener(this);
        b3.addActionListener(this);
        b4.addActionListener(this);
        b5.addActionListener(this);
        f.setLayout(null);
        f.setVisible(true);
        f.setSize(400,350);
    }
    @Override
    public void actionPerformed(ActionEvent e)
    {
        int n1=Integer.parseInt(t1.getText());
        int n2=Integer.parseInt(t2.getText());
        if(e.getSource()==b1)
            t3.setText(String.valueOf(n1+n2));
        if(e.getSource()==b2)
            t3.setText(String.valueOf(n1-n2));
        if(e.getSource()==b3)
            t3.setText(String.valueOf(n1*n2));
        if(e.getSource()==b4)
            t3.setText(String.valueOf(n1/n2));
        if(e.getSource()==b5)
            System.exit(0);
    }
    public static void main(String []args)
    {
            exp14 sushil = new exp14();
    }
}
```

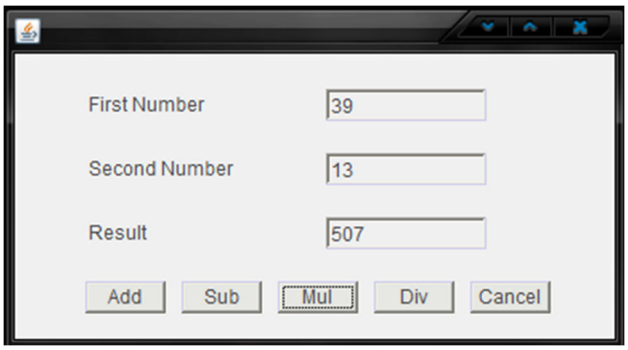
Output



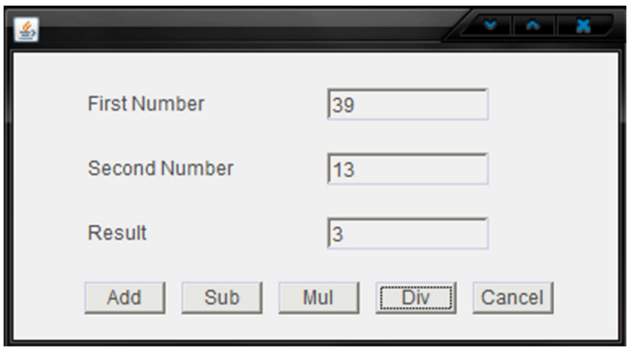
Pic 14.1 :-Addition.



Pic 14.2 :-Subtraction.



Pic 14.3 :-Multiplication.



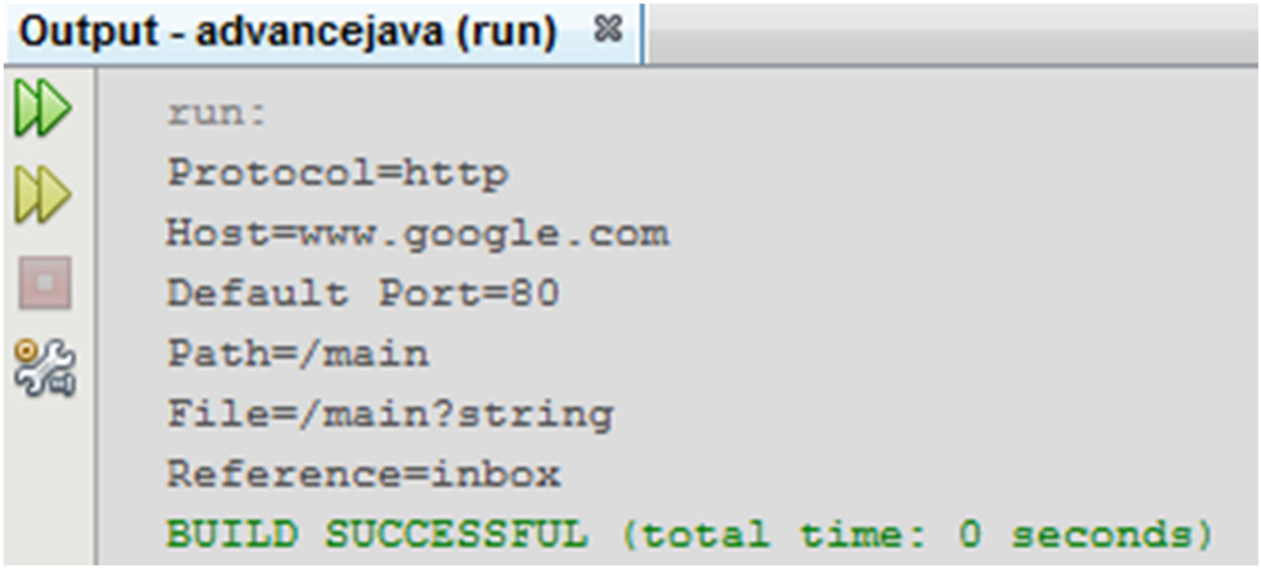
Pic 14.4 :-Division.

Experiment – 15

Aim: - WAP to implement the URL.

```
package advancejava;
import java.net.*;
public class exp15{
   public static void main(String []args){
      try{
         String str="http://www.google.com/main?string#inbox";
         URL ur=new URL(str);
         System.out.println("Protocol="+ur.getProtocol());
         System.out.println("Host="+ur.getHost());
         System.out.println("Default Port="+ur.getDefaultPort());
         System.out.println("Path="+ur.getPath());
         System.out.println("File="+ur.getFile());
         System.out.println("Reference="+ur.getRef());
      }catch(MalformedURLException e){
         System.out.println(e);
      }
   }
}
```

Output

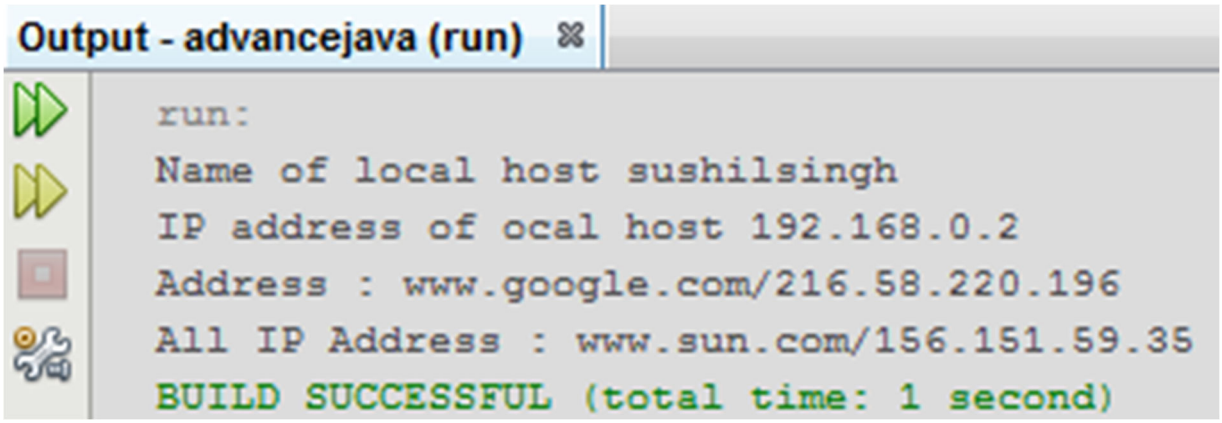


Experiment – 16

Aim: - WAP to implement the InetAddress.

```
package advancejava;
import java.net.*;
public class exp16{
   public static void main(String []args){
      try{
         InetAddress add=InetAddress.getLocalHost();
         String name=add.getHostName();
         System.out.println("Name of local host "+name);
         String add1=add.getHostAddress();
         System.out.println("IP address of ocal host "+add1);
         InetAddress address=InetAddress.getByName("www.google.com");
         System.out.println("Address : "+address);
         InetAddress add2[]=InetAddress.getAllByName("www.sun.com");
         for(int i=0;i<add2.length;i++){
            System.out.println("All IP Address : "+add2[i]);
         }
      }catch(Exception ex){
         System.out.println(ex);
      }
   }
}
```

Output



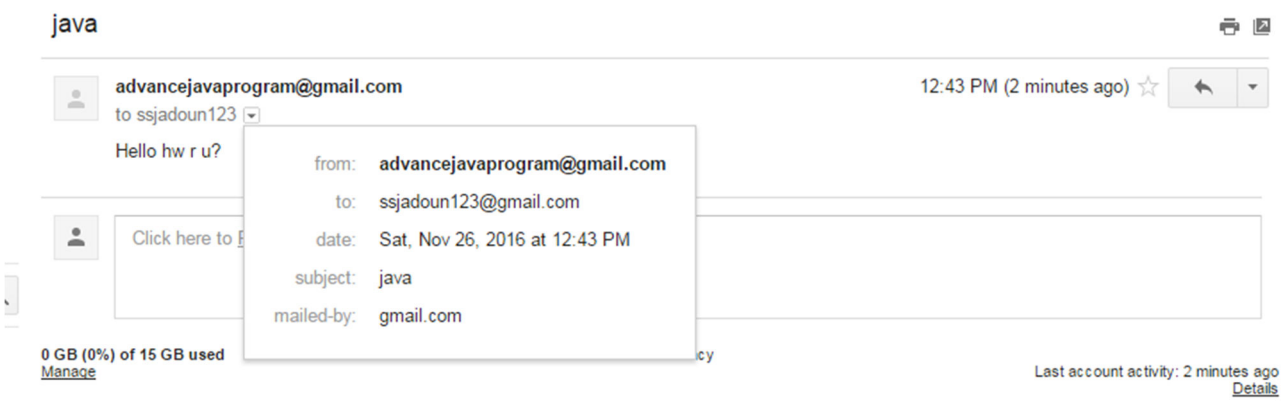
Experiment – 17

Aim: - WAP for Sending e-mail in Java.

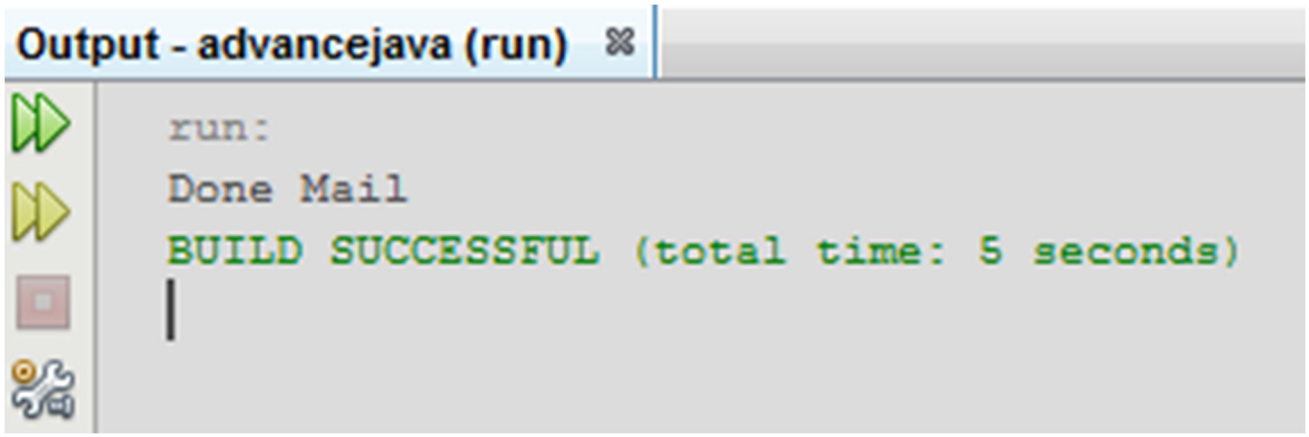
```
package advancejava;
import javax.mail.*;
import java.util.Properties;
import javax.mail.internet.*;
public class exp17{
   public static void main(String[] args){
          String host = "smtp.gmail.com";
          String user = "advancejavaprogram@gmail.com";
          String pass = "hello123123";
          String SSL_FACTORY = "javax.net.ssl.SSLSocketFactory";
          String from1 = "advancejavaprogram@gmail.com";
          String to1 = "ssjadoun123@gmail.com";
          String subject1 = "java";
          String messageText = "Hello hw r u?";
          Properties props = System.getProperties();
      props.put("mail.host", host);
          props.put("mail.transport.protocol.", "smtp");
          props.put("mail.smtp.port", "465");
          props.put("mail.smtp.socketFactory.class", SSL_FACTORY);
          Session mailSession = Session.getDefaultInstance(props, null);
          Message msg = new MimeMessage(mailSession);
      try{
         InternetAddress  fr = new InternetAddress(from1);
         msg.setFrom(fr);
         InternetAddress[] address = {new InternetAddress(to1)};
         msg.setRecipients(Message.RecipientType.TO, address);
         msg.setSubject(subject1);
         msg.setContent(messageText, "text/html");
         Transport transport = mailSession.getTransport("smtp");
         transport.connect(host, user, pass);
```

```
            transport.sendMessage(msg, msg.getAllRecipients());
            transport.close();
            System.out.println("Done Mail");
        }catch (Exception err){
            System.out.println("not done mail");
            System.out.println(err);
        }
    }
}
```

Output



Pic 17.1 :-Mail in inbox.



Pic 17.2 :-Mail has been send.

Experiment – 18

Aim: - WAP to implement Single-Server Communication.

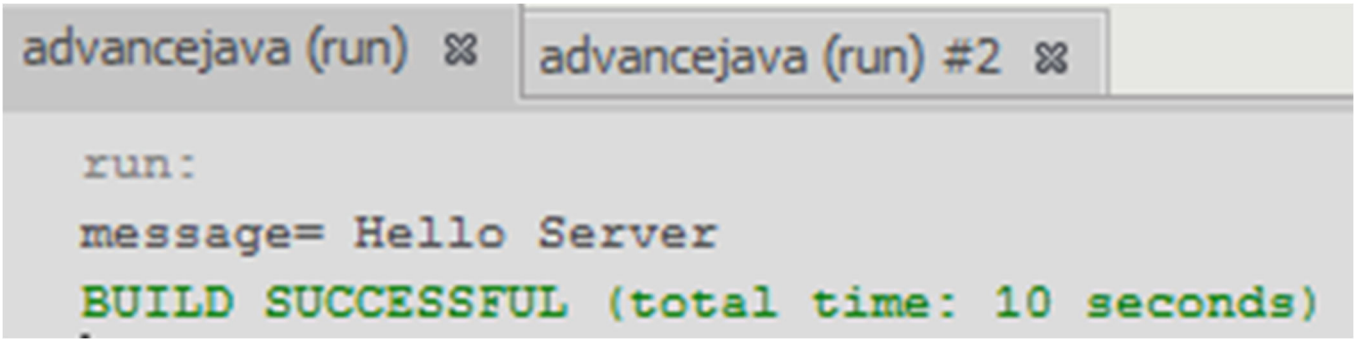
File : exp18client.java

```
package advancejava;
import java.io.*;
import java.net.*;
public class exp18client{
   public static void main(String[] args){
      try{
         Socket s=new Socket("localhost",6666);
         DataOutputStream dout=new DataOutputStream(s.getOutputStream());
         dout.writeUTF("Hello Server");
         dout.flush();          dout.close();          s.close();
      }catch(Exception e){
         System.out.println(e);
} } }
```

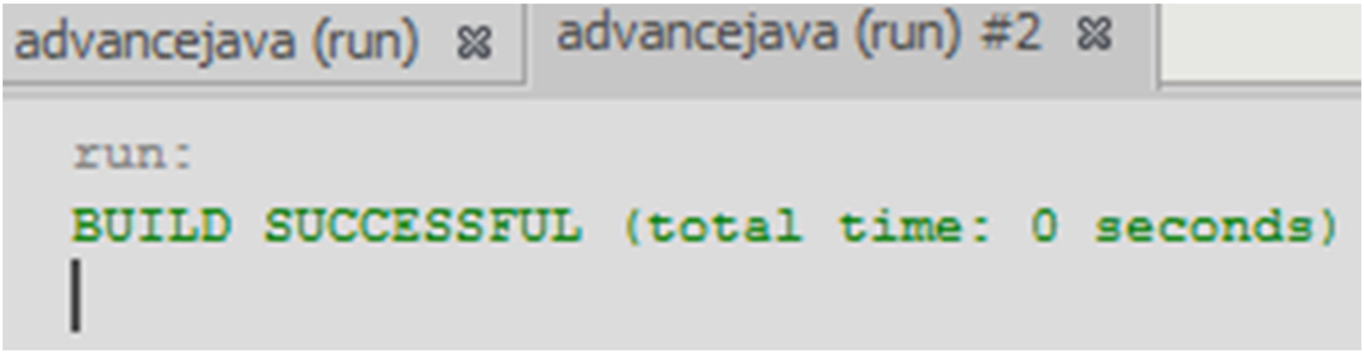
File : exp18server.java

```
package advancejava;
import java.io.*;
import java.net.*;
public class exp18server{
   public static void main(String[] args){
      try{
         ServerSocket ss=new ServerSocket(6666);
         Socket s=ss.accept();
         DataInputStream dis=new DataInputStream(s.getInputStream());
         String  str=(String)dis.readUTF();
         System.out.println("message= "+str);      ss.close();
      }catch(Exception e){
         System.out.println(e);
} } }
```

Output



Pic 18.1 :- File exp18server.java.



Pic 18.2 :- File exp18client.java.

Experiment – 19

Aim: - WAP to create a student form web application and store the data in derby database (make use of java beans).

File :index.jsp

```
<!DOCTYPE html>
<html>
   <head>
      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
      <title>JSP Page</title>
   </head>
   <body>
      <h1 align="center">Student Form</h1>
      <form action="hello.jsp" method="POST">
         <table border="1" align="center">
            <tbody>
               <tr>
                  <td>Student Name</td>
                  <td><input type="text" name="name" value="" /></td>
               </tr>
               <tr>
                  <td>Mail ID</td>
                  <td><input type="text" name="mail" value="" /></td>
               </tr>
               <tr>
                  <td colspan="2" align="center"><input type="submit" value="submit" /></td>
               </tr>
            </tbody>
         </table>
      </form>
   </body>
</html>
```

File :hello.jsp

```
<!DOCTYPE html>
<html>
   <head>
      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
      <title>JSP Page</title>
   </head>
   <body>
      <h1></h1>
      <jsp:useBean id="myBean" scope="session" class="org.geeks.Second" />
      <jsp:setProperty name="myBean" property="name" />
      <jsp:setProperty name="myBean" property="mail" />
      <table border="1" align="center">
         <thead>
            <tr>
               <td>Form Values</td>
            </tr>
         </thead>
         <tbody>
            <tr>
               <td><jsp:getProperty name="myBean" property="name" /></td>
            </tr>
            <tr>
               <td><jsp:getProperty name="myBean" property="mail" /></td>
            </tr>
         </tbody>
      </table>
            <%
               int a= myBean.store();
               if(a==1){
                  out.print("Elements Stored");
               }else{
```

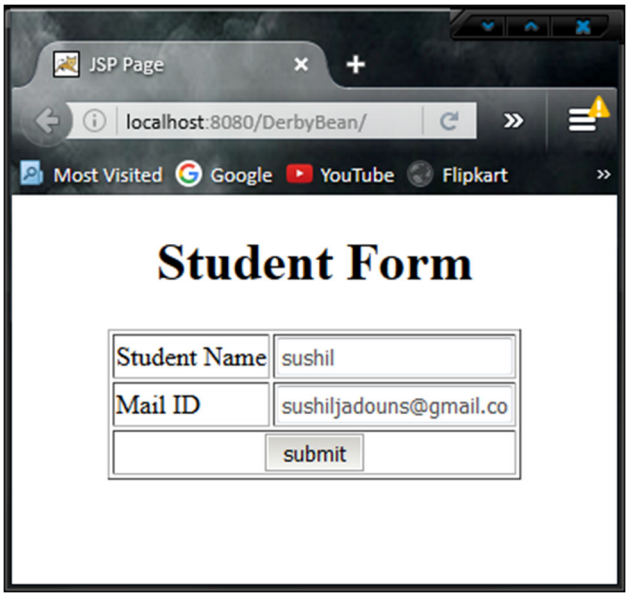
```
                    out.print("Elements Not Stored");
                }
            %>
    </body>
</html>
```

File :Second.java

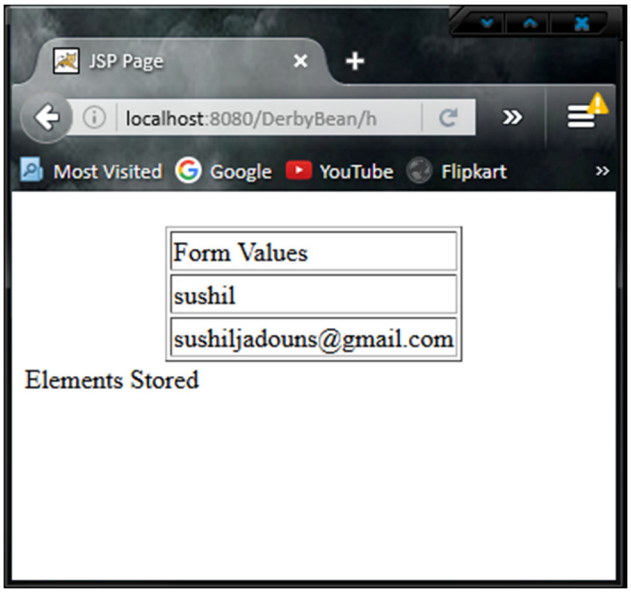
```
package org.geeks;
import java.sql.*;
public class Second {
    private String name;
    private String mail;
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getMail() {
        return mail;
    }
    public void setMail(String mail) {
        this.mail = mail;
    }
    public int store() throws ClassNotFoundException, SQLException
    {
        Class.forName("org.apache.derby.jdbc.ClientDriver");
        String url="jdbc:derby://localhost:1527/sample;create=true;user=app;password=app";
        Connection con=DriverManager.getConnection(url);
        PreparedStatement ps=con.prepareStatement("insert into studentdata(name,mail) values(?,?)");
        ps.setString(1,name);
        ps.setString(2,mail);
        int a = ps.executeUpdate();
```

```
        if(a==1)
            return a;
        else
            return a;
    }
}
```

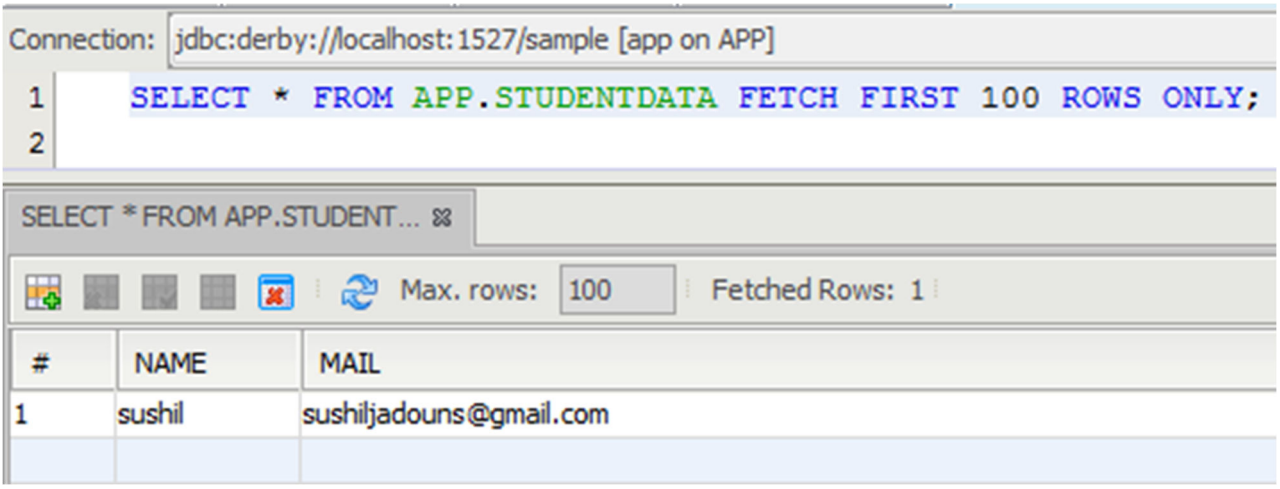
Output



Pic 19.1: -Submitting data.



Pic 19.2:-Displaying data.



Pic 19.3: -Data Stored in Derby Database.

Experiment – 20

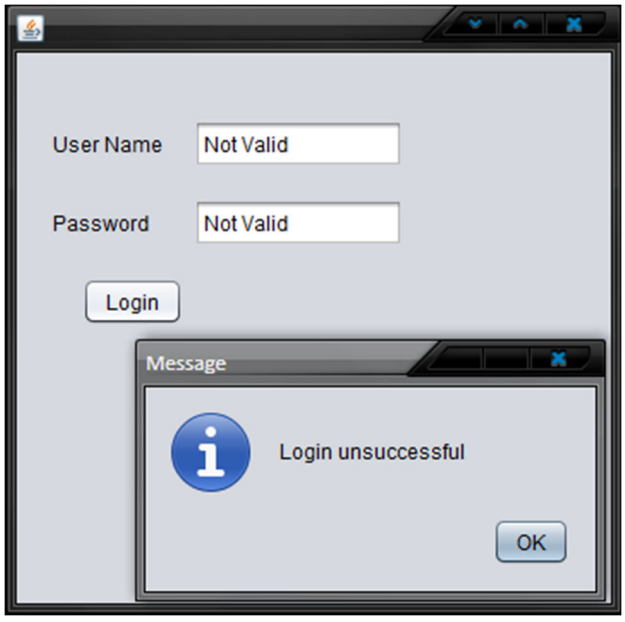
Aim: - WAP to implement the Login_Id Form using JDBC.

```
package advancejava;
import java.sql.*;
import java.util.*;
import javax.swing.JOptionPane;
public class exp20new extends javax.swing.JFrame {
   public exp20() {
      initComponents();
   }
   private void initComponents() {
                  //Autogenerated code
   }
   private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
   try{
      Class.forName("java.sql.DriverManager");
      Connection con = (Connection)
      DriverManager.getConnection("jdbc:mysql://localhost:3306/advancejava","root","1234");
      Statement stmt = con.createStatement();
      ResultSet rs;
      String query = "select*from exp20";
      rs= stmt.executeQuery(query);
      while(rs.next()){

if(((jTextField1.getText()).equals(rs.getString(1)))&&((jTextField2.getText()).equals(rs.getString(2)))) {
            JOptionPane.showMessageDialog(this,"login successful");
            System.exit(0);
         }
      }JOptionPane.showMessageDialog(this,"Login unsuccessful");
      System.exit(0);
      con.close();
   }catch (ClassNotFoundException | SQLException ex) {
```

```
        Logger.getLogger(exp20new.class.getName()).log(Level.SEVERE, null, ex);
    }
    }
    public static void main(String args[]) {
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new exp20new().setVisible(true);
            }
        });
    }
    // Variables declaration - do not modify
    private javax.swing.JButton jButton1;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField jTextField2;
    // End of variables declaration
}
```

Output



Pic 20.1: -Login unsuccessful.

Pic 20.1:-Login successful.

Experiment – 21

Aim: - WAP to implement the SQL commands using JDBC.

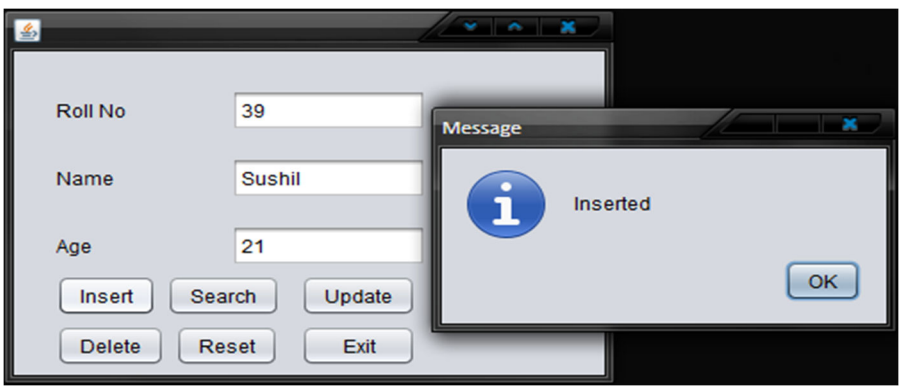
```
package advancejava;
import java.sql.*;
import java.util.logging.*;
import javax.swing.JOptionPane;
public class exp21new extends javax.swing.JFrame {
    public exp21new() {
        initComponents();
    }
            //Autogenerated code
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        String rollno=rn.getText();
        String name=n.getText();
        String age=a.getText();
        String query="Insert into exp21 values("+rollno+",'"+name+"',"+age+");";
        try{
            Class.forName("java.sql.DriverManager");
            Connection con=(Connection)
                    DriverManager.getConnection("jdbc:mysql://localhost:3306/advancejava","root","1234");
            Statement stmt=con.createStatement();
            int rowsEffected = stmt.executeUpdate(query);
            if(rowsEffected==0)
              JOptionPane.showMessageDialog(this, "Please Try Again");
            else
              JOptionPane.showMessageDialog(this,"Inserted");
        } catch (SQLException | ClassNotFoundException ex) {
            Logger.getLogger(exp21new.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    String rollno=rn.getText();
```

```
String query="Select*from exp21 where rollno="+rollno+";";
try{
    Class.forName("java.sql.DriverManager");
    Connection con=(Connection)
        DriverManager.getConnection("jdbc:mysql://localhost:3306/advancejava","root","1234");
    Statement stmt=con.createStatement();
    ResultSet rs =  stmt.executeQuery(query);
      if(rs.next())
      {
        String name=rs.getString("name");
        String age=rs.getString("age");
        n.setText(name);
        a.setText(age);
        JOptionPane.showMessageDialog(this," Record Found ");
      }else
        JOptionPane.showMessageDialog(this," No Record Found ");
  } catch (SQLException | ClassNotFoundException ex) {
    Logger.getLogger(exp21new.class.getName()).log(Level.SEVERE, null, ex);
  }
}
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
  String rollno=rn.getText();
  String name=n.getText();
  String age=a.getText();
  String query="Update exp21 set name='"+(name)+"',age="+(age)+" where rollno="+(rollno)+";";
  try{
    Class.forName("java.sql.DriverManager");
    Connection con=(Connection)
        DriverManager.getConnection("jdbc:mysql://localhost:3306/advancejava","root","1234");
    Statement stmt=con.createStatement();
    int rowsEffected = stmt.executeUpdate(query);
    if(rowsEffected==0)
```

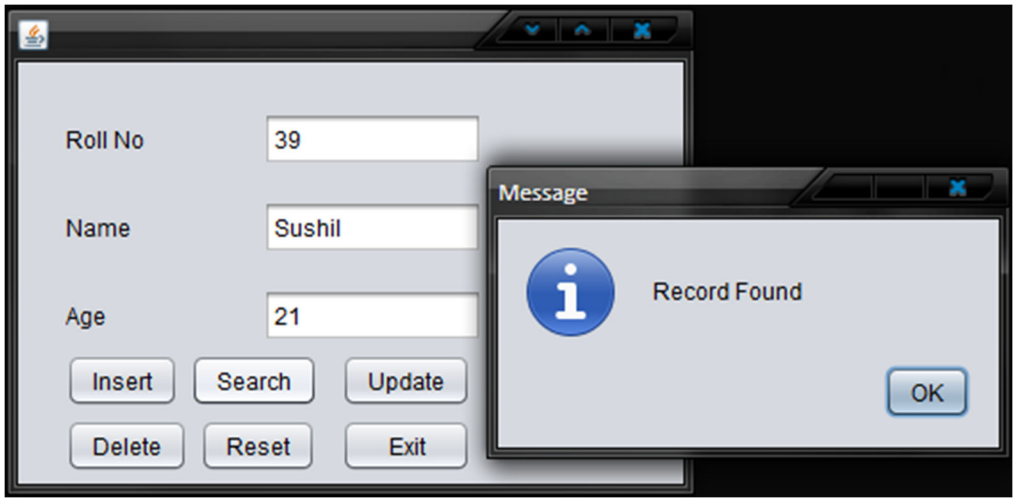
```
            JOptionPane.showMessageDialog(this, "Please Try Again");
        else
            JOptionPane.showMessageDialog(this,"Inserted");
    } catch (SQLException | ClassNotFoundException ex) {
        Logger.getLogger(exp21new.class.getName()).log(Level.SEVERE, null, ex);
    }
}
private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
    String rollno=rn.getText();
    String query="Delete from exp21 where rollno ="+(rollno)+";";
    try{
        Class.forName("java.sql.DriverManager");
        Connection con=(Connection)
                DriverManager.getConnection("jdbc:mysql://localhost:3306/advancejava","root","1234");
        Statement stmt=con.createStatement();
        int rowsEffected = stmt.executeUpdate(query);
        if(rowsEffected==0)
            JOptionPane.showMessageDialog(this, "Please Try Again");
        else
            JOptionPane.showMessageDialog(this,"Deleted");
    } catch (SQLException | ClassNotFoundException ex) {
        Logger.getLogger(exp21new.class.getName()).log(Level.SEVERE, null, ex);
    }
}
private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {
    n.setText("");
    rn.setText("");
    a.setText("");
}
private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {
System.exit(0);
}
```

```
    public static void main(String args[]) {
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new exp21new().setVisible(true);
            }
        });
    }
    // Variables declaration - do not modify
    private javax.swing.JTextField a;
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JButton jButton3;
    private javax.swing.JButton jButton4;
    private javax.swing.JButton jButton5;
    private javax.swing.JButton jButton6;
    private javax.swing.JButton jButton7;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JTextField n;
    private javax.swing.JTextField rn;
    // End of variables declaration
}
```

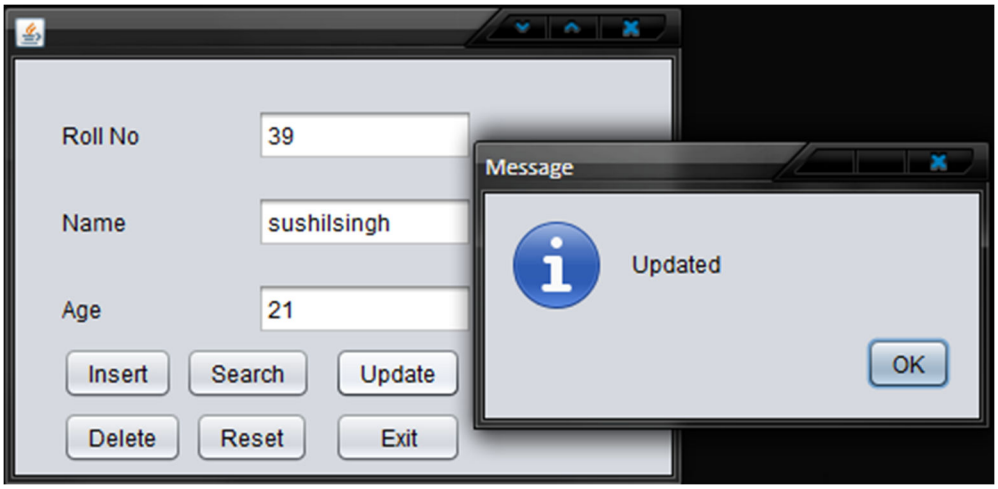
Output



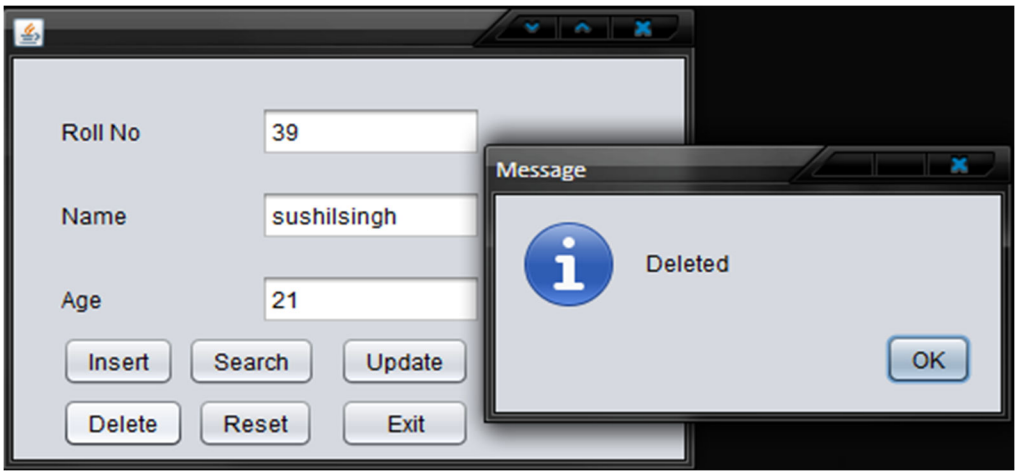
Pic 21.1 :-Insertion.



Pic 21.2 :-Searching.



Pic 21.3 :-Updation.



Pic 21.4 :-Deletion.

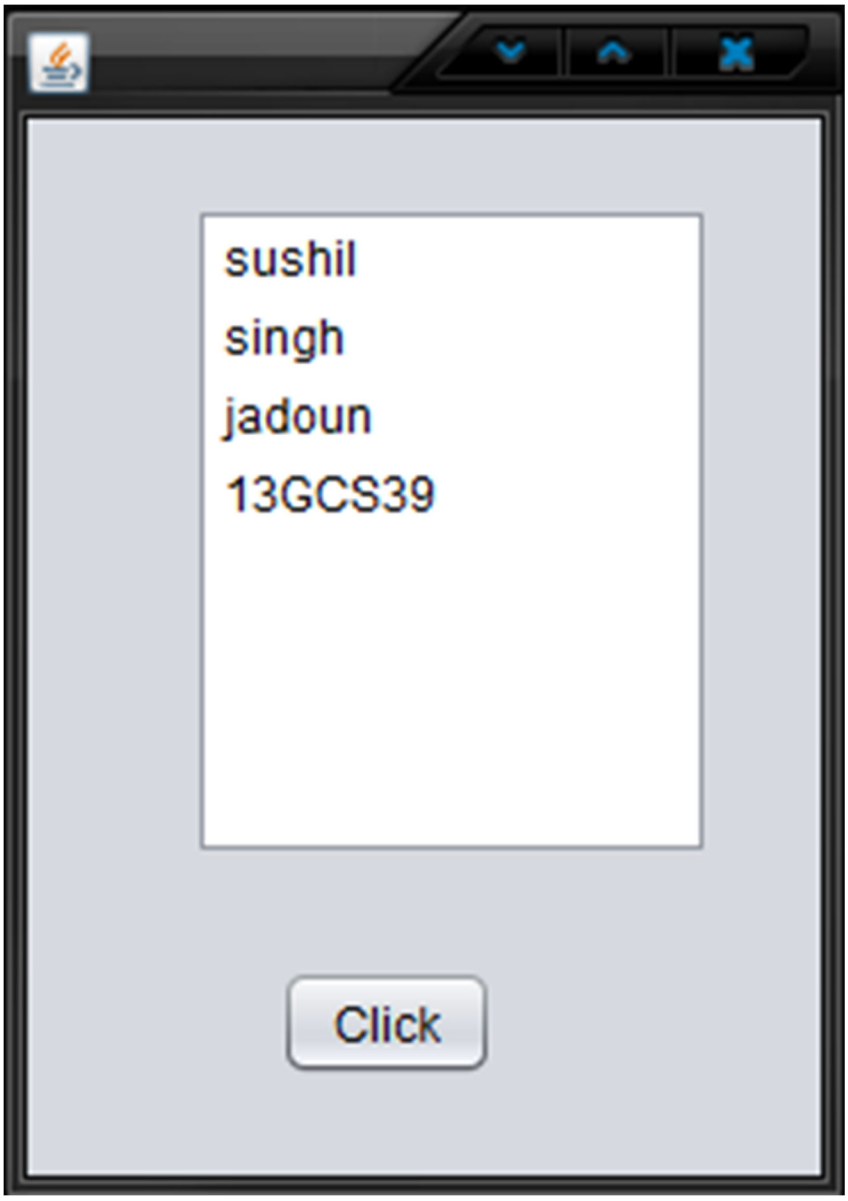
Experiment – 22

Aim: - WAP to implement the list.

```
package advancejava;
import java.sql.*;
import java.util.logging.*;
import javax.swing.DefaultListModel;
public class exp22 extends javax.swing.JFrame {
   public exp22() {
      initComponents();
   }
         //Autogenerated code
            private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
      String query="Select name from exp21;";
      DefaultListModel model=new DefaultListModel();
      try{
         Class.forName("java.sql.DriverManager");
         Connection con=(Connection)
               DriverManager.getConnection("jdbc:mysql://localhost:3306/advancejava","root","1234");
         Statement stmt=con.createStatement();
         ResultSet rs=stmt.executeQuery(query);
         while(rs.next()){
            model.addElement(rs.getString(1));
         }jList1.setModel(model);
         } catch (SQLException | ClassNotFoundException ex) {
         Logger.getLogger(exp21.class.getName()).log(Level.SEVERE, null, ex);
      }
   }
   public static void main(String args[]) {
                  //Autogenerated code
                        java.awt.EventQueue.invokeLater(new Runnable() {
         public void run() {
            new exp22().setVisible(true);
```

```
        }
    });
}
// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JList jList1;
private javax.swing.JScrollPane jScrollPane1;
// End of variables declaration
}
```

Output

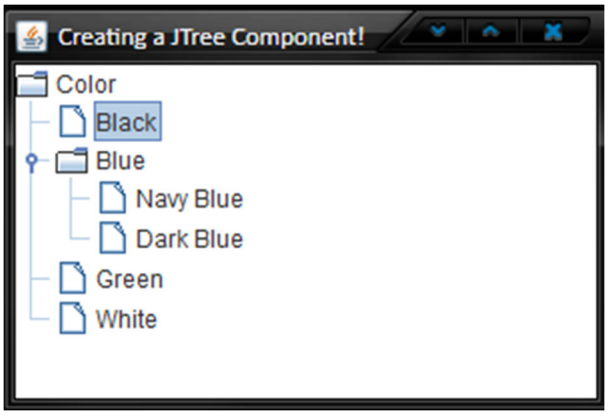


Experiment – 23

Aim: - WAP to implement the JTrees.

```
package advancejava;
import javax.swing.*;
import javax.swing.tree.*;
public class exp23{
  public static void main(String[] args) {
    JFrame frame = new JFrame("Creating a JTree Component!");
    DefaultMutableTreeNode parent = new DefaultMutableTreeNode("Color", true);
    DefaultMutableTreeNode black = new DefaultMutableTreeNode("Black");
    DefaultMutableTreeNode blue = new DefaultMutableTreeNode("Blue");
    DefaultMutableTreeNode nBlue = new DefaultMutableTreeNode("Navy Blue");
    DefaultMutableTreeNode dBlue = new DefaultMutableTreeNode("Dark Blue");
    DefaultMutableTreeNode green = new DefaultMutableTreeNode("Green");
    DefaultMutableTreeNode white = new DefaultMutableTreeNode("White");
    parent.add(black);          parent.add(blue);          blue.add(nBlue);
    blue.add(dBlue);            parent.add(green );        parent.add(white);
    JTree tree = new JTree(parent);
    frame.add(tree);
    frame.setSize(200,200);
    frame.setVisible(true);
  }
}
```

Output

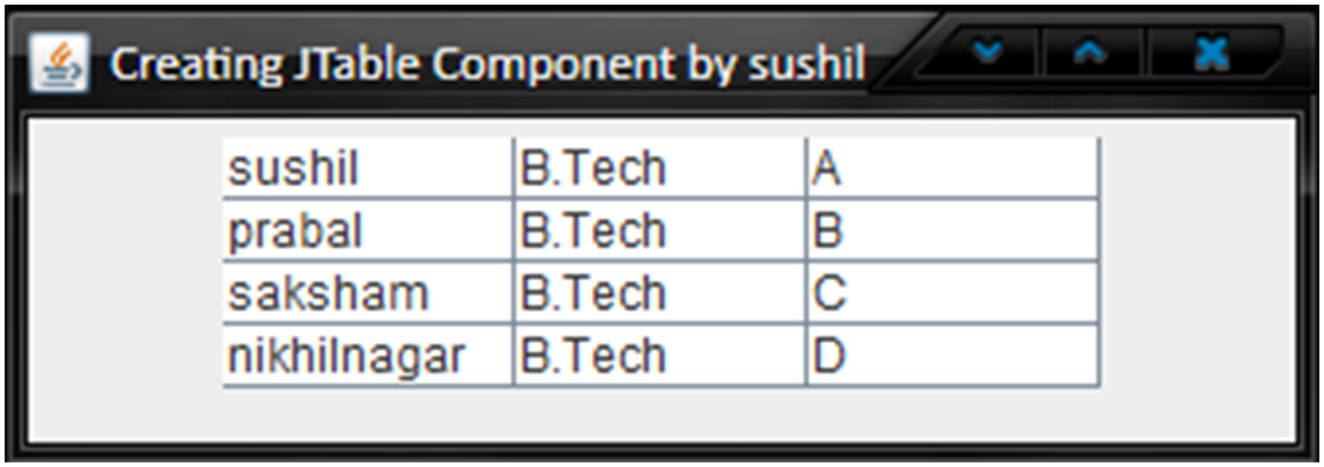


Experiment – 24

Aim: - WAP to implement the JTable.

```
package advancejava;
import javax.swing.*;
import java.awt.*;
import javax.swing.table.*;
public class exp24{
  public static void main(String[] args){
      exp24 exp24 = new exp24();
  }public exp24(){
    JFrame frame = new JFrame("Creating JTable Component by sushil");
    JPanel panel = new JPanel();
    String data[][] = {{"sushil","B.Tech","A"},{"prabal","B.Tech","B"},
     {"saksham","B.Tech","C"},{"nikhilnagar","B.Tech","D"}};
      String col[] = {"Name","Course","Grade"};
    JTable table = new JTable(data,col);
    panel.add(table,BorderLayout.CENTER);
    frame.add(panel);
    frame.setSize(300,200);
    frame.setVisible(true);
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}}
```

Output



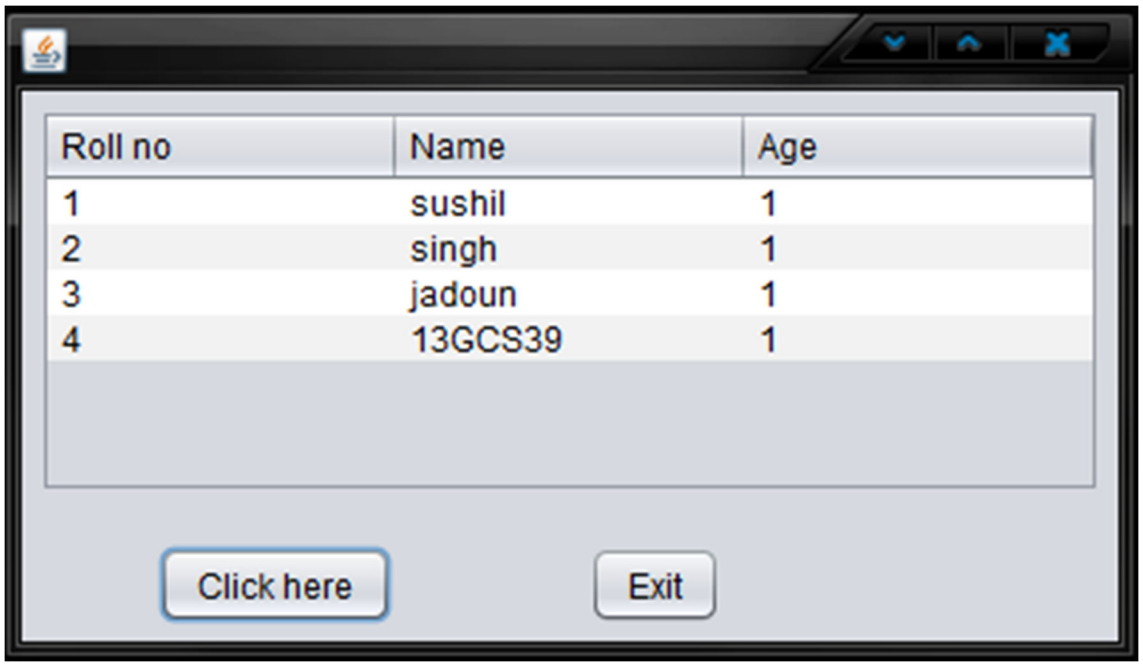
Experiment – 25

Aim: - WAP to create the table using JDBC.

```
package advancejava;
import java.sql.*;
import java.util.logging.*;
import javax.swing.JOptionPane;
import javax.swing.table.DefaultTableModel;
public class exp25 extends javax.swing.JFrame {
   public exp25() {
      initComponents();
   }
         //autogenerated code
            private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
      System.exit(0);
   }
   private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
   String query="Select*from exp21;";
   DefaultTableModel model= (DefaultTableModel)jTable1.getModel();
      int colno=3;
   try{
      Class.forName("java.sql.DriverManager");
      Connection con=(Connection)
            DriverManager.getConnection("jdbc:mysql://localhost:3306/advancejava","root","1234");
      Statement stmt=con.createStatement();
      ResultSet rs =  stmt.executeQuery(query);
      while(rs.next()){
         Object[] cell= new Object[colno];
         for(int i=0;i<colno;i++){
            cell[i]=rs.getObject(i+1);
         }model.addRow(cell);
      }
      jTable1.setModel(model);
```

```
        } catch (SQLException | ClassNotFoundException ex) {
            Logger.getLogger(exp21.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    public static void main(String args[]) {
                        //autogenerated code
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new exp25().setVisible(true);
            }
        });
    }
    // Variables declaration - do not modify
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JTable jTable1;
    // End of variables declaration
}
```

Output



Experiment – 26

Aim: - WAP to implement the Remote Method Invocation.

File : AddI.java

```
import java.rmi.Remote;
public interface AddI extends Remote{
        public int add(int x,int y) throws Exception;
}
```

File : AddC.java

```
import java.rmi.server.*;
public class AddC extends UnicastRemoteObject implements AddI{
        public AddC() throws Exception{
                super();
        }public int add(int x,int y) {
                return x+y;
} }
```

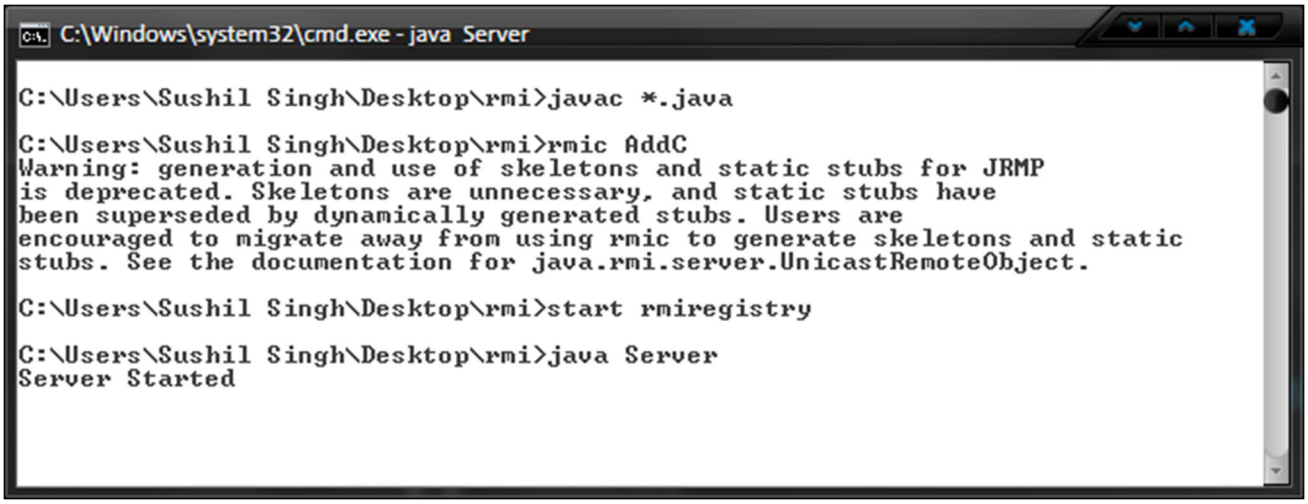
File : Client.java

```
import java.rmi.*;
public class Client{
        public static void main(String []args) throws Exception{
                AddI obj =(AddI) Naming.lookup("Add");
                int n = obj.add(5,4);
                System.out.println("Additon is : " + n);
} }
```

File : Server.java

```
import java.rmi.*;
public class Server{
        public static void main(String []args) throws Exception{
                AddC obj = new AddC();
                Naming.rebind("Add",obj);
                System.out.println("Server Started");
} }
```

Output

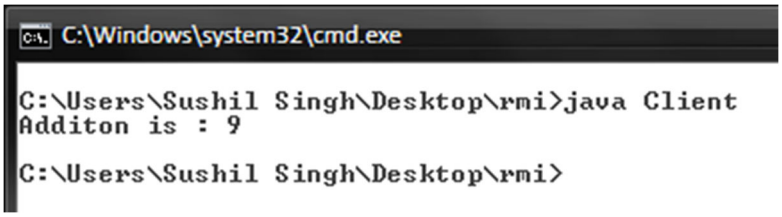


1.Compile all .java files.

2.Generate skeletons and stubs.

3.Start the registry.

4.Start server.



Client file execution.