CA LAB-IV (A) LAB on Java Programming Assignments

Assignment 1) Write a program that demonstrate program structure of java with use of arithmetical and logical implementation.

```
public class Assignment1
{
   public static void main(String[] args)
   {
      // initializing variables
      int num1 = 20, num2 = 10, sum = 0,diff = 0,multi=0;
      float div=0;
      System.out.println("num1 = " + num1);
      System.out.println("num2 = " + num2);
      sum = num1 + num2;
      System.out.println("The sum = " + sum);
      diff = num1 - num2;
      System.out.println("The diff = " + diff);
      multi = num1 * num2;
      System.out.println("The multi = " + multi);
      div = num1 / num2;
      System.out.println("The div = " + div);
      if ((num1==20) && (num2==10))// You can also use || operator
      {
         System.out.println("Both True");
      }
```

```
        else
            System.out.println("Both Not True");
    }
    }
```

OUTPUT:-

num1 = 20

num2 = 10

The sum = 30

The diff = 10

The multi = 200

The div = 2.0

Both True

Assignment 2) Write a program that demonstrate string operations using String and StringBuffer class.

```
package assignment2;
import java.io.*;
public class Assignment2
{
    public static void main(String[] args)
    {
        try
                {
           DataInputStream d= new DataInputStream(System.in);
            System.out.println("\n enter the 1st String  ");
```

```
String s=d.readLine();
//String Functions
int y=s.length();
    System.out.println("\n length of string is "+y);
    String z=s.toUpperCase();
   System.out.println("\n string in upper case "+z);
   String l=s.toLowerCase();
   System.out.println("\n string in lower  case "+l);
   char m=s.charAt(3);
   System.out.println("\n char at 3rd index is  "+m);
   String o=s.replace('a','b');
   System.out.println("\n replaced string is "+o);
   String n=s.substring(2,5);
   System.out.println("\n sub string from 2 to 5 index  is  "+n);
   System.out.println("\n enter the character to find index");
   String s2=d.readLine();
int a=s.indexOf(s2);
    System.out.println("\n index of char is "+a);
System.out.println("\n enter the character to find last index");
   String s3=d.readLine();
   int b=s.lastIndexOf(s3);
   System.out.println("\n last index of char is  "+b);
System.out.println("\n enter the 2nd String ");
String s1=d.readLine();
   String p=s.concat(s1);
```

```
    System.out.println("\n concated string is "+p);
    boolean b1=s.equals(s1);
    if(b1==true)
    {
    System.out.println("\n strings are equal ");
    }
    else
    {
      System.out.println("\n strings are  not equal ");
    }
  //StringBuffer  Functions
  StringBuffer sf = new StringBuffer("Coding Atharva");
  System.out.println("\n String = "+sf); // Will Print the string
  System.out.println("\n Length = "+sf.length() ); // total numbers of characters
  System.out.println("\n Length = "+sf.capacity() ); // total allocated capacity
  sf.setLength(6); // Sets the length and destroy the remaining characters
 System.out.println("\n After setting length String = "+sf);
 sf.setCharAt(0,'K'); // It will change character at specified position
System.out.println("\n SetCharAt String = "+sf);
  sf.setCharAt(0,'C');
  int a1 = 7;
    sf.append(a1); // It concatenates the other data type value
System.out.println("\n Appended String = "+sf);
  sf.insert(6," Atharva"); // used to insert one string or char or object
System.out.println("\n Inserted String = "+sf);
```

```
        sf.reverse();
       System.out.println("\n Reverse String = "+sf);
      }
            catch(Exception e)
              {
                        System.out.println(""+e);
              }
     }
   }
```

OUTPUT:-

```
enter the 1st String
manojkumar
 length of string is 10
 string in upper case MANOJKUMAR
 string in lower  case manojkumar
 char at 3rd index is  o
 replaced string is mbnojkumbr
 sub string from 2 to 5 index  is  noj
 enter the character to find index
a
 index of char is 1
 enter the character to find last index
a
 last index of char is  8
 enter the 2nd String
```

sonawane

concated string is manojkumarsonawane

strings are not equal

String = Coding Atharva

Length = 14

Length = 30

After setting length String = Coding

SetCharAt String = Koding

Appended String = Coding7

Inserted String = Coding Atharva7

Reverse String = 7avrahtA gnidoC

Assignment 3) Write a program that demonstrate inner class and static fields.

```
package assignment3;
class Outer
{
   int outer_x = 100;
   void test()
   {
      Inner inner = new Inner(); inner.display();
   }
   static int count=0;//will get memory only once and retain its value
   Outer()
   {
      count++;//incrementing the value of static variable
```

```
        System.out.println(count);
    }
  class Inner
{
    void display()
    {
        System.out.println("display: outer_x = " + outer_x);
    }
}
}
public class Assignment3
{
   public static void main(String[] args)
    {
        Outer outer = new Outer();
        outer.test();
        //creating objects
        Outer o1=new Outer();
        Outer o2=new Outer();
        Outer o3=new Outer();
    }
 }
```

OUTPUT:-

1

display: outer_x = 100

2

3

4

Assignment 4) Write a program that demonstrate inheritance, polymorphism.

```
package assignment4;
class Animal
{
   public void move()
   {
      System.out.println("Animals can move");
   }
}
class Dog extends Animal
{
   //Method Overriding
   public void move()
   {
      System.out.println("Dogs can walk and run");
   }
   //Method Overloading
   void add(int a,int b)
   {
```

```
        int s=a+b;
        System.out.println("Sum="+s);
    }
    void add(int a,int b,int c)
    {
        int s=a+b+c;
        System.out.println("Sum="+s);
    }
 }
public class Assignment4
{
    public static void main(String[] args)
    {
        Animal a =new Animal();
        Animal b =new Dog();
        a.move();
        b.move();

        Dog d=new Dog();
        d.add(10,20);
        d.add(10,20,30);
   }
}
```

OUTPUT:-

Animals can move

Dogs can walk and run

Sum=30

Sum=60

Assignment 5) Write a program that demonstrate 2D shapes on frames.

Steps:-

1. Right Click on your project- New-JFrame
2. Drag JPanel on JFrame
3. Drag JButtons on JPanel
4. Right Click on JButtons-Edit Text
5. Right Click on JButtons-Events-select event/methods you want and write appropriate code.
6. Code

```
package assignment5;
import java.awt.*;
import java.awt.geom.*;
public class NewJFrame extends javax.swing.JFrame {
    public NewJFrame() {
        initComponents();
    }
     @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
        jButton1 = new javax.swing.JButton();
        jButton2 = new javax.swing.JButton();
        jButton4 = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jButton1.setText("Rectangle");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
```

```
        }
    });

    jButton2.setText("Ellipse");
    jButton2.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton2ActionPerformed(evt);
        }
    });

    jButton4.setText("Line");
    jButton4.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton4ActionPerformed(evt);
        }
    });

    javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
    jPanel1.setLayout(jPanel1Layout);
    jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addContainerGap()
            .addComponent(jButton1)
            .addGap(18, 18, 18)
            .addComponent(jButton2)
            .addGap(18, 18, 18)
            .addComponent(jButton4)
            .addContainerGap(92, Short.MAX_VALUE))
    );
    jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addGap(27, 27, 27)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                .addComponent(jButton1)
```

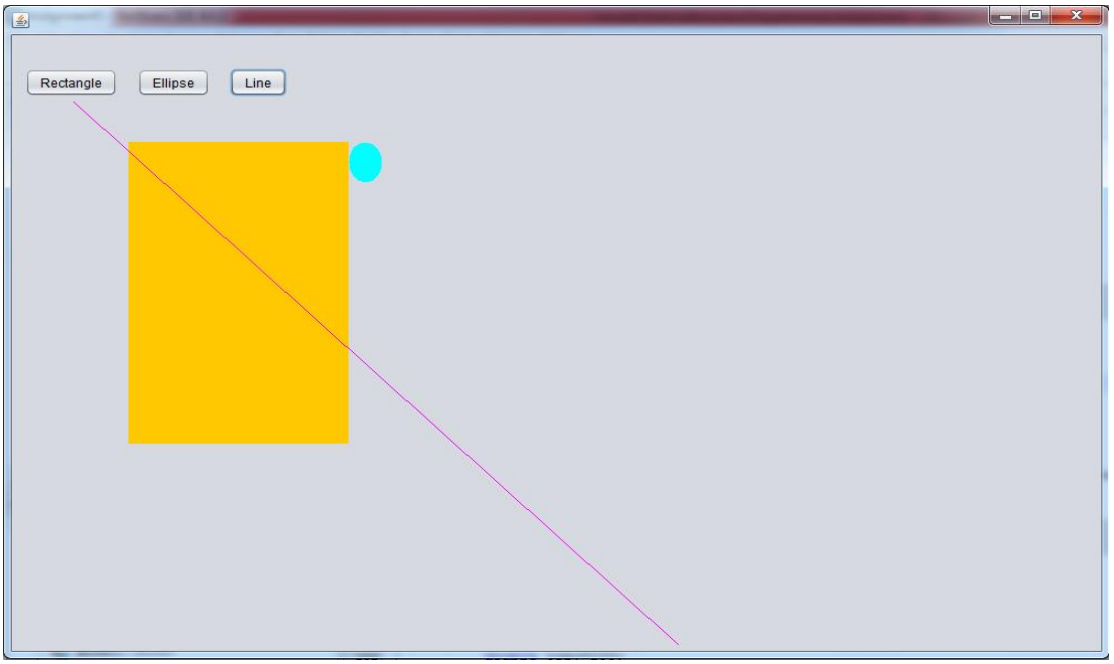
```
                .addComponent(jButton2)
                .addComponent(jButton4))
            .addContainerGap(228, Short.MAX_VALUE))
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(59, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addContainerGap())
        );

        pack();
    }// </editor-fold>
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        Graphics g1=jPanel1.getGraphics();
        Graphics2D g2  = (Graphics2D)g1;
            g2.setPaint(Color.ORANGE);
        double leftx=100;
        double topy=100;
        double width=100;
            double height=200;//For Squre width and height should be same
        Rectangle2D rect = new
Rectangle2D.Double(leftx,topy,leftx+width,topy+height);
            g2.fill(rect);
```

```
    }
    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
         Graphics g1=jPanel1.getGraphics();
        Graphics2D g2  = (Graphics2D)g1;
           g2.setPaint(Color.CYAN);
        double leftx=300;
        double topy=100;
        double width=30;
           double height=40;//For Circle width and height should be same
        Ellipse2D ellipse = new Ellipse2D.Double(leftx,topy,width,height);
           g2.fill(ellipse);
    }
    private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
         Graphics g1=jPanel1.getGraphics();
        Graphics2D g2  = (Graphics2D)g1;
           g2.setPaint(Color.MAGENTA);
        double startx=50;
        double starty=60;
        double endx=600;
           double endy=600;
        Line2D line = new Line2D.Double(startx,starty,endx,endy);
           g2.draw(line);
    }
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
```

```
                break;
            }
        }
    } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    }
    //</editor-fold>

    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new NewJFrame().setVisible(true);
        }
    });
}
// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JButton jButton4;
private javax.swing.JPanel jPanel1;
// End of variables declaration
}
```

7. Right Click in Code-Run File

OUTPUT:-



Assignment 6) Write a program that demonstrate color and fonts.

Steps:-

1. Right Click on your project- New-JFrame
2. Drag JPanel on JFrame
3. Drag JButton on JPanel
4. Right Click on JButton-Edit Text
5. Right Click on JButton-Events-select event/methods you want and write appropriate code.
6. Code

```
import java.awt.*;
import java.awt.geom.*;
import java.util.*;
public class NewJFrame extends javax.swing.JFrame {
    public NewJFrame() {
        initComponents();
       }
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {
```

```
        jPanel1 = new javax.swing.JPanel();
        jButton1 = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jButton1.setText("Click");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(213, 213, 213)
                .addComponent(jButton1)
                .addContainerGap(667, Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addComponent(jButton1)
                .addGap(0, 578, Short.MAX_VALUE))
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(20, 20, 20)
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
```

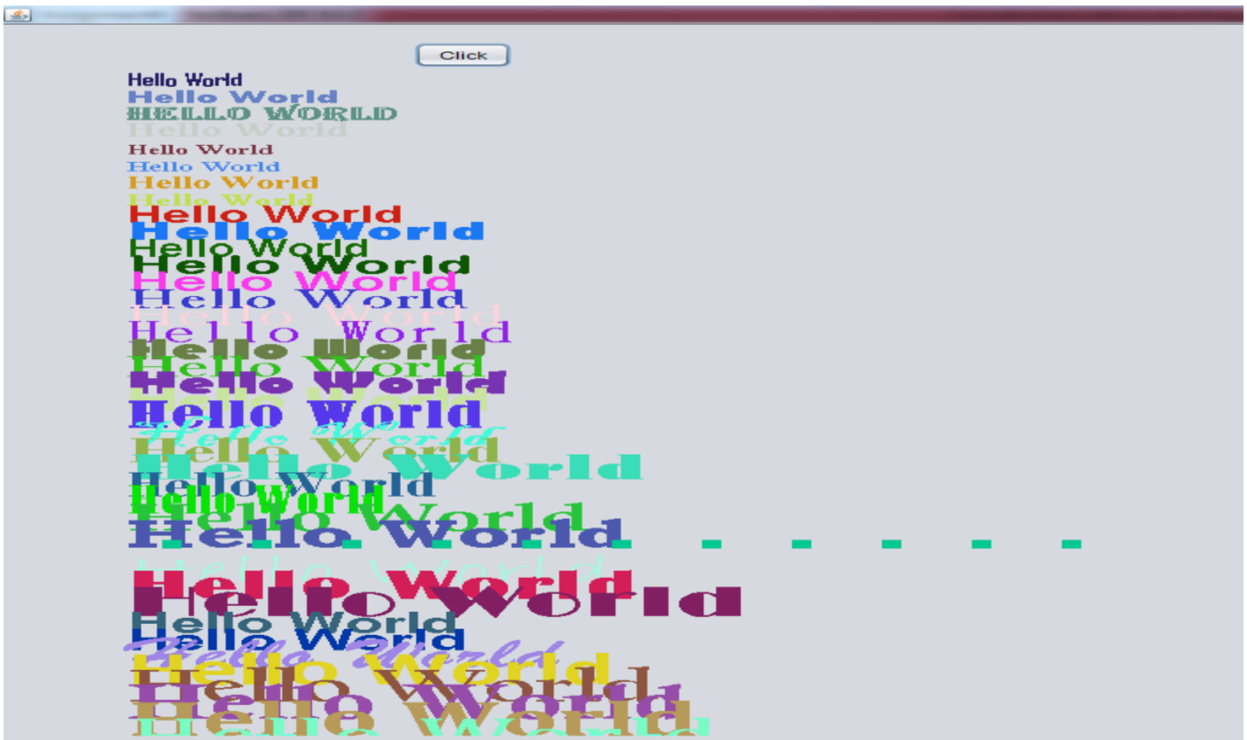
```
            .addContainerGap(55, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(22, 22, 22)
                .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addContainerGap())
        );

        pack();
    }// </editor-fold>

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        GraphicsEnvironment
ge=GraphicsEnvironment.getLocalGraphicsEnvironment();
            String s[]=ge.getAvailableFontFamilyNames();
        Graphics g1=jPanel1.getGraphics();
        Random rd = new Random();

        int y=50;
        int sz=20;
                    for(int i=0;i<s.length;i++)
                    {
                            Font f=new Font(s[i],Font.BOLD,sz);//Font.ITALIC
                            g1.setFont(f);

                    int r=rd.nextInt(255);
                    int g=rd.nextInt(255);
                    int b=rd.nextInt(255);
                    Color c=new Color(r,g,b);
                    g1.setColor(c);

                            g1.drawString("Hello World",50,y);
                    y=y+20;
                    sz=sz+1;
                }
    }
```

```
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
```

```
            }
        });
    }
    // Variables declaration - do not modify
    private javax.swing.JButton jButton1;
    private javax.swing.JPanel jPanel1;
    // End of variables declaration
}
```

7. Right Click in Code-Run File

OUTPUT:-



Assignment 7) Write a program to illustrate use of various swing components.

Steps:-

1. Right Click on your project- New-JFrame
2. Drag JPanel on JFrame
3. Drag various components
4. Right Click on components-Edit Text
5. Drag **ButtonGroup** component and set **buttonGroup** property of radiobuttons**.**
6. Right Click on jComboBox, jList1 and set **model** property.

7. Write Code on Button ActionPerformed

```
package assignment7;
public class NewJFrame extends javax.swing.JFrame {
    public NewJFrame() {
        initComponents();
    }
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        buttonGroup1 = new javax.swing.ButtonGroup();
        jPanel1 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();
        jTextField1 = new javax.swing.JTextField();
        jLabel2 = new javax.swing.JLabel();
        jScrollPane1 = new javax.swing.JScrollPane();
        jTextArea1 = new javax.swing.JTextArea();
        jLabel3 = new javax.swing.JLabel();
        jCheckBox1 = new javax.swing.JCheckBox();
        jCheckBox2 = new javax.swing.JCheckBox();
        jCheckBox3 = new javax.swing.JCheckBox();
        jButton1 = new javax.swing.JButton();
        jLabel4 = new javax.swing.JLabel();
        jRadioButton1 = new javax.swing.JRadioButton();
        jRadioButton2 = new javax.swing.JRadioButton();
        jLabel5 = new javax.swing.JLabel();
        jComboBox1 = new javax.swing.JComboBox();
        jLabel6 = new javax.swing.JLabel();
        jScrollPane2 = new javax.swing.JScrollPane();
        jList1 = new javax.swing.JList();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jLabel1.setText("Enter Rno");

        jLabel2.setText("Enter Name");

        jTextArea1.setColumns(20);
        jTextArea1.setRows(5);
```

```
        jScrollPane1.setViewportView(jTextArea1);

        jLabel3.setText("Favorite Color");

        jCheckBox1.setText("Red");

        jCheckBox2.setText("Green");

        jCheckBox3.setText("Blue");

        jButton1.setText("Click");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
            }
        });

        jLabel4.setText("Class");

        buttonGroup1.add(jRadioButton1);
        jRadioButton1.setText("MCA-1");

        buttonGroup1.add(jRadioButton2);
        jRadioButton2.setText("MCA-2");

        jLabel5.setText("Laptop");

        jComboBox1.setModel(new javax.swing.DefaultComboBoxModel(new String[] {
"HP", "Dell", "Lenovo" }));

        jLabel6.setText("Subject");

        jList1.setModel(new javax.swing.AbstractListModel() {
            String[] strings = { "C", "C++", "Java" };
            public int getSize() { return strings.length; }
            public Object getElementAt(int i) { return strings[i]; }
        });
        jScrollPane2.setViewportView(jList1);

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
```

```
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(35, 35, 35)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                    .addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TR
AILING, false)
                            .addComponent(jLabel6,
javax.swing.GroupLayout.Alignment.LEADING,
javax.swing.GroupLayout.DEFAULT_SIZE, 62, Short.MAX_VALUE)
                            .addComponent(jLabel5,
javax.swing.GroupLayout.Alignment.LEADING,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                        .addGap(44, 44, 44)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                            .addComponent(jComboBox1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jScrollPane2,
javax.swing.GroupLayout.PREFERRED_SIZE, 68,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jButton1,
javax.swing.GroupLayout.PREFERRED_SIZE, 92,
javax.swing.GroupLayout.PREFERRED_SIZE)))
                    .addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
```

```
                    .addComponent(jLabel1,
javax.swing.GroupLayout.PREFERRED_SIZE, 68,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED_SIZE, 68,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel3,
javax.swing.GroupLayout.PREFERRED_SIZE, 96,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel4,
javax.swing.GroupLayout.PREFERRED_SIZE, 50,
javax.swing.GroupLayout.PREFERRED_SIZE))

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                    .addGroup(jPanel1Layout.createSequentialGroup()
                       .addGap(25, 25, 25)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                            .addComponent(jCheckBox1)
                            .addComponent(jCheckBox2)
                            .addComponent(jCheckBox3)
                            .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 146,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE, 89,
javax.swing.GroupLayout.PREFERRED_SIZE)))
                    .addGroup(jPanel1Layout.createSequentialGroup()
                       .addGap(13, 13, 13)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                            .addComponent(jRadioButton1)
                            .addComponent(jRadioButton2))))))
            .addContainerGap(691, Short.MAX_VALUE))
      );
      jPanel1Layout.setVerticalGroup(
```

```
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addGap(55, 55, 55)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 29,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE, 29,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 62,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 25,
javax.swing.GroupLayout.PREFERRED_SIZE))

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(12, 12, 12)
                    .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE,
35, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(18, 18, 18)
                    .addComponent(jCheckBox1)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                    .addComponent(jCheckBox2)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                    .addComponent(jCheckBox3)))

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
```

```
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addGap(21, 21, 21)
                    .addComponent(jRadioButton1)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                    .addComponent(jRadioButton2)
                    .addGap(23, 23, 23))
                .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                    .addComponent(jLabel4, javax.swing.GroupLayout.PREFERRED_SIZE,
25, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addGap(36, 36, 36)))

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TR
AILING)
                .addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, 26,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jComboBox1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(18, 18, 18)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jLabel6, javax.swing.GroupLayout.PREFERRED_SIZE, 24,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jScrollPane2,
javax.swing.GroupLayout.PREFERRED_SIZE, 75,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(31, 31, 31)
            .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 37,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addContainerGap(64, Short.MAX_VALUE))
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
```

```
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(0, 0, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap())
        );

        pack();
    }// </editor-fold>
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        System.out.println("Rno= "+jTextField1.getText());
        System.out.println("Name= "+jTextArea1.getText());
        String color=" ";
        if (jCheckBox1.isSelected())
        color=color+" "+jCheckBox1.getText();
        if (jCheckBox2.isSelected())
        color=color+" "+jCheckBox2.getText();
        if (jCheckBox3.isSelected())
        color=color+" "+jCheckBox3.getText();

        System.out.println("Favorite Colors= "+color);

        String cl=" ";
        if (jRadioButton1.isSelected())
        cl=cl+" "+jRadioButton1.getText();
```

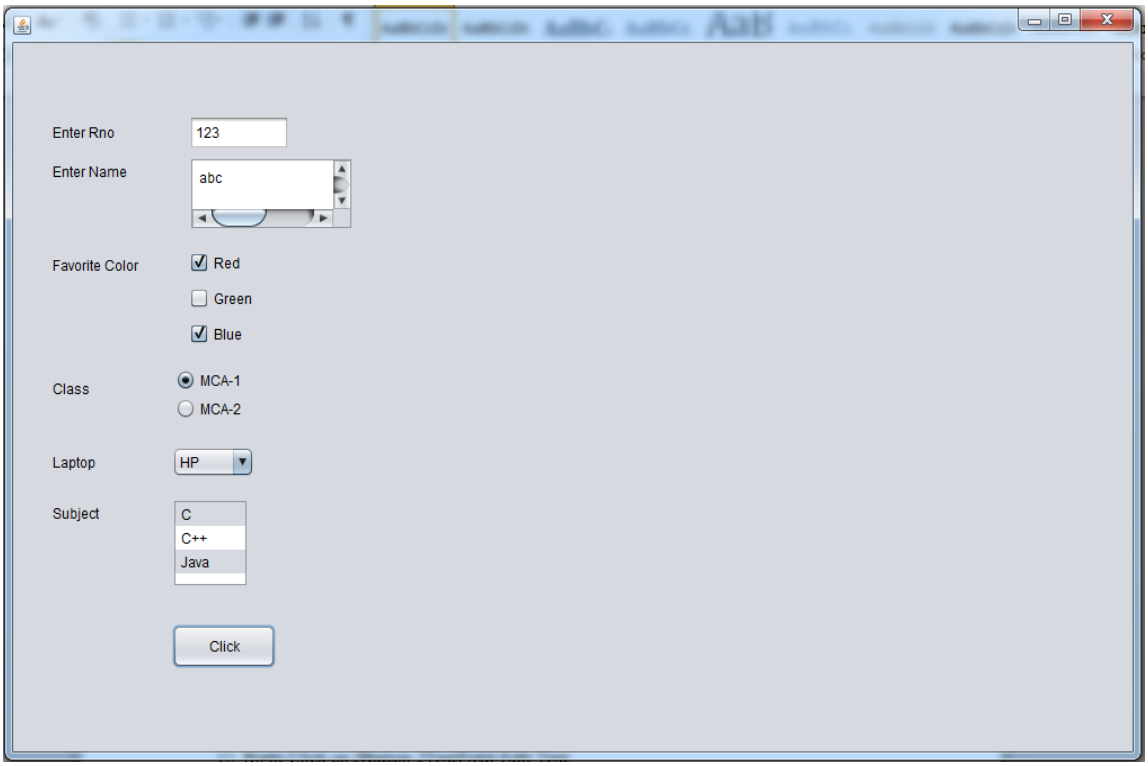
```
        else
        cl=cl+" "+jRadioButton2.getText();

        System.out.println("Class= "+cl);

        System.out.println("Laptop= "+jComboBox1.getSelectedItem().toString());

        System.out.println("Subjects= ");
        Object o[]=jList1.getSelectedValues();
        for(int i=0;i<o.length;i++)
        {
           System.out.println(o[i].toString());
        }

    }
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
```

```
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.ButtonGroup buttonGroup1;
    private javax.swing.JButton jButton1;
    private javax.swing.JCheckBox jCheckBox1;
    private javax.swing.JCheckBox jCheckBox2;
    private javax.swing.JCheckBox jCheckBox3;
    private javax.swing.JComboBox jComboBox1;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JLabel jLabel6;
    private javax.swing.JList jList1;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JRadioButton jRadioButton1;
    private javax.swing.JRadioButton jRadioButton2;
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JScrollPane jScrollPane2;
    private javax.swing.JTextArea jTextArea1;
    private javax.swing.JTextField jTextField1;
```

```
    // End of variables declaration
}
```

8. Right Click in Code-Run File

OUTPUT:-



Assignment 8) Write a program that demonstrate use of dialog box and menus.

Steps:-

1. Right Click on your project- New-JFrame
2. Drag JPanel on JFrame
3. Drag **JMenuBar**--Edit Text
4. Right Click on JMenuBar-select **Add From Palette-MenuItem/Separator**.
5. Right Click on MenuItem-select event/methods you want.
6. Drag **Popup Menu** on JPanel and add MenuItem, event/methods in it similarly.
7. Right Click on your JPanel, set **componentPopupMenu** property to your popup menu.
8. For User DialogBox- Drag **JDialog** on JPanel, Right Click on your JDialog-**setLayout,** Right Click on your JDialog-**Add From Palette-Swing Controls.**
9. Write Following Code

```
package assignment8;
import javax.swing.*;
import java.io.*;
import java.awt.*;
public class NewJFrame extends javax.swing.JFrame {
    public NewJFrame() {
        initComponents();
    }
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        jPopupMenu1 = new javax.swing.JPopupMenu();
        Red = new javax.swing.JMenuItem();
        Green = new javax.swing.JMenuItem();
        Blue = new javax.swing.JMenuItem();
        jDialog1 = new javax.swing.JDialog();
        jTextField1 = new javax.swing.JTextField();
        Click = new javax.swing.JButton();
        jPanel1 = new javax.swing.JPanel();
        jMenuBar1 = new javax.swing.JMenuBar();
        jMenu1 = new javax.swing.JMenu();
        jMenuItem1 = new javax.swing.JMenuItem();
        jSeparator1 = new javax.swing.JPopupMenu.Separator();
        jMenuItem2 = new javax.swing.JMenuItem();
        jSeparator2 = new javax.swing.JPopupMenu.Separator();
        jCheckBoxMenuItem1 = new javax.swing.JCheckBoxMenuItem();
        jSeparator3 = new javax.swing.JPopupMenu.Separator();
        jRadioButtonMenuItem1 = new javax.swing.JRadioButtonMenuItem();
        jSeparator5 = new javax.swing.JPopupMenu.Separator();
        jMenuItem6 = new javax.swing.JMenuItem();
        jSeparator4 = new javax.swing.JPopupMenu.Separator();
        jMenuItem4 = new javax.swing.JMenuItem();
        jMenu2 = new javax.swing.JMenu();
        jMenuItem3 = new javax.swing.JMenuItem();
        Red.setText("Red");
        Red.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                RedActionPerformed(evt);
            }
```

```
        });
        jPopupMenu1.add(Red);

        Green.setText("Green");
        Green.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                GreenActionPerformed(evt);
            }
        });
        jPopupMenu1.add(Green);
        Blue.setText("Blue");
        Blue.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                BlueActionPerformed(evt);
            }
        });
        jPopupMenu1.add(Blue);
        jDialog1.getContentPane().setLayout(new java.awt.FlowLayout());
        jTextField1.setText("jTextField1");
        jDialog1.getContentPane().add(jTextField1);
        Click.setText("Click");
        jDialog1.getContentPane().add(Click);
        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        jPanel1.setComponentPopupMenu(jPopupMenu1);
        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 958, Short.MAX_VALUE)
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 581, Short.MAX_VALUE)
        );

        jMenu1.setText("File");
        jMenu1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
            jMenu1ActionPerformed(evt);
        }
    });


jMenuItem1.setAccelerator(javax.swing.KeyStroke.getKeyStroke(java.awt.event.KeyEve
nt.VK_A, java.awt.event.InputEvent.CTRL_MASK));
    jMenuItem1.setText("InputDialogBox");
    jMenuItem1.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jMenuItem1ActionPerformed(evt);
        }
    });
    jMenu1.add(jMenuItem1);
    jMenu1.add(jSeparator1);


jMenuItem2.setAccelerator(javax.swing.KeyStroke.getKeyStroke(java.awt.event.KeyEve
nt.VK_B, java.awt.event.InputEvent.CTRL_MASK));
    jMenuItem2.setText("MessageDialogBox");
    jMenuItem2.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jMenuItem2ActionPerformed(evt);
        }
    });
    jMenu1.add(jMenuItem2);
    jMenu1.add(jSeparator2);


jCheckBoxMenuItem1.setAccelerator(javax.swing.KeyStroke.getKeyStroke(java.awt.eve
nt.KeyEvent.VK_C, java.awt.event.InputEvent.ALT_MASK));
    jCheckBoxMenuItem1.setSelected(true);
    jCheckBoxMenuItem1.setText("ConfirmDialogBox");
    jCheckBoxMenuItem1.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jCheckBoxMenuItem1ActionPerformed(evt);
        }
    });
    jMenu1.add(jCheckBoxMenuItem1);
    jMenu1.add(jSeparator3);
```

```
jRadioButtonMenuItem1.setAccelerator(javax.swing.KeyStroke.getKeyStroke(java.awt.event.KeyEvent.VK_D, java.awt.event.InputEvent.SHIFT_MASK));
        jRadioButtonMenuItem1.setSelected(true);
        jRadioButtonMenuItem1.setText("OptionDialogBox");
        jRadioButtonMenuItem1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jRadioButtonMenuItem1ActionPerformed(evt);
            }
        });
        jMenu1.add(jRadioButtonMenuItem1);
        jMenu1.add(jSeparator5);

        jMenuItem6.setText("FileChooser");
        jMenuItem6.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jMenuItem6ActionPerformed(evt);
            }
        });
        jMenu1.add(jMenuItem6);
        jMenu1.add(jSeparator4);

        jMenuItem4.setText("ColorChooser");
        jMenuItem4.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jMenuItem4ActionPerformed(evt);
            }
        });
        jMenu1.add(jMenuItem4);
        jMenuBar1.add(jMenu1);
        jMenu2.setText("Edit");
        jMenuItem3.setText("UserDialogBox");
        jMenuItem3.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jMenuItem3ActionPerformed(evt);
            }
        });
        jMenu2.add(jMenuItem3);
        jMenuBar1.add(jMenu2);
```

```
        setJMenuBar(jMenuBar1);
        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(28, 28, 28)
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(26, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(35, 35, 35)
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>
    private void jMenuItem1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        String n=JOptionPane.showInputDialog("Enter Name");
        System.out.println("Name="+n);
    }
    private void jMenuItem3ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        jDialog1.setTitle("This is my DialogBox");
        jDialog1.setSize(222,222);
        jDialog1.show();
    }
    private void jMenuItem2ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
```

```
        JOptionPane.showMessageDialog(null,"Success");

    }
    private void jCheckBoxMenuItem1ActionPerformed(java.awt.event.ActionEvent evt)
{
        // TODO add your handling code here:
        int i=JOptionPane.showConfirmDialog(null, "Are you Sure?");
        System.out.println(i);
    }
    private void jRadioButtonMenuItem1ActionPerformed(java.awt.event.ActionEvent
evt) {
        // TODO add your handling code here:
        String[] options = {"first", "second", "third"};
        int x = JOptionPane.showOptionDialog(null, "Select Option",
                "OptionDialogBox",JOptionPane.DEFAULT_OPTION,
JOptionPane.INFORMATION_MESSAGE, null, options, options[0]);
        System.out.println("Your Option is "+x);

    }
    private void RedActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        jPanel1.setBackground(Color.red);
    }
    private void GreenActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        jPanel1.setBackground(Color.green);
    }
    private void BlueActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        jPanel1.setBackground(Color.blue);
    }
    private void jMenu1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:

    }
    private void jMenuItem6ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        JFileChooser fc=new JFileChooser();
        int i=fc.showOpenDialog(this);
        if(i==JFileChooser.APPROVE_OPTION)
```

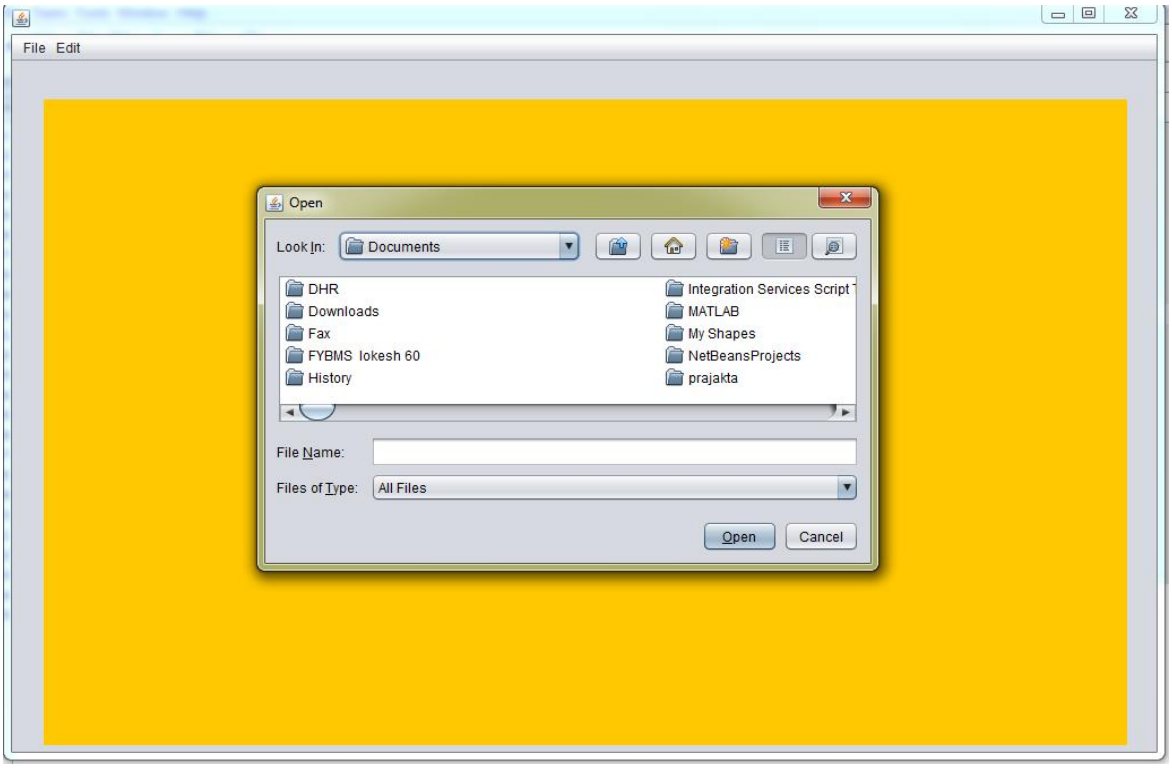
```
        {
            File f=fc.getSelectedFile();
            String filepath=f.getPath();
            System.out.println("You Selected "+filepath);
        }
    }
    private void jMenuItem4ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        Color c=JColorChooser.showDialog(this,"Select a color",Color.ORANGE);
        jPanel1.setBackground(c);

    }
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
```

```
java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
            }
        });
    }
    // Variables declaration - do not modify
    private javax.swing.JMenuItem Blue;
    private javax.swing.JButton Click;
    private javax.swing.JMenuItem Green;
    private javax.swing.JMenuItem Red;
    private javax.swing.JCheckBoxMenuItem jCheckBoxMenuItem1;
    private javax.swing.JDialog jDialog1;
    private javax.swing.JMenu jMenu1;
    private javax.swing.JMenu jMenu2;
    private javax.swing.JMenuBar jMenuBar1;
    private javax.swing.JMenuItem jMenuItem1;
    private javax.swing.JMenuItem jMenuItem2;
    private javax.swing.JMenuItem jMenuItem3;
    private javax.swing.JMenuItem jMenuItem4;
    private javax.swing.JMenuItem jMenuItem6;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPopupMenu jPopupMenu1;
    private javax.swing.JRadioButtonMenuItem jRadioButtonMenuItem1;
    private javax.swing.JPopupMenu.Separator jSeparator1;
    private javax.swing.JPopupMenu.Separator jSeparator2;
    private javax.swing.JPopupMenu.Separator jSeparator3;
    private javax.swing.JPopupMenu.Separator jSeparator4;
    private javax.swing.JPopupMenu.Separator jSeparator5;
```

```
    private javax.swing.JTextField jTextField1;
    // End of variables declaration
}
```

10. Right Click in Code-Run File

OUTPUT:-



Assignment 9) Write a program that demonstrate event handling for various types of events.

Steps:-

1. Right Click on your project- New-JFrame
2. Drag JPanel on JFrame
3. Drag JButton, JTextField on JPanel
4. Right Click on JButton, JTextField-Edit Text
5. Right Click on JButton, JTextField, JPanel-Events-select event/methods you want and write appropriate code.
6. Code

```
package assignment9;
import java.awt.Color;
public class NewJFrame extends javax.swing.JFrame {
    public NewJFrame() {
        initComponents();
    }
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
        jButton2 = new javax.swing.JButton();
        jTextField1 = new javax.swing.JTextField();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jPanel1.addMouseListener(new java.awt.event.MouseAdapter() {
            public void mouseClicked(java.awt.event.MouseEvent evt) {
                jPanel1MouseClicked(evt);
            }
        });

        jButton2.setText("Mouse");
        jButton2.addMouseListener(new java.awt.event.MouseAdapter() {
            public void mouseEntered(java.awt.event.MouseEvent evt) {
                jButton2MouseEntered(evt);
            }
            public void mouseExited(java.awt.event.MouseEvent evt) {
                jButton2MouseExited(evt);
            }
        });

        jTextField1.addKeyListener(new java.awt.event.KeyAdapter() {
            public void keyTyped(java.awt.event.KeyEvent evt) {
                jTextField1KeyTyped(evt);
            }
        });

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
```

```
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(53, 53, 53)
                .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, 112,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(81, 81, 81)
                .addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED_SIZE,
95, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(635, Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(24, 24, 24)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                    .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE,
33, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE, 33,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addContainerGap(541, Short.MAX_VALUE))
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(19, Short.MAX_VALUE))
        );
```

```
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(28, Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>

    private void jButton2MouseEntered(java.awt.event.MouseEvent evt) {
        // TODO add your handling code here:
        jPanel1.setBackground(Color.red);
    }
    private void jButton2MouseExited(java.awt.event.MouseEvent evt) {
        // TODO add your handling code here:
         jPanel1.setBackground(Color.GREEN);
    }
    private void jTextField1KeyTyped(java.awt.event.KeyEvent evt) {
        // TODO add your handling code here:
         char a=evt.getKeyChar();
                        if(a=='r' || a=='R')
                        {
                                jPanel1.setBackground(Color.red);

                        }
                else if(a=='g' || a=='G')
                        {
                          jPanel1.setBackground(Color.GREEN);

                        }
                else
                {
                      jPanel1.setBackground(Color.BLACK);
                }
    }
 int count=0;
```

```
    private void jPanel1MouseClicked(java.awt.event.MouseEvent evt) {
        // TODO add your handling code here:
        count++;
        if(count==1)
            jPanel1.setBackground(Color.RED);
        else if(count==2)
            jPanel1.setBackground(Color.GREEN);
        else if(count==3)
            jPanel1.setBackground(Color.BLUE);
        else
            count=0;
    }
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
```

```
java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JButton jButton2;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JTextField jTextField1;
    // End of variables declaration
}
```

7. Right Click in Code-Run File

OUTPUT:-

Assignment 10) Write a program to illustrate multithreading.

```
package assignment10;

class TestSleepMethod1 extends Thread

{

   public void run()

   {

      for(int i=1;i<=5;i++)

      {

         try

         {

            System.out.println(i);

            Thread.sleep(500);

         }
```

```
            catch(InterruptedException e)
            {
                System.out.println(e);
            }
          }
    }
}
public class Assignment10
{
    public static void main(String[] args)
    {
        TestSleepMethod1 t1=new TestSleepMethod1();
        TestSleepMethod1 t2=new TestSleepMethod1();
        TestSleepMethod1 t3=new TestSleepMethod1();
        t1.start();
        t2.start();
        t3.start();
    }
 }
```

OUTPUT:-

```
1
1
1
2
2
```

2

3

3

3

4

4

4

5

5

5

Assignment 11) Write a program to illustrate exception handling.

```
package assignment11;
public class Assignment11
{
   public static void main(String[] args)
   {
      try
      {
         int i=2/0;
         int a[]=new int[5];
         a[10]=30;
      }
      catch(ArrayIndexOutOfBoundsException e)
      {
         System.out.println("ArrayIndexOutOfBoundsException");
```

```
        }
        catch(ArithmeticException e)
        {
            System.out.println("ArithmeticException");
        }
        catch(Exception e)
        {
            System.out.println("Exception");
        }
        finally
        {
            System.out.println("Finally");
        }
    }
 }
```

OUTPUT:-

ArithmeticException

Finally

Assignment 12) Write a program to demonstrate use of File class.

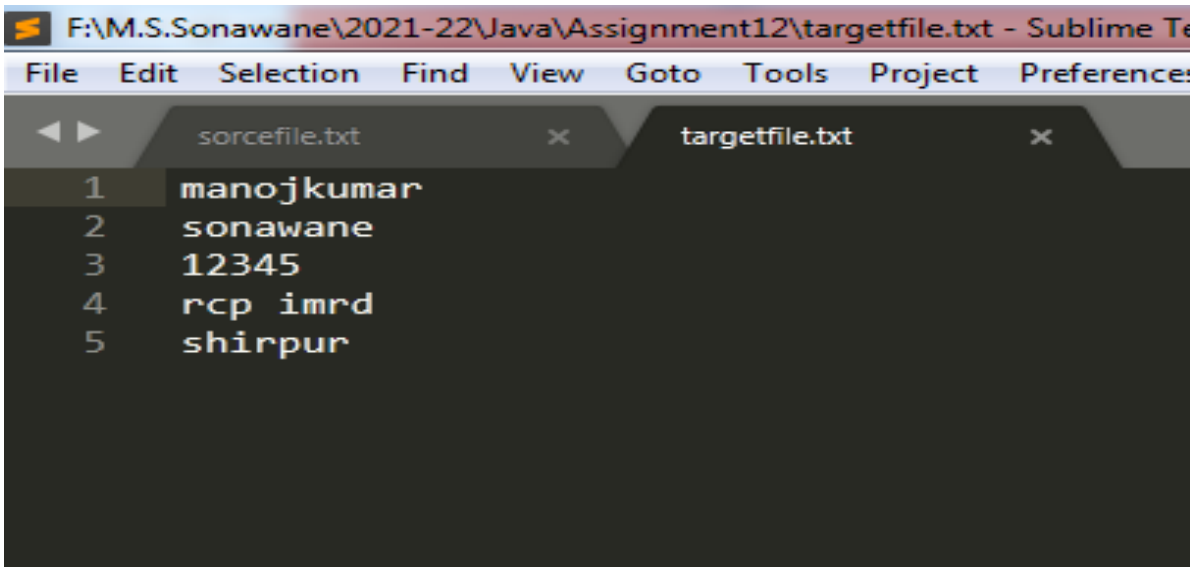
```
package assignment12;
import java.io.*;
public class Assignment12
{
    public static void main(String[] args)
    {
```

```
FileInputStream sourceStream = null; //FileReader for char by char
FileOutputStream targetStream = null; //FileWriter for char by char
try
{
   sourceStream= new FileInputStream("sorcefile.txt");
   targetStream= new FileOutputStream("targetfile.txt");
   // Reading source file and writing
   // content to target file byte by byte
   int temp;
   while ((temp = sourceStream.read())!= -1)
   {
      targetStream.write(temp);
   }
   sourceStream.close();
   targetStream.close();

}
catch(Exception e)
{
   System.out.println("Exception");
}
 //File class
 File f = new File("sorcefile.txt");
 System.out.println("The name of the file is: " + f.getName());
 System.out.println("The absolute path of the file is: " + f.getAbsolutePath());
```

```
        System.out.println("Is file writeable?: " + f.canWrite());
        System.out.println("Is file readable " + f.canRead());
        System.out.println("The size of the file in bytes is: " + f.length());
        System.out.println("File Exist "+f.exists());
        System.out.println("Is File or Directory "+f.isFile());
        System.out.println("Is File or Directory "+f.isDirectory());
        System.out.println("Is Hidden "+f.isHidden());
        System.out.println("Last Modified Time: " + f.lastModified());
      }
    }
```

OUTPUT:

```
The name of the file is: sorcefile.txt
The absolute path of the file is: F:\M.S.Sonawane\2021-22\Java\Assignment12\sorcefile.txt
Is file writeable?: true
Is file readable true
The size of the file in bytes is: 46
File Exist true
Is File or Directory true
Is File or Directory false
Is Hidden false
Last Modified Time: 1642157554913
```



Assignment 13) Write a program that demonstrate JDBC on application.

Steps:-

1. Right Click on your project- New-JFrame
2. Drag JPanel on JFrame
3. Drag 2 JLabels, 2 JTextFields, 4 JButtons on JPanel
4. Right Click on all-Edit Text
5. Create Database
6. Create DSN and connect it to Database.
7. Connect DSN to your application in NetBeans.
8. Right Click on 4 JButtons-Events-select event/methods you want and write appropriate code.
9. Code

```
package assignment13;
import java.sql.*;
public class NewJFrame extends javax.swing.JFrame {
    public NewJFrame() {
        initComponents();
    }
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
```

```
jLabel1 = new javax.swing.JLabel();
jTextField1 = new javax.swing.JTextField();
jLabel2 = new javax.swing.JLabel();
jTextField2 = new javax.swing.JTextField();
jButton1 = new javax.swing.JButton();
jButton2 = new javax.swing.JButton();
jButton3 = new javax.swing.JButton();
jButton4 = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

jLabel1.setText("RNo");

jLabel2.setText("Name");

jButton1.setText("Insert");
jButton1.addActionListener(new java.awt.event.ActionListener() {
   public void actionPerformed(java.awt.event.ActionEvent evt) {
      jButton1ActionPerformed(evt);
   }
});

jButton2.setText("Update");
jButton2.addActionListener(new java.awt.event.ActionListener() {
   public void actionPerformed(java.awt.event.ActionEvent evt) {
      jButton2ActionPerformed(evt);
   }
});

jButton3.setText("Delete");
jButton3.addActionListener(new java.awt.event.ActionListener() {
   public void actionPerformed(java.awt.event.ActionEvent evt) {
      jButton3ActionPerformed(evt);
   }
});

jButton4.setText("Select");
jButton4.addActionListener(new java.awt.event.ActionListener() {
   public void actionPerformed(java.awt.event.ActionEvent evt) {
      jButton4ActionPerformed(evt);
```

```
        }
    });

    javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
    jPanel1.setLayout(jPanel1Layout);
    jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addGap(83, 83, 83)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING, false)
                .addComponent(jButton1, javax.swing.GroupLayout.DEFAULT_SIZE, 72,
Short.MAX_VALUE)
                .addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 53,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE,
83, javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                    .addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE,
81, javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                    .addComponent(jButton4, javax.swing.GroupLayout.PREFERRED_SIZE,
89, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addComponent(jTextField2,
javax.swing.GroupLayout.PREFERRED_SIZE, 106,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE, 74,
javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
            .addContainerGap(569, Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(56, 56, 56)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                    .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 23,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE, 23,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(33, 33, 33)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                    .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 26,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jTextField2,
javax.swing.GroupLayout.PREFERRED_SIZE, 26,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(62, 62, 62)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING, false)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                        .addComponent(jButton2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                        .addComponent(jButton3, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                        .addComponent(jButton4, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                    .addComponent(jButton1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                .addContainerGap(362, Short.MAX_VALUE))
```

```
        );

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addContainerGap())
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(42, Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try
            {
            Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
           Connection c=DriverManager.getConnection("jdbc:odbc:dsn1"," "," ");
            Statement st=c.createStatement();;
            String s1=jTextField1.getText();
            int i=Integer.parseInt(s1);
            String s2=jTextField2.getText();
            int count=st.executeUpdate("insert into student values("+i+",'"+s2+"')");
            System.out.println("Record Inserted "+count);
            }
        catch(Exception e)
```

```
            {
                System.out.println("Insert Exp "+e);
            }
    }
    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try
            {
            Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
           Connection c=DriverManager.getConnection("jdbc:odbc:dsn1"," "," ");
            Statement st=c.createStatement();;
            String s1=jTextField1.getText();
            int i=Integer.parseInt(s1);
            String s2=jTextField2.getText();
            int count=st.executeUpdate("update student set sname='"+s2+"' where
rno="+i+"");
            System.out.println("Record Updated "+count);
             }
        catch(Exception e)
            {
                System.out.println("Update Exp "+e);
            }
    }
    private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try
            {
            Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
           Connection c=DriverManager.getConnection("jdbc:odbc:dsn1"," "," ");
            Statement st=c.createStatement();;
            String s1=jTextField1.getText();
            int i=Integer.parseInt(s1);
            int count=st.executeUpdate("delete * from student where rno="+i+"");
            System.out.println("Record Deleted "+count);
             }
        catch(Exception e)
            {
                System.out.println("Delete Exp "+e);
            }
    }
```

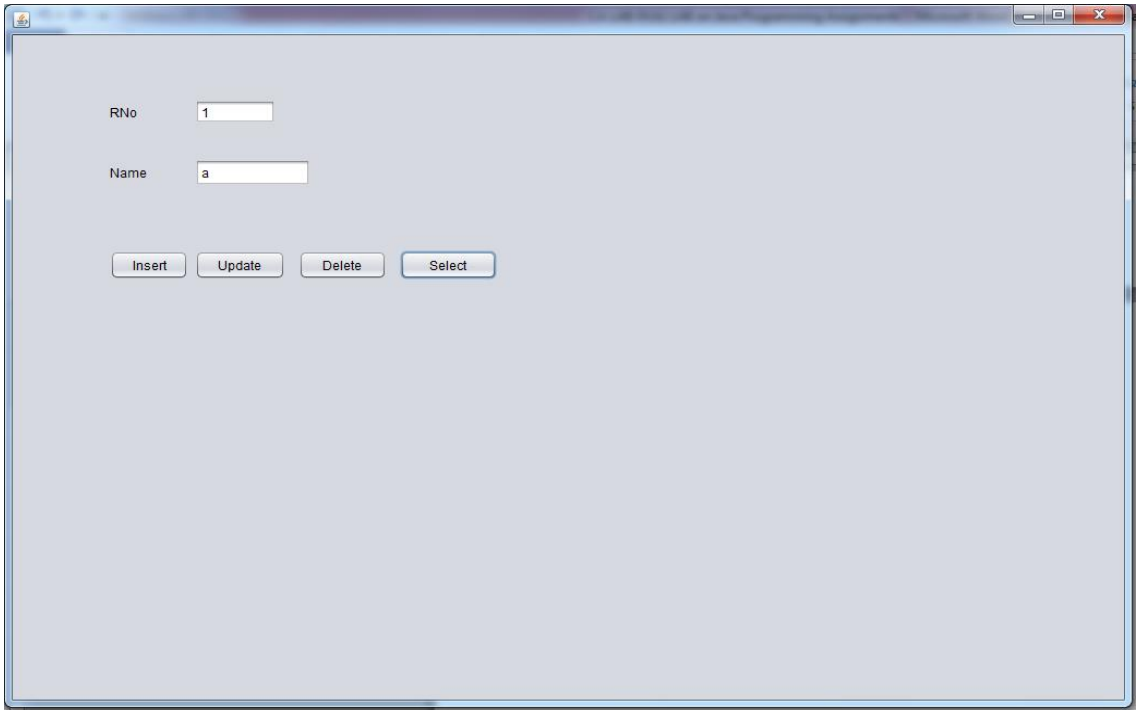
```
    private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try
          {
          Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
          Connection c=DriverManager.getConnection("jdbc:odbc:dsn1"," "," ");
          Statement st=c.createStatement();;
          String s1=jTextField1.getText();
          int i=Integer.parseInt(s1);
          ResultSet rs=st.executeQuery("select * from student where rno="+i+"");
          while(rs.next())
          {
                jTextField2.setText(rs.getString("sname"));
           }
          }
        catch(Exception e)
            {
               System.out.println("Select Exp "+e);
            }

    }

    /**
     * @param args the command line arguments
     */
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
```

```
            }
        }
    } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(NewJFrame.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
    }
    //</editor-fold>

    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new NewJFrame().setVisible(true);
        }
    });
}

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JButton jButton3;
private javax.swing.JButton jButton4;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JPanel jPanel1;
private javax.swing.JTextField jTextField1;
private javax.swing.JTextField jTextField2;
// End of variables declaration
```

}

10. Right Click in Code-Run File

OUTPUT:-



Assignment 14) Write a program that demonstrates package creation and use in program.

```
package assignment14;
import mypackage.NewClass;
public class Assignment14
{
   public static void main(String[] args)
   {
      NewClass n=new NewClass();
      n.show();
   }
```

```
  }
//Create mypackage, Create NewClass
package mypackage;
public class NewClass
{
   public void show()
   {
      System.out.println("Show Method is Called");
   }
}
```

OUTPUT:-

```
Show Method is Called
```