

DATA STRUCTURE

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KODLKF380

BATCH – JANUARY 24TH

PROJECT NAME – MINIPROJECT

HOME

```
/*
```

```
 * To change this license header, choose License Headers in Project Properties.
```

```
 * To change this template file, choose Tools | Templates
```

```
 * and open the template in the editor.
```

```
*/
```

```
/**
```

```
 *
```

```
 * @author user
```

```
*/
```

```
public class Home extends javax.swing.JFrame {
```

```
    /**
```

```
     * Creates new form Home
```

```
    */
```

```
    public Home() {
```

```
        initComponents();
```

```
    }
```

```
    /**
```

```
     * This method is called from within the constructor to initialize the form.
```

```
     * WARNING: Do NOT modify this code. The content of this method is always
```

```

* regenerated by the Form Editor.

*/
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jPanel1 = new javax.swing.JPanel();
    jLabel1 = new javax.swing.JLabel();
    array = new javax.swing.JButton();
    queue = new javax.swing.JButton();
    stack = new javax.swing.JButton();
    cqueue = new javax.swing.JButton();
    sll = new javax.swing.JButton();
    doublylinkedlist = new javax.swing.JButton();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    jPanel1.setBackground(new java.awt.Color(255, 153, 204));

    jLabel1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
    jLabel1.setForeground(new java.awt.Color(51, 51, 255));
    jLabel1.setText("CHOOSE A DATASTRUCTURE");

    array.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
    array.setForeground(new java.awt.Color(204, 0, 204));
    array.setText("ARRAY");
    array.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            arrayActionPerformed(evt);
        }
    }

```

```
});
```

```
queue.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
queue.setForeground(new java.awt.Color(204, 0, 204));
queue.setText("QUEUE");
queue.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        queueActionPerformed(evt);
    }
});
```

```
stack.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
stack.setForeground(new java.awt.Color(204, 0, 204));
stack.setText("STACK");
stack.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        stackActionPerformed(evt);
    }
});
```

```
cqueue.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
cqueue.setForeground(new java.awt.Color(204, 0, 204));
cqueue.setText("CIRCULARQUEUE");
cqueue.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        cqueueActionPerformed(evt);
    }
});
```

```
sll.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
sll.setForeground(new java.awt.Color(255, 0, 255));
```

```
sll.setText("SINGLYLINKEDLIST");

sll.addActionListener(new java.awt.event.ActionListener() {

    public void actionPerformed(java.awt.event.ActionEvent evt) {

        sllActionPerformed(evt);

    }

});
```

```
doublylinkedlist.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
doublylinkedlist.setForeground(new java.awt.Color(204, 0, 204));
doublylinkedlist.setText("DOUBLYLINKEDLIST");
doublylinkedlist.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        doublylinkedlistActionPerformed(evt);
    }
});
```

```

javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(
    jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
            .addGap(65, 65, 65)
            .addComponent(stack)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addComponent(queue)
            .addGap(75, 75, 75)
            .addGroup(jPanel1Layout.createSequentialGroup()

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

```

```

        .addGap(124, 124, 124)
        .addComponent(jLabel1))
    .addGroup(jPanel1Layout.createSequentialGroup())
        .addGap(172, 172, 172)
        .addComponent(array)))
    .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup())
        .addGap(34, 34, 34)
        .addComponent(cqueue)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 62,
Short.MAX_VALUE)
        .addComponent(sll)
        .addGap(22, 22, 22))
    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup())
        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addComponent(doublylinkedlist)
        .addGap(118, 118, 118))
);
jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(jPanel1Layout.createSequentialGroup())
        .addGap(27, 27, 27)
        .addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE, 28, Short.MAX_VALUE)
        .addGap(10, 10, 10)
        .addComponent(array)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
        .addComponent(stack)
        .addComponent(queue))

```

```

        .addGap(37, 37, 37)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(cqueue)
            .addComponent(sll))
        .addGap(44, 44, 44)
        .addComponent(doublylinkedlist)
        .addGap(51, 51, 51))
    );

```

```

    getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 400,
300));

```

```

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

```

```

    private void cqueueActionPerformed(java.awt.event.ActionEvent evt) {
//PLACE CIRCULARQUEUE WINDOW OPENING CODE HERE
new CircularQueue().setVisible(true);// TODO add your handling code here:
    }

```

```

    private void arrayActionPerformed(java.awt.event.ActionEvent evt) {
//PLACE ARRAY WINDOW OPENING CODE HERE
Array a=new Array();
a.setVisible(true);
new Array().setVisible(true);
// TODO add your handling code here:
    }

```

```

    private void queueActionPerformed(java.awt.event.ActionEvent evt) {
//PLACE QUEUE WINDOW OPENING CODE HERE
new Queue().setVisible(true);// TODO add your handling code here:

```

```
}
```

```
private void sllActionPerformed(java.awt.event.ActionEvent evt) {  
//PLACE SINGLYLINKEDLINK WINDOW OPENING CODE HERE  
new Singlylinkedlist().setVisible(true);// TODO add your handling code here:  
}
```

```
private void stackActionPerformed(java.awt.event.ActionEvent evt) {  
//PLACE STACK WINDOW OPENING CODE HERE  
new Stack().setVisible(true);  
// TODO add your handling code here:  
}
```

```
private void doublylinkedlistActionPerformed(java.awt.event.ActionEvent evt) {  
//PLACE DOUBLYLINKEDLINK WINDOW OPENING CODE HERE  
new Doublylinkedlist().setVisible(true);// TODO add your handling code here:  
}
```

```
/**  
 * @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(Home.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
} catch (InstantiationException ex) {
    java.util.logging.Logger.getLogger(Home.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
} catch (IllegalAccessException ex) {
    java.util.logging.Logger.getLogger(Home.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
} catch (javax.swing.UnsupportedLookAndFeelException ex) {
    java.util.logging.Logger.getLogger(Home.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 Home().setVisible(true);
    }
});
}

```

```

// Variables declaration - do not modify
private javax.swing.JButton array;
private javax.swing.JButton cqueue;
private javax.swing.JButton doublylinkedlist;
private javax.swing.JLabel jLabel1;

```



```

private javax.swing.JPanel jPanel1;

private javax.swing.JButton queue;

private javax.swing.JButton sll;

private javax.swing.JButton stack;

// End of variables declaration

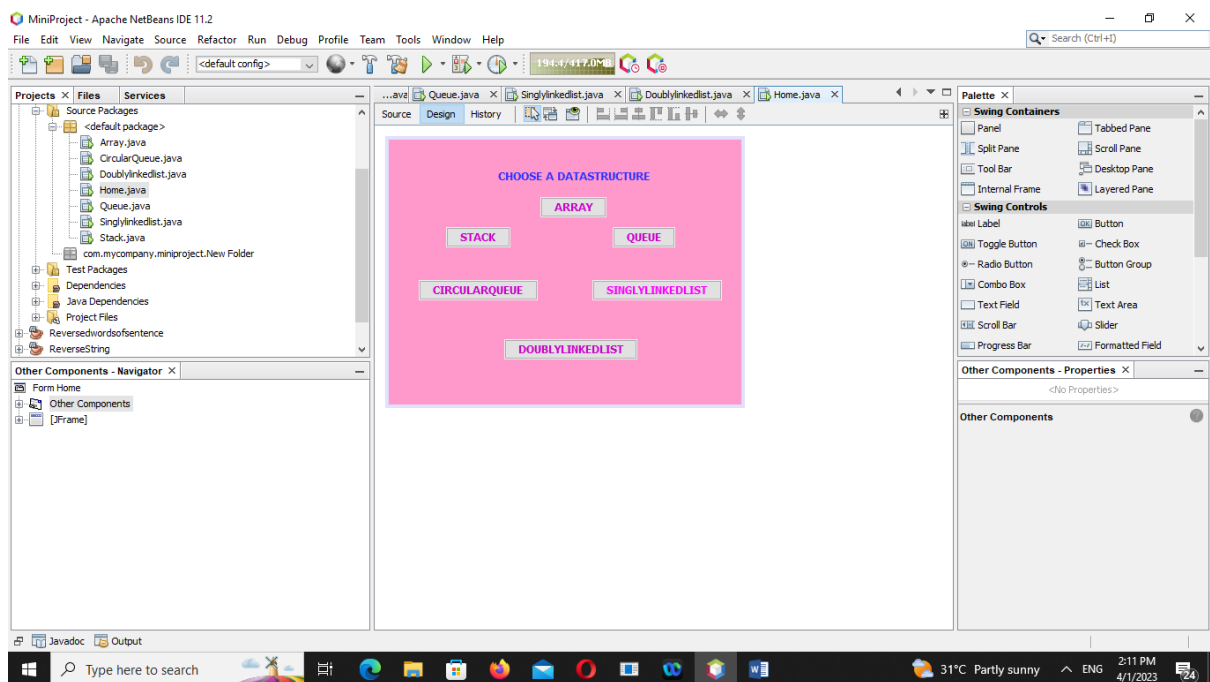
```

```

}

```

OUTPUT



ARRAY

```

import javax.swing.JOptionPane;

```

```

/*

```

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- * To change this template file, choose Tools | Templates
- * and open the template in the editor.

```

private int len;

```

```

*/

/**
 *
 * @author user
 */
public class Array extends javax.swing.JFrame {

    /**
     * Creates new form Array
     */
    public Array() {
        initComponents();
    }
    private int arr[];

    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();
        jLabel2 = new javax.swing.JLabel();
        length = new javax.swing.JTextField();
        create = new javax.swing.JButton();
        jLabel3 = new javax.swing.JLabel();
    }

```

```

element = new javax.swing.JTextField();

jLabel4 = new javax.swing.JLabel();

insertposition = new javax.swing.JTextField();

insert = new javax.swing.JButton();

jLabel5 = new javax.swing.JLabel();

deleteposition = new javax.swing.JTextField();

delete = new javax.swing.JButton();

display = new javax.swing.JButton();

displaybox = new javax.swing.JTextField();


setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());


jPanel1.setBackground(new java.awt.Color(255, 153, 153));


jLabel1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel1.setForeground(new java.awt.Color(153, 0, 153));
jLabel1.setText("ARRAY DATASTRUCTURE");


jLabel2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel2.setForeground(new java.awt.Color(153, 0, 153));
jLabel2.setText("ENTER ARRAY LENGTH");


create.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
create.setForeground(new java.awt.Color(153, 0, 153));
create.setText("CREATE ARRAY");
create.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        createActionPerformed(evt);
    }
});

```

```
jLabel3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel3.setForeground(new java.awt.Color(153, 0, 153));
jLabel3.setText("ENTER AN INTEGER ELEMENT");
```

```
element.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        elementActionPerformed(evt);
    }
});
```

```
jLabel4.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel4.setForeground(new java.awt.Color(153, 0, 153));
jLabel4.setText("POSITION");
```

```
insertposition.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertpositionActionPerformed(evt);
    }
});
```

```
insert.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
insert.setForeground(new java.awt.Color(153, 0, 153));
insert.setText("INSERT");
insert.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertActionPerformed(evt);
    }
});
```

```
jLabel5.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
```

```
jLabel5.setForeground(new java.awt.Color(153, 0, 153));  
jLabel5.setText("DELETE POSITION");
```

```
deleteposition.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        deletepositionActionPerformed(evt);  
    }  
});
```

```
delete.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N  
delete.setForeground(new java.awt.Color(153, 0, 153));  
delete.setText("DELETE");  
delete.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        deleteActionPerformed(evt);  
    }  
});
```

```
display.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N  
display.setForeground(new java.awt.Color(153, 0, 153));  
display.setText("DISPLAY");  
display.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        displayActionPerformed(evt);  
    }  
});
```

```
displaybox.setBackground(new java.awt.Color(153, 255, 204));  
displaybox.setForeground(new java.awt.Color(204, 51, 0));  
displaybox.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
        displayboxActionPerformed(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(119, 119, 119)
            .addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE,
                javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addGap(130, 130, 130))
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE,
                javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
            .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE, 37,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
            .addComponent(jLabel4, javax.swing.GroupLayout.DEFAULT_SIZE,
                javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
            .addComponent(insertposition, javax.swing.GroupLayout.PREFERRED_SIZE, 26,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
            .addComponent(insert, javax.swing.GroupLayout.DEFAULT_SIZE,
                javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addGap(161, 161, 161)
            .addComponent(deleteposition, javax.swing.GroupLayout.PREFERRED_SIZE, 63,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(11, 11, 11))
    );
```

```

        .addComponent(delete, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addGap(33, 33, 33))

    .addGroup(jPanel1Layout.createSequentialGroup())

    .addContainerGap()

    .addComponent(jLabel5)

    .addGap(1, 1, 1)

    .addComponent(display, javax.swing.GroupLayout.PREFERRED_SIZE, 0, Short.MAX_VALUE)

    .addGap(145, 145, 145))

    .addGroup(jPanel1Layout.createSequentialGroup())

    .addGap(18, 18, 18)

    .addComponent(jLabel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

    .addGap(88, 88, 88)

    .addComponent(length)

    .addGap(80, 80, 80))

    .addGroup(jPanel1Layout.createSequentialGroup())

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(131, 131, 131)

            .addComponent(create))

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(65, 65, 65)

            .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE, 280,
javax.swing.GroupLayout.PREFERRED_SIZE)))

        .addGap(0, 0, Short.MAX_VALUE))

    );

    jPanel1Layout.setVerticalGroup(

        jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(24, 24, 24)

```

```

        .addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addGap(18, 18, 18)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(length, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

        .addComponent(create)

        .addGap(18, 18, 18)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel4, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addComponent(insertposition, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(insert, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

        .addGap(24, 24, 24)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(deleteposition, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel5)

        .addComponent(delete, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

        .addGap(18, 18, 18)

        .addComponent(display, javax.swing.GroupLayout.DEFAULT_SIZE, 29, Short.MAX_VALUE)

        .addGap(18, 18, 18)

```



```
        .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE,  
        javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)  
        .addGap(61, 61, 61))  
    );
```

```
    getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 400,  
340));
```

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

```
    private void createActionPerformed(java.awt.event.ActionEvent evt) {  
        //code for creating array  
        //String len=length.getText();  
        //int l=Integer.valueOf(len);  
        int len=Integer.valueOf(length.getText());  
        arr=new int[len];  
        String message="Array of length"+len+"created";  
        JOptionPane.showMessageDialog(rootPane, message);  
  
    }
```

```
    private void insertActionPerformed(java.awt.event.ActionEvent evt) {  
        //code for insertion  
        int elem=Integer.valueOf(element.getText());  
        int pos=Integer.valueOf(insertposition.getText());  
        arr[pos]=elem;  
        String message="Element"+elem+"Inserted @ position"+pos;  
        JOptionPane.showMessageDialog(rootPane,message);  
        element.setText("");  
        insertposition.setText("");
```

```
//TODO add your handling code here
```

```
}
```

```
private void deleteActionPerformed(java.awt.event.ActionEvent evt) {
```

```
//code for deletion
```

```
int pos=Integer.valueOf(deleteposition.getText());
```

```
arr[pos]=0;
```

```
String message="Element deleted @ position"+pos;
```

```
JOptionPane.showMessageDialog(rootPane,message);
```

```
deleteposition.setText("");// TODO add your handling code here:
```

```
}
```

```
private void insertpositionActionPerformed(java.awt.event.ActionEvent evt) {
```

```
// TODO add your handling code here:
```

```
}
```

```
private void deletepositionActionPerformed(java.awt.event.ActionEvent evt) {
```

```
// TODO add your handling code here:
```

```
}
```

```
private void displayActionPerformed(java.awt.event.ActionEvent evt) {
```

```
//code for display
```

```
String msg="";
```

```
for(int i=0;i<=arr.length-1;i++)
```

```
{
```

```
msg=msg+" "+arr[i];
```

```
}
```

```
displaybox.setText(msg);
```

```
// TODO add your handling code here:
```

```
}
```

```

private void elementActionPerformed(java.awt.event.ActionEvent evt) {

    // TODO add your handling code here:

}

private void displayboxActionPerformed(java.awt.event.ActionEvent evt) {

    // TODO add your handling code here:

}

/**
 * @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(Array.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (InstantiationException ex) {
        java.util.logging.Logger.getLogger(Array.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
    } catch (IllegalAccessException ex) {

```

```
        java.util.logging.Logger.getLogger(Array.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
```

```
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
```

```
        java.util.logging.Logger.getLogger(Array.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 Array().setVisible(true);
```

```
    }
```

```
});
```

```
}
```

```
// Variables declaration - do not modify
```

```
private javax.swing.JButton create;
```

```
private javax.swing.JButton delete;
```

```
private javax.swing.JTextField deleteposition;
```

```
private javax.swing.JButton display;
```

```
private javax.swing.JTextField displaybox;
```

```
private javax.swing.JTextField element;
```

```
private javax.swing.JButton insert;
```

```
private javax.swing.JTextField insertposition;
```

```
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;
```

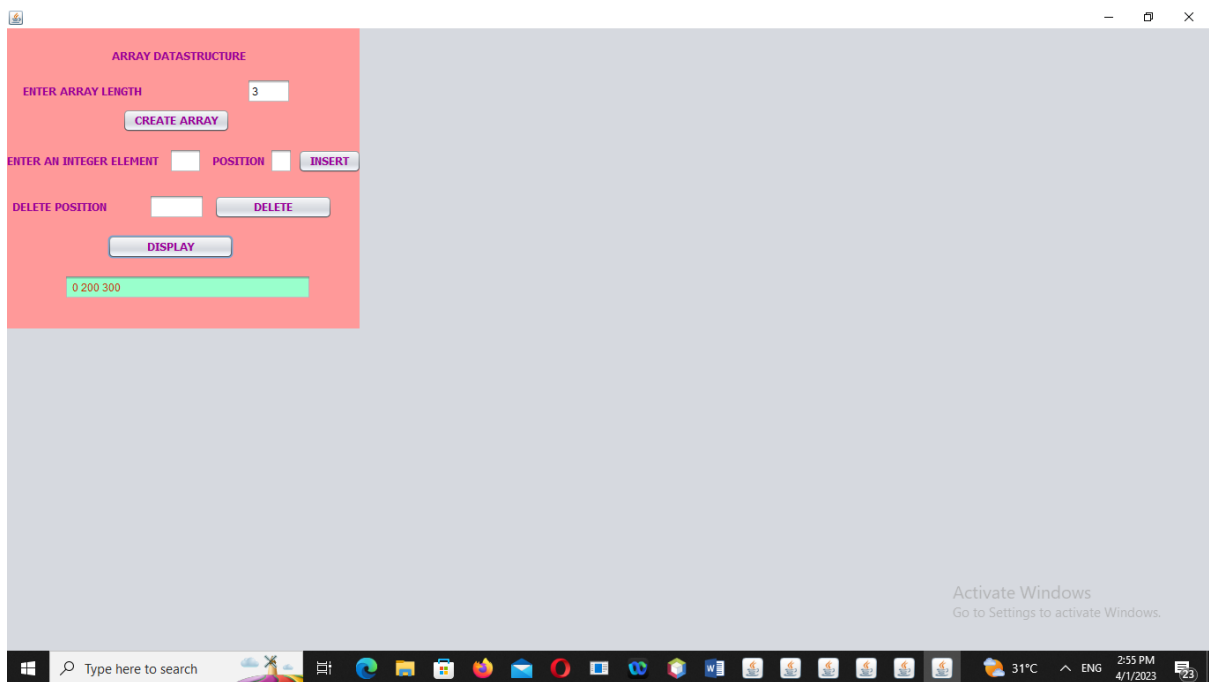
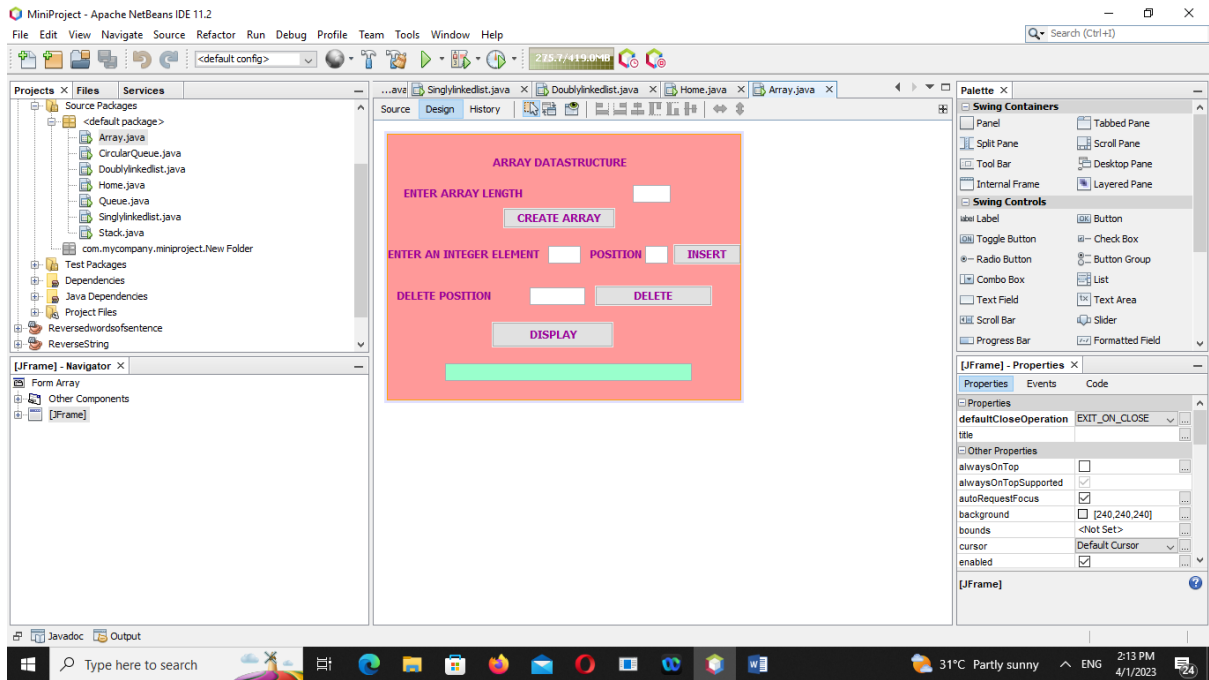
```
private javax.swing.JPanel jPanel1;
```

```
private javax.swing.JTextField length;
```

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

```
}
```

OUTPUT



STACK

```
import javax.swing.JOptionPane;

/** To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */

/**
 *
 * @author user
 */
public class Stack extends javax.swing.JFrame {

    /**
     * Creates new form Stack
     */
    public Stack() {
        initComponents();

    }
    private int s[];
        private int size;
        private int top=-1;

    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
}
```

```

@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jPanel1 = new javax.swing.JPanel();
    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    sizefield = new javax.swing.JTextField();
    jButton1 = new javax.swing.JButton();
    jLabel3 = new javax.swing.JLabel();
    element = new javax.swing.JTextField();
    jButton2 = new javax.swing.JButton();
    jButton3 = new javax.swing.JButton();
    display = new javax.swing.JButton();
    displaybox = new javax.swing.JTextField();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    jPanel1.setBackground(new java.awt.Color(255, 153, 153));

    jLabel1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
    jLabel1.setForeground(new java.awt.Color(0, 102, 102));
    jLabel1.setText("STACK DATASTRUCTURE");

    jLabel2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
    jLabel2.setForeground(new java.awt.Color(0, 102, 102));
    jLabel2.setText("ENTER THE STACK SIZE");

    sizefield.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {

```

```

        sizefieldActionPerformed(evt);
    }
});

jButton1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jButton1.setForeground(new java.awt.Color(0, 102, 102));
jButton1.setText("CREATE STACK");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});

jLabel3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel3.setForeground(new java.awt.Color(0, 102, 102));
jLabel3.setText("CREATE AN ELEMENT");

element.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        elementActionPerformed(evt);
    }
});

jButton2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jButton2.setForeground(new java.awt.Color(0, 102, 102));
jButton2.setText("PUSH");
jButton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton2ActionPerformed(evt);
    }
});

```



```
jButton3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jButton3.setForeground(new java.awt.Color(0, 102, 102));
jButton3.setText("POP");
jButton3.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton3ActionPerformed(evt);
    }
});
```

```
display.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
display.setForeground(new java.awt.Color(0, 102, 102));
display.setText("DISPLAY");
display.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        displayActionPerformed(evt);
    }
});
```

```
displaybox.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        displayboxActionPerformed(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(130, 130, 130)
```

```

        .addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addContainerGap())

    .addGroup(jPanel1Layout.createSequentialGroup())

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(62, 62, 62)

            .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE, 276,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(130, 130, 130)

            .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 134,
javax.swing.GroupLayout.PREFERRED_SIZE)))

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup())

        .addContainerGap()

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE, 136,
Short.MAX_VALUE)

            .addGap(27, 27, 27)

            .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE, 60,
javax.swing.GroupLayout.PREFERRED_SIZE)

            .addGap(60, 60, 60)

            .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, 77,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addComponent(jLabel2)

            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

            .addComponent(sizefield, javax.swing.GroupLayout.PREFERRED_SIZE, 100,
javax.swing.GroupLayout.PREFERRED_SIZE)))

```

```

        .addGap(30, 30, 30))

        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup())

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addComponent(display)

        .addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, 94,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addGap(148, 148, 148))
);
jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(jPanel1Layout.createSequentialGroup())

        .addContainerGap()

        .addComponent(jLabel1)

        .addGap(18, 18, 18)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(jLabel2)

        .addComponent(sizefield, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

        .addGap(18, 18, 18)

        .addComponent(jButton1)

        .addGap(22, 22, 22)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, 23,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jButton2))

        .addGap(18, 18, 18)

        .addComponent(jButton3)

```

```

        .addGap(18, 18, 18)

        .addComponent(display)

        .addGap(28, 28, 28)

        .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addContainerGap(20, Short.MAX_VALUE))

    );

    getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 400,
300));

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

private void sizefieldActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    //stack creation code
    size=Integer.valueOf(sizefield.getText());
    s=new int[size];
    String message="stack of size"+size+"created";
    JOptionPane.showMessageDialog(rootPane,message);// TODO add your handling code here:
}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    //push code
    int elem;
    if(top==size-1)
    {
        JOptionPane.showMessageDialog(rootPane,"push not possible");
    }
}

```

```

}
else
{
elem=Integer.valueOf(element.getText());
++top;
s[top]=elem;
JOptionPane.showMessageDialog(rootPane,"push successfuu");
element.setText("");
}
// TODO add your handling code here:
}

```

```

private void displayActionPerformed(java.awt.event.ActionEvent evt) {
//display code
String msg="";
if(top== -1)
{
JOptionPane.showMessageDialog(rootPane,"display not possible");
}
else
{
for(int i=top;i>=0;i--)
{
msg=msg+" "+s[i];
}
displaybox.setText(msg);
}
}

```

```

// TODO add your handling code here:

```

```
}
```

```
private void elementActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
}
```

```
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {  
//pop code  
if(top==1)  
{  
OptionPane.showMessageDialog(rootPane,"pop not possible");  
}  
else  
{  
String elem="Element deleted is"+s[top];  
OptionPane.showMessageDialog(rootPane,"pop successfull");  
--top;  
}// TODO add your handling code here:  
}
```

```
private void displayboxActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
}
```

```
/**
```

```
 * @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(Stack.class.getName()).log(java.util.logging.Level.SEVERE,
            null, ex);
    } catch (InstantiationException ex) {
        java.util.logging.Logger.getLogger(Stack.class.getName()).log(java.util.logging.Level.SEVERE,
            null, ex);
    } catch (IllegalAccessException ex) {
        java.util.logging.Logger.getLogger(Stack.class.getName()).log(java.util.logging.Level.SEVERE,
            null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
        java.util.logging.Logger.getLogger(Stack.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 Stack().setVisible(true);
    }
});
}

```

```

// Variables declaration - do not modify

private javax.swing.JButton display;

private javax.swing.JTextField displaybox;

private javax.swing.JTextField element;

private javax.swing.JButton jButton1;

private javax.swing.JButton jButton2;

private javax.swing.JButton jButton3;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

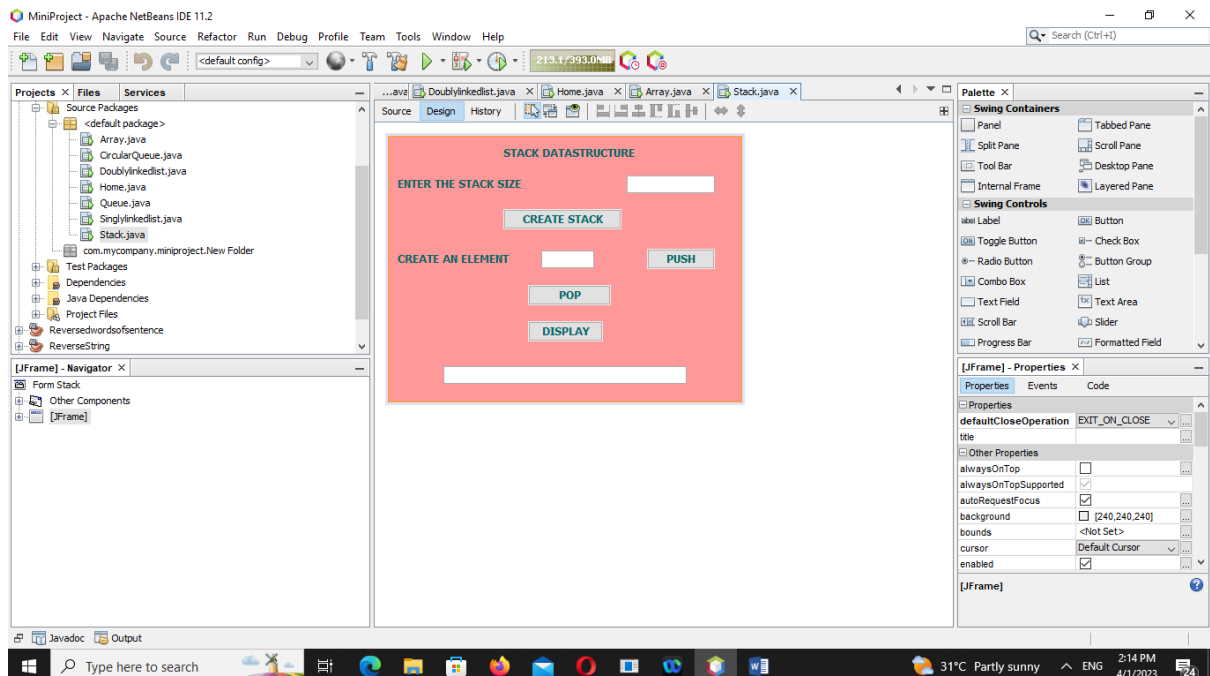
private javax.swing.JPanel jPanel1;

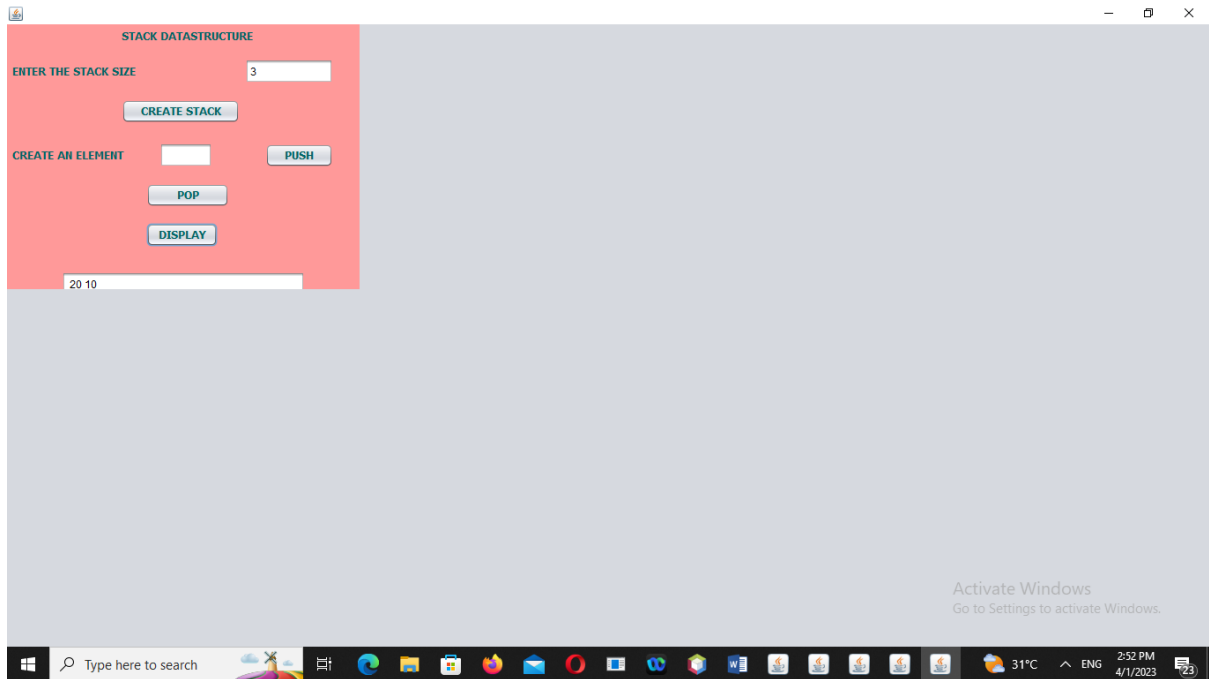
private javax.swing.JTextField sizefield;

// End of variables declaration
}

```

OUTPUT





QUEUE

```
import javax.swing.JOptionPane;
```

```
/*
```

```
 * To change this license header, choose License Headers in Project Properties.
```

```
 * To change this template file, choose Tools | Templates
```

```
 * and open the template in the editor.
```

```
 */
```

```
/**
```

```
 *
```

```
 * @author user
```

```
 */
```

```
public class Queue extends javax.swing.JFrame {
```

```

/**
 * Creates new form Queue
 */
public Queue() {
    initComponents();
}

private int q[];
private int size;
private int r=-1;
private int f=0;

/**
 * This method is called from within the constructor to initialize the form.
 * WARNING: Do NOT modify this code. The content of this method is always
 * regenerated by the Form Editor.
 */
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jPanel1 = new javax.swing.JPanel();
    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    sizefield = new javax.swing.JTextField();
    create = new javax.swing.JButton();
    jLabel3 = new javax.swing.JLabel();
    element = new javax.swing.JTextField();
    insert = new javax.swing.JButton();

```

```

delete = new javax.swing.JButton();
display = new javax.swing.JButton();
displaybox = new javax.swing.JTextField();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

jPanel1.setBackground(new java.awt.Color(153, 153, 255));

jLabel1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel1.setForeground(new java.awt.Color(0, 153, 51));
jLabel1.setText("QUEUE DATASTRUCTURE");

jLabel2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel2.setForeground(new java.awt.Color(0, 102, 0));
jLabel2.setText("ENTER QUEUE SIZE");

sizefield.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        sizefieldActionPerformed(evt);
    }
});

create.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
create.setForeground(new java.awt.Color(0, 102, 0));
create.setText("CREATE QUEUE");
create.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        createActionPerformed(evt);
    }
});

```

```
jLabel3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel3.setForeground(new java.awt.Color(0, 102, 0));
jLabel3.setText("ENTER AN ELEMENT");
```

```
element.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        elementActionPerformed(evt);
    }
});
```

```
insert.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
insert.setForeground(new java.awt.Color(0, 102, 0));
insert.setText("INSERT");
insert.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertActionPerformed(evt);
    }
});
```

```
delete.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
delete.setForeground(new java.awt.Color(0, 102, 0));
delete.setText("DELETE");
delete.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        deleteActionPerformed(evt);
    }
});
```

```
display.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
display.setForeground(new java.awt.Color(0, 102, 0));
```



```

        .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, 135,
javax.swing.GroupLayout.PREFERRED_SIZE)

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

        .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE, 65,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 52,
Short.MAX_VALUE)

        .addComponent(insert))

    .addGroup(jPanel1Layout.createSequentialGroup())

        .addGap(33, 33, 33)

        .addComponent(jLabel2)

        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addComponent(sizefield, javax.swing.GroupLayout.PREFERRED_SIZE, 85,
javax.swing.GroupLayout.PREFERRED_SIZE)))

    .addGap(51, 51, 51))

    .addGroup(jPanel1Layout.createSequentialGroup())

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(129, 129, 129)

            .addComponent(jLabel1))

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(128, 128, 128)

            .addComponent(create, javax.swing.GroupLayout.PREFERRED_SIZE, 137,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(53, 53, 53)

            .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE, 273,
javax.swing.GroupLayout.PREFERRED_SIZE)))

    .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

);

jPanel1Layout.setVerticalGroup(

    jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

```

```

        .addGroup(jPanel1Layout.createSequentialGroup())
            .addGap(24, 24, 24)
            .addComponent(jLabel1)
            .addGap(18, 18, 18)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(jLabel2)
            .addComponent(sizefield, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
            .addComponent(create)
            .addGap(18, 18, 18)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(jLabel3)
            .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(insert))
            .addGap(18, 18, 18)
            .addComponent(delete)
            .addGap(18, 18, 18)
            .addComponent(display)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
            .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addContainerGap(35, Short.MAX_VALUE))
    );

    getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 400,
300));

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

```

```

private void sizefieldActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void createActionPerformed(java.awt.event.ActionEvent evt) {
//code for creating queue
size=Integer.valueOf(sizefield.getText());
q=new int[size];
String message="queue of size"+size+"created";
JOptionPane.showMessageDialog(rootPane, message);

// TODO add your handling code here:
}

private void insertActionPerformed(java.awt.event.ActionEvent evt) {
//code for insertion
int elem;
if(r==size-1)
{
JOptionPane.showMessageDialog(rootPane, "insertion not possible");
}
else
{
elem=Integer.valueOf(element.getText());
++r;
q[r]=elem;
JOptionPane.showMessageDialog(rootPane, "insertion successfull");
element.setText("");
}
}
// TODO add your handling code here:

```



```
}
```

```
private void deleteActionPerformed(java.awt.event.ActionEvent evt) {  
    //code for deletion  
    if(r==-1 || f>r)  
    {  
        JOptionPane.showMessageDialog(rootPane,"deletion not possible");  
    }  
    else  
    {  
        String elem="Element deleted is"+q[f];  
        JOptionPane.showMessageDialog(rootPane,"deletion successfull");  
        ++f;  
    }  
    // TODO add your handling code here:  
}
```

```
private void displayActionPerformed(java.awt.event.ActionEvent evt) {  
    //code for display  
    String msg="";  
    if(r==-1 || f>r)  
    {  
        JOptionPane.showMessageDialog(rootPane,"display not possible");  
    }  
    else  
    {  
        for(int i=f;i<=r;i++)  
        {  
            msg=msg+" "+q[i];  
        }  
        displaybox.setText(msg);  
    }  
}
```

```
// TODO add your handling code here:
```

```
}
```

```
private void elementActionPerformed(java.awt.event.ActionEvent evt) {
```

```
    // TODO add your handling code here:
```

```
}
```

```
private void displayboxActionPerformed(java.awt.event.ActionEvent evt) {
```

```
    // TODO add your handling code here:
```

```
}
```

```
/**
```

```
 * @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(Queue.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
```

```
    } catch (InstantiationException ex) {
```

```

        java.util.logging.Logger.getLogger(Queue.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);

        } catch (IllegalAccessException ex) {

            java.util.logging.Logger.getLogger(Queue.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);

        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

            java.util.logging.Logger.getLogger(Queue.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 Queue().setVisible(true);

    }

});

}

```

```

// Variables declaration - do not modify

private javax.swing.JButton create;

private javax.swing.JButton delete;

private javax.swing.JButton display;

private javax.swing.JTextField displaybox;

private javax.swing.JTextField element;

private javax.swing.JButton insert;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

private javax.swing.JPanel jPanel1;

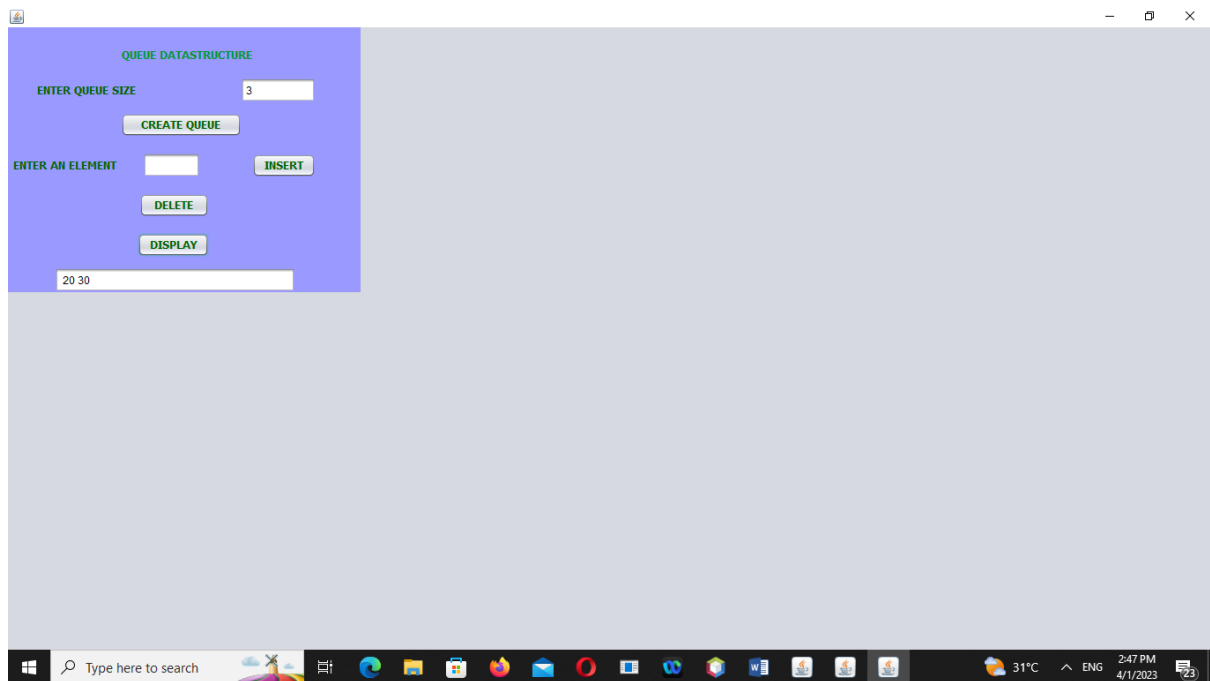
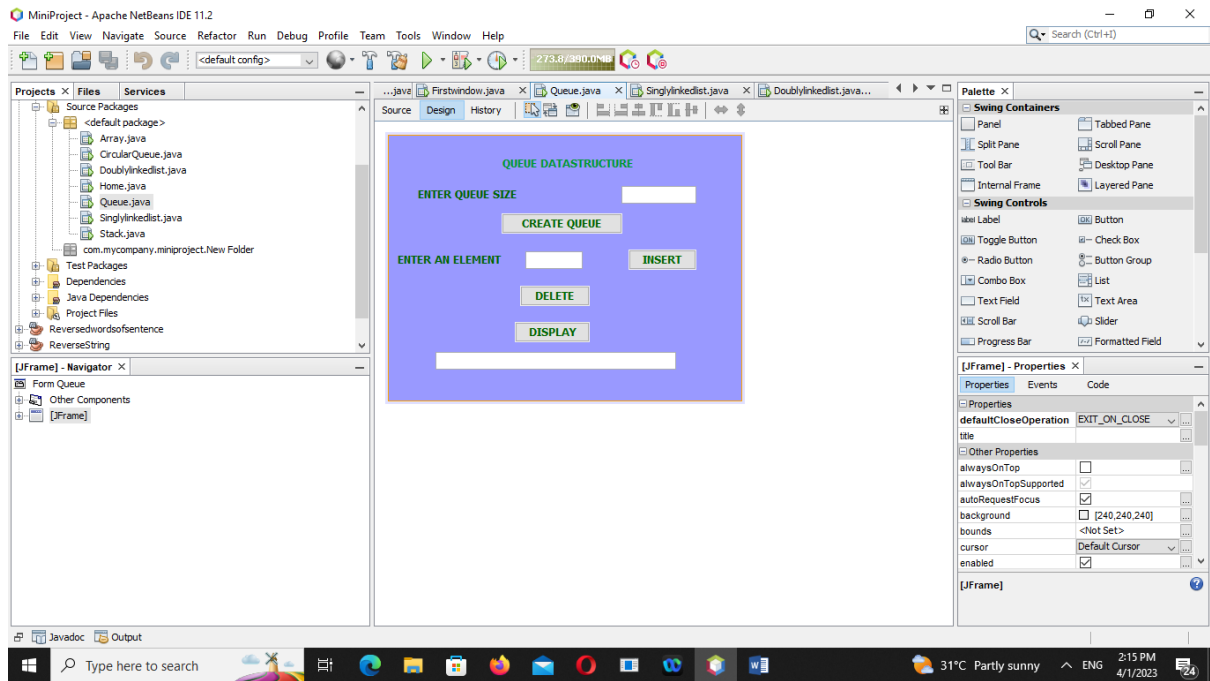
private javax.swing.JTextField sizefield;

// End of variables declaration

```

}

OUTPUT



CIRCULAR QUEUE

```
import javax.swing.JOptionPane;
```

```
/*
```

```
 * To change this license header, choose License Headers in Project Properties.
```

```
 * To change this template file, choose Tools | Templates
```

```
 * and open the template in the editor.
```

```
*/
```

```
/**
```

```
 *
```

```
 * @author user
```

```
*/
```

```
public class CircularQueue extends javax.swing.JFrame {
```

```
    /**
```

```
     * Creates new form CircularQueue
```

```
    */
```

```
    public CircularQueue() {
```

```
        initComponents();
```

```
    }
```

```
    private int cq[];
```

```
    private int size;
```

```
    private int r=-1;
```

```
    private int f=0;
```

```
    private int count=0;
```

```
    /**
```

```
     * This method is called from within the constructor to initialize the form.
```

```
     * WARNING: Do NOT modify this code. The content of this method is always
```

```
     * regenerated by the Form Editor.
```

```
    */
```

```

@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jPanel1 = new javax.swing.JPanel();
    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    sizefield = new javax.swing.JTextField();
    create = new javax.swing.JButton();
    jLabel3 = new javax.swing.JLabel();
    element = new javax.swing.JTextField();
    insert = new javax.swing.JButton();
    delete = new javax.swing.JButton();
    display = new javax.swing.JButton();
    displaybox = new javax.swing.JTextField();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    jPanel1.setBackground(new java.awt.Color(255, 153, 153));

    jLabel1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
    jLabel1.setForeground(new java.awt.Color(153, 0, 153));
    jLabel1.setText("CIRCULAR QUEUE");

    jLabel2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
    jLabel2.setForeground(new java.awt.Color(102, 0, 102));
    jLabel2.setText("ENTER CIRCULAR QUEUE SIZE");

    sizefield.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {

```

```
        sizefieldActionPerformed(evt);
    }
});

create.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
create.setForeground(new java.awt.Color(153, 0, 153));
create.setText("CREATE CIRCULAR QUEUE");
create.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        createActionPerformed(evt);
    }
});
```

```
jLabel3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel3.setForeground(new java.awt.Color(153, 0, 153));
jLabel3.setText("ENTER AN ELEMENT");
```

```
element.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        elementActionPerformed(evt);
    }
});
```

```
insert.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
insert.setForeground(new java.awt.Color(102, 0, 102));
insert.setText("INSERT");
insert.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertActionPerformed(evt);
    }
});
```

```

delete.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
delete.setForeground(new java.awt.Color(102, 0, 102));
delete.setText("DELETE");
delete.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        deleteActionPerformed(evt);
    }
});

```

```

display.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
display.setForeground(new java.awt.Color(102, 0, 102));
display.setText("DISPLAY");
display.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        displayActionPerformed(evt);
    }
});

```

```

displaybox.setBackground(new java.awt.Color(255, 255, 153));

```

```

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(144, 144, 144)
            .addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addGap(150, 150, 150))
        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()

```



```

.addContainerGap()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)

    .addGroup(jPanel1Layout.createSequentialGroup())

        .addComponent(jLabel2)

        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addComponent(sizefield, javax.swing.GroupLayout.PREFERRED_SIZE, 122,
javax.swing.GroupLayout.PREFERRED_SIZE))

    .addGroup(jPanel1Layout.createSequentialGroup())

        .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

    .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE, 61,
javax.swing.GroupLayout.PREFERRED_SIZE)

    .addComponent(display)

    .addComponent(delete))

    .addGap(56, 56, 56)

    .addComponent(insert)))

.addGap(27, 27, 27))

.addGroup(jPanel1Layout.createSequentialGroup())

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

    .addGroup(jPanel1Layout.createSequentialGroup())

        .addGap(99, 99, 99)

        .addComponent(create))

    .addGroup(jPanel1Layout.createSequentialGroup())

        .addGap(60, 60, 60)

        .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE, 272,
javax.swing.GroupLayout.PREFERRED_SIZE)))

.addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

```

```

);

jPanel1Layout.setVerticalGroup(
    jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addGap(22, 22, 22)
            .addComponent(jLabel1)
            .addGap(18, 18, 18)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(jLabel2)
            .addComponent(sizefield, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(18, 18, 18)
            .addComponent(create)
            .addGap(18, 18, 18)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(jLabel3)
            .addComponent(element, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(insert))
            .addGap(18, 18, 18)
            .addComponent(delete)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
            .addComponent(display)
            .addGap(18, 18, 18)
            .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addContainerGap(30, Short.MAX_VALUE))
);

getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 400,
300));

```

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

```
    private void createActionPerformed(java.awt.event.ActionEvent evt) {  
//code for circular queue  
size=Integer.valueOf(sizefield.getText());  
cq=new int[size];  
String message="circularQueue of size"+size+"created";  
JOptionPane.showMessageDialog(rootPane,message);  
// TODO add your handling code here:  
}
```

```
    private void elementActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
}
```

```
    private void insertActionPerformed(java.awt.event.ActionEvent evt) {  
//code for insertion  
int elem;  
if(count==size)  
{  
    JOptionPane.showMessageDialog(rootPane,"insertion not possible");  
}  
else  
{  
    elem=Integer.valueOf(element.getText());  
    r=(r+1)%size;  
    cq[r]=elem;  
    ++count;  
    JOptionPane.showMessageDialog(rootPane,"insertion successfull");  
}
```

```

        element.setText("");
    }
    // TODO add your handling code here:
    }

    private void sizefieldActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    private void deleteActionPerformed(java.awt.event.ActionEvent evt) {
        //code for deletion
        if(count==0)
        {
            JOptionPane.showMessageDialog(rootPane,"deletion not possible");
        }
        else
        {
            String message="Element deleted is "+cq[f];
            f=(f+1)%size;
            --count;
            JOptionPane.showMessageDialog(rootPane,message);
            count--;
        }
        // TODO add your handling code here:
    }

    private void displayActionPerformed(java.awt.event.ActionEvent evt) {
        //code for display
        String msg="";
        int f1=f;
        if(count==0)
        {

```

```
JOptionPane.showMessageDialog(rootPane,"display not possible");
```

```
}
```

```
else
```

```
{
```

```
for(int i=1;i<=count;i++)
```

```
{
```

```
    msg=msg+" "+cq[f1];
```

```
    f1=(f1+1)%size;
```

```
}
```

```
JOptionPane.showMessageDialog(rootPane,msg);
```

```
displaybox.setText(msg);
```

```
}
```

```
// TODO add your handling code here:
```

```
}
```

```
/**
```

```
 * @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(CircularQueue.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);

    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(CircularQueue.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);

    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(CircularQueue.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);

    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(CircularQueue.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 CircularQueue().setVisible(true);
    }
});
}

// Variables declaration - do not modify
private javax.swing.JButton create;
private javax.swing.JButton delete;
private javax.swing.JButton display;
private javax.swing.JTextField displaybox;

```

```

private javax.swing.JTextField element;

private javax.swing.JButton insert;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

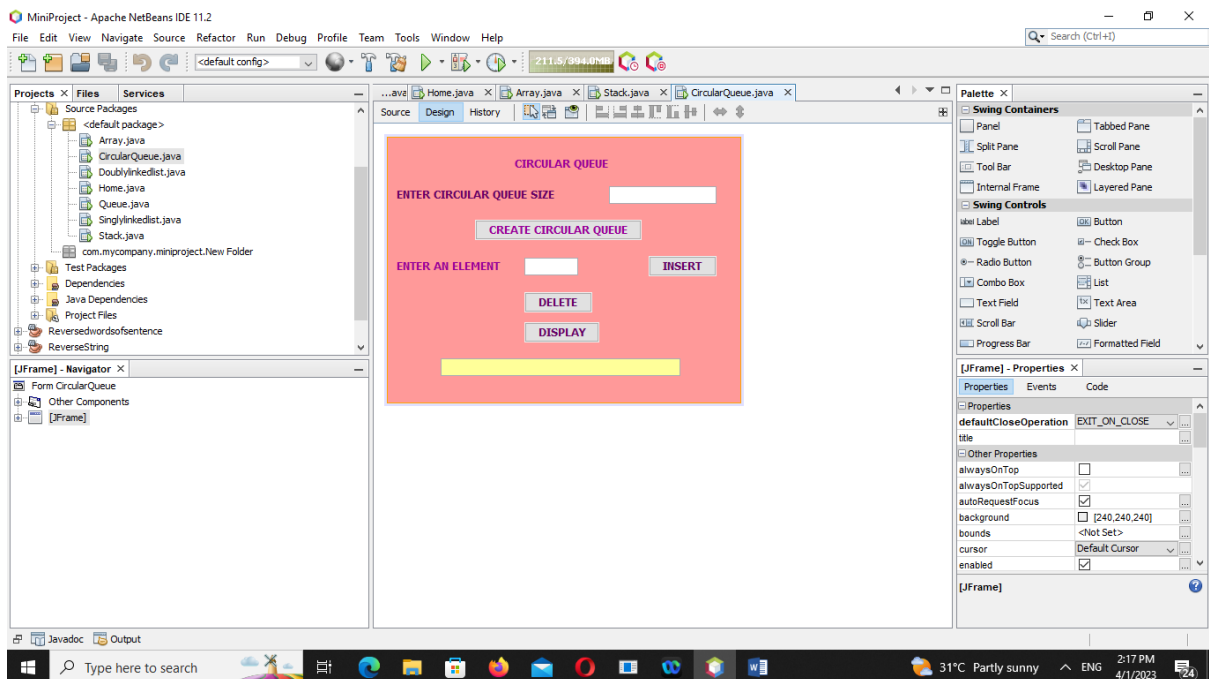
private javax.swing.JPanel jPanel1;

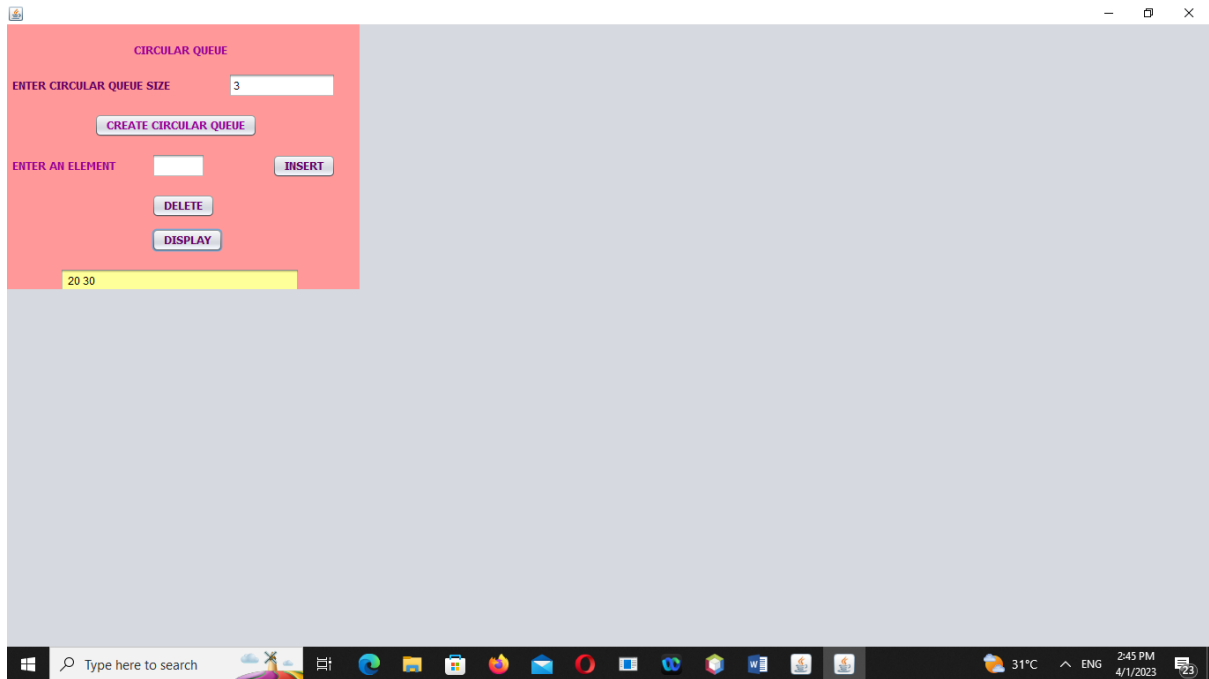
private javax.swing.JTextField sizefield;

// End of variables declaration
}

```

OUTPUT





SINGLY LINKED QUEUE

```
import javax.swing.JOptionPane;
```

```
/*
```

```
 * To change this license header, choose License Headers in Project Properties.
```

```
 * To change this template file, choose Tools | Templates
```

```
 * and open the template in the editor.
```

```
*/
```

```
/**
```

```
 *
```

```
 * @author user
```

```
*/
```

```
public class Singlylinkedlist extends javax.swing.JFrame {
```

```
/**
```

```
 * Creates new form Singlylinkedlist
```



```

*/
public Singlylinkedlist() {
    initComponents();
}

class Node
{
    int data;
    Node link;
}
private Node first;

/**
 * This method is called from within the constructor to initialize the form.
 * WARNING: Do NOT modify this code. The content of this method is always
 * regenerated by the Form Editor.
 */
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jPanel1 = new javax.swing.JPanel();
    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    element1 = new javax.swing.JTextField();
    insertrear = new javax.swing.JButton();
    jLabel3 = new javax.swing.JLabel();
    element2 = new javax.swing.JTextField();
    insertfront = new javax.swing.JButton();
    deleterear = new javax.swing.JButton();

```

```
display = new javax.swing.JButton();
displaybox = new javax.swing.JTextField();
deletefront = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

jPanel1.setBackground(new java.awt.Color(204, 255, 255));

jLabel1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel1.setForeground(new java.awt.Color(0, 0, 255));
jLabel1.setText("SINGLY LINKED LIST DATA STRUCTURE");

jLabel2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel2.setForeground(new java.awt.Color(0, 0, 204));
jLabel2.setText("ENTER THE ELEMENT");

insertrear.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
insertrear.setForeground(new java.awt.Color(0, 0, 255));
insertrear.setText("INSERT REAR");
insertrear.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertrearActionPerformed(evt);
    }
});

jLabel3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel3.setForeground(new java.awt.Color(0, 0, 204));
jLabel3.setText("ENTER THE ELEMENT");

insertfront.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
```

```
insertfront.setForeground(new java.awt.Color(0, 51, 204));  
insertfront.setText("INSERT FRONT");  
insertfront.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        insertfrontActionPerformed(evt);  
    }  
});
```

```
deleterear.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N  
deleterear.setForeground(new java.awt.Color(0, 0, 204));  
deleterear.setText("DELETE REAR");  
deleterear.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        deleterearActionPerformed(evt);  
    }  
});
```

```
display.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N  
display.setForeground(new java.awt.Color(0, 0, 255));  
display.setText("DISPLAY");  
display.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {  
        displayActionPerformed(evt);  
    }  
});
```

```
deletefront.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N  
deletefront.setForeground(new java.awt.Color(0, 0, 153));  
deletefront.setText("DELETE FRONT");  
deletefront.addActionListener(new java.awt.event.ActionListener() {  
    public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```

        deletefrontActionPerformed(evt);
    }
});

javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(
    jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
    .addGroup(jPanel1Layout.createSequentialGroup()
        .addGap(86, 86, 86)
        .addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE, 260,
Short.MAX_VALUE))
    .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
jPanel1Layout.createSequentialGroup()
        .addContainerGap()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
    .addComponent(jLabel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
    .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
    .addComponent(element1, javax.swing.GroupLayout.DEFAULT_SIZE, 66,
Short.MAX_VALUE)
    .addComponent(element2))

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

```

```

        .addGap(13, 13, 13)

        .addComponent(insertrear, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

        .addGroup(jPanel1Layout.createSequentialGroup())

        .addGap(18, 18, 18)

        .addComponent(insertfront)

        .addGap(0, 0, Short.MAX_VALUE))))

    .addGap(79, 79, 79))

    .addGroup(jPanel1Layout.createSequentialGroup())

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel1Layout.createSequentialGroup())

            .addGap(132, 132, 132)

            .addComponent(display))

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

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

                .addGap(32, 32, 32)

                .addComponent(deleterear)

                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

                .addComponent(deletefront))

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

                .addGap(59, 59, 59)

                .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE, 234,
javax.swing.GroupLayout.PREFERRED_SIZE))))

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

    );

    jPanel1Layout.setVerticalGroup(

        jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

            .addGroup(jPanel1Layout.createSequentialGroup())

```

```

        .addGap(19, 19, 19)

        .addComponent(jLabel1)

        .addGap(25, 25, 25)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addComponent(jLabel2)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
        .addComponent(element1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
        .addComponent(insertrear)))

    .addGap(27, 27, 27)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
        .addComponent(jLabel3)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
        .addComponent(element2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
        .addComponent(insertfront)))

    .addGap(25, 25, 25)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
        .addComponent(deleterearear)
        .addComponent(deletefront))

    .addGap(19, 19, 19)

    .addComponent(display)

    .addGap(18, 18, 18)

    .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

    .addContainerGap(40, Short.MAX_VALUE))

);

```

```
getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 400, 300));
```

```
pack();
```

```
}// </editor-fold>
```

```
private void insertrearActionPerformed(java.awt.event.ActionEvent evt) {
```

```
//code for insertionrear
```

```
Node temp;
```

```
int elem1=Integer.valueOf(element1.getText());
```

```
Node newnode=new Node();
```

```
newnode.data=elem1;
```

```
newnode.link=null;
```

```
if(first==null)
```

```
{
```

```
    first=newnode;
```

```
}
```

```
else
```

```
{
```

```
    temp=first;
```

```
    while(temp.link!=null)
```

```
    {
```

```
        temp=temp.link;
```

```
    }
```

```
    temp.link=newnode;
```

```
    String message="element"+elem1+"inseted";
```

```
    JOptionPane.showMessageDialog(rootPane, message);
```

```
    element1.setText("");
```

```
}
```

```
// TODO add your handling code here:
```

```
}
```

```
private void insertfrontActionPerformed(java.awt.event.ActionEvent evt) {
```

```
//code for insertfront
```

```
int elem2=Integer.valueOf(element2.getText());
```

```
Node newnode=new Node();
```

```
newnode.data=elem2;
```

```
newnode.link=null;
```

```
if(first==null)
```

```
{
```

```
first=newnode;
```

```
}
```

```
else
```

```
{
```

```
newnode.link=first;
```

```
first=newnode;
```

```
String msg="element1"+elem2+"inserted";
```

```
JOptionPane.showMessageDialog(rootPane, msg);
```

```
element1.setText("");
```

```
//TODO add your handling code here:
```

```
}
```

```
private void deleterearActionPerformed(java.awt.event.ActionEvent evt) {
```



```

//code for deletionrear
Node temp;
if(first==null)
{
JOptionPane.showMessageDialog(rootPane,"deletion not possible");
}
if(first.link==null)
{
String msg="deleted element2 is"+first.data;

}
else
{
temp=first;
while(temp.link.link!=null)
{
temp=temp.link;
}
String msg="element2 deleted is"+temp.link.data;
JOptionPane.showMessageDialog(rootPane,msg);
temp.link=null;
} // TODO add your handling code here:
}

private void displayActionPerformed(java.awt.event.ActionEvent evt) {
//code for display
Node temp;
String msg="";
if(first==null)
{
JOptionPane.showMessageDialog(rootPane,"display not possible");
}

```

```

displaybox.setText("");
}
else if(first.link==null)
{
msg=msg+" "+first.data;
JOptionPane.showMessageDialog(rootPane, msg);
displaybox.setText(msg);
}
else
{
temp=first;
while(temp!=null)
{
msg=msg+" "+temp.data;
temp=temp.link;
}
JOptionPane.showMessageDialog(rootPane, msg);
displaybox.setText(msg);
} // TODO add your handling code here:
}

private void deletefrontActionPerformed(java.awt.event.ActionEvent evt) {
//code for deletefront
if(first==null)
{
JOptionPane.showMessageDialog(rootPane,"deletion not possible");
}
else if(first.link==null)
{
String message="deleted element2 is"+first.data;

```

```

first=null;
}
else
{
String message="deleted element2 is"+first.data;
JOptionPane.showMessageDialog(rootPane, message);
first=first.link;
}

```

```

// TODO add your handling code here:

```

```

}

```

```

/**

```

```

 * @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(Singlylinkedlist.class.getName()).log(java.util.logging.Level.SEVERE
, null, ex);
```

```
    } catch (InstantiationException ex) {
```

```
java.util.logging.Logger.getLogger(Singlylinkedlist.class.getName()).log(java.util.logging.Level.SEVERE
, null, ex);
```

```
    } catch (IllegalAccessException ex) {
```

```
java.util.logging.Logger.getLogger(Singlylinkedlist.class.getName()).log(java.util.logging.Level.SEVERE
, null, ex);
```

```
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
```

```
java.util.logging.Logger.getLogger(Singlylinkedlist.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 Singlylinkedlist().setVisible(true);
```

```
    }
```

```
});
```

```
}
```

```
// Variables declaration - do not modify
```

```
private javax.swing.JButton deletefront;
```

```
private javax.swing.JButton deleterear;
```

```
private javax.swing.JButton display;
```

```
private javax.swing.JTextField displaybox;
```

```
private javax.swing.JTextField element1;
```

```
private javax.swing.JTextField element2;
```

```
private javax.swing.JButton insertfront;
```

```

private javax.swing.JButton insertrear;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

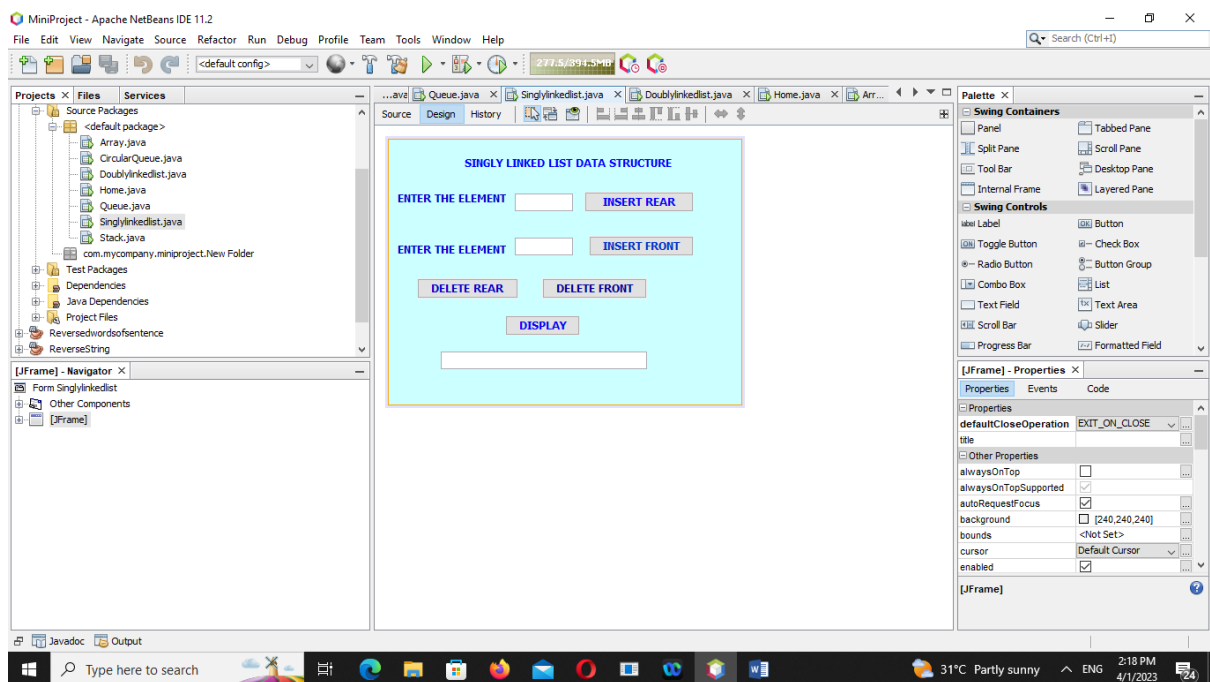
private javax.swing.JLabel jLabel3;

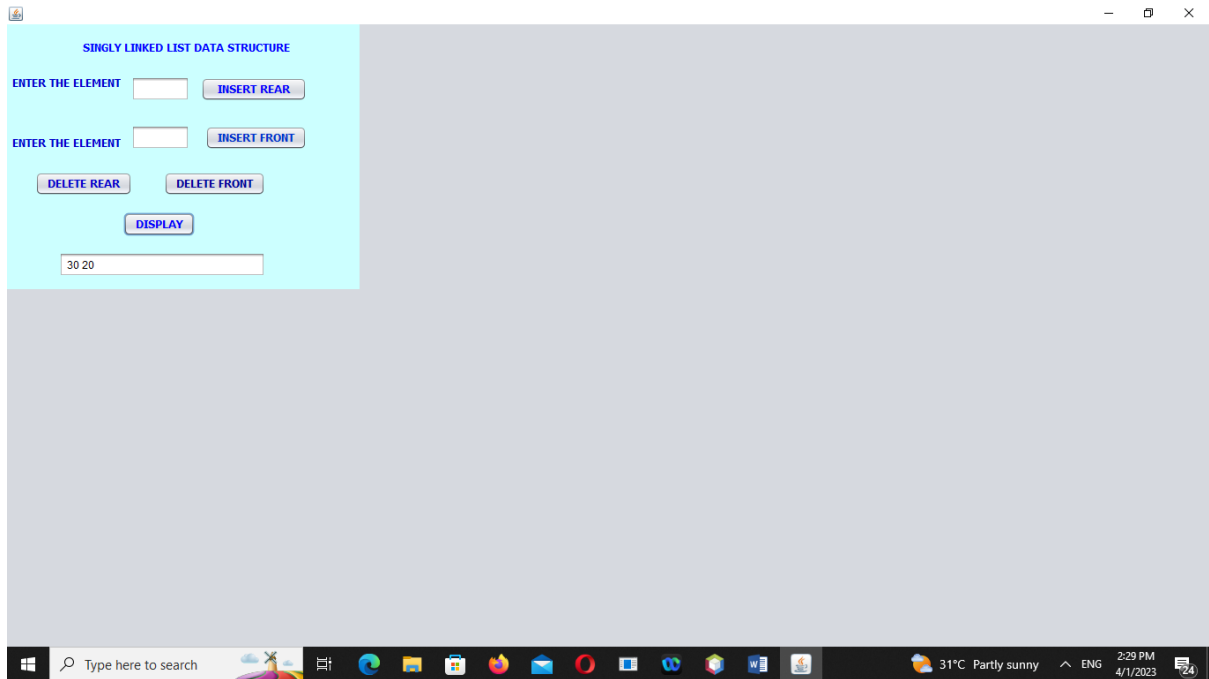
private javax.swing.JPanel jPanel1;

// End of variables declaration
}

```

OUTPUT





DOUBLY LINKED LIST

```
import javax.swing.JOptionPane;
```

```
/*
```

```
 * To change this license header, choose License Headers in Project Properties.
```

```
 * To change this template file, choose Tools | Templates
```

```
 * and open the template in the editor.
```

```
*/
```

```
/**
```

```
 *
```

```
 * @author user
```

```
 */
```

```
public class Doublylinkedlist extends javax.swing.JFrame {
```

```
/**
```

```

    * Creates new form Doublylinkedlist
    */
public Doublylinkedlist() {
    initComponents();
}

class Node
{
    Node prevlink;

    int data;

    Node nextlink;
}

private Node first;


/**
 * This method is called from within the constructor to initialize the form.
 * WARNING: Do NOT modify this code. The content of this method is always
 * regenerated by the Form Editor.
 */
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jPanel1 = new javax.swing.JPanel();
    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    element1 = new javax.swing.JTextField();
    insertrear = new javax.swing.JButton();
    jLabel3 = new javax.swing.JLabel();
    element2 = new javax.swing.JTextField();
    insertfront = new javax.swing.JButton();

```

```

deleterear = new javax.swing.JButton();
deletefront = new javax.swing.JButton();
displaybox = new javax.swing.JTextField();
displayforward = new javax.swing.JButton();
displayreverse = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

jPanel1.setBackground(new java.awt.Color(255, 153, 204));

jLabel1.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel1.setForeground(new java.awt.Color(204, 0, 51));
jLabel1.setText("DOUBLY LINKED LIST DATASTRUCTURE");

jLabel2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel2.setForeground(new java.awt.Color(204, 0, 0));
jLabel2.setText("ENTER THE ELEMENT");

insertrear.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
insertrear.setForeground(new java.awt.Color(204, 0, 0));
insertrear.setText("INSERT REAR");
insertrear.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertrearActionPerformed(evt);
    }
});

jLabel3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
jLabel3.setForeground(new java.awt.Color(204, 0, 0));
jLabel3.setText("ENTER THE ELEMENT");

```



```
insertfront.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
insertfront.setForeground(new java.awt.Color(204, 0, 0));
insertfront.setText("INSERT FRONT");
insertfront.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertfrontActionPerformed(evt);
    }
});
```

```
deleterear.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
deleterear.setForeground(new java.awt.Color(204, 0, 0));
deleterear.setText("DELETE REAR");
deleterear.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        deleterearActionPerformed(evt);
    }
});
```

```
deletefront.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N
deletefront.setForeground(new java.awt.Color(153, 0, 0));
deletefront.setText("DELETE FRONT");
deletefront.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        deletefrontActionPerformed(evt);
    }
});
```

```
displaybox.setBackground(new java.awt.Color(102, 255, 102));
displaybox.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
```



```

        .addComponent(jLabel1))
    .addGroup(jPanel1Layout.createSequentialGroup())
        .addContainerGap()
        .addComponent(jLabel2)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
        .addComponent(element1, javax.swing.GroupLayout.PREFERRED_SIZE, 73,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGap(18, 18, 18)
        .addComponent(insertrear))
    .addGroup(jPanel1Layout.createSequentialGroup())
        .addContainerGap()
        .addComponent(jLabel3)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
        .addComponent(element2, javax.swing.GroupLayout.PREFERRED_SIZE, 73,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGap(18, 18, 18)
        .addComponent(insertfront))
    .addGroup(jPanel1Layout.createSequentialGroup())
        .addGap(16, 16, 16)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
        .addComponent(displayforward)
        .addComponent(deleterear))
        .addGap(28, 28, 28)

    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addComponent(deletefront)
        .addComponent(displayreverse)))
    .addGroup(jPanel1Layout.createSequentialGroup())
        .addGap(40, 40, 40)
        .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE, 291,
javax.swing.GroupLayout.PREFERRED_SIZE)))
    .addContainerGap(47, Short.MAX_VALUE))

```

```

);

jPanel1Layout.setVerticalGroup(
    jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(jPanel1Layout.createSequentialGroup()
            .addGap(24, 24, 24)
            .addComponent(jLabel1)
            .addGap(18, 18, 18)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(jLabel2)
            .addComponent(element1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(insertrear))
            .addGap(31, 31, 31)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addComponent(element2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(insertfront))
            .addGap(18, 18, 18)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(deleterear)
            .addComponent(deletefront))
            .addGap(18, 18, 18)

        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
            .addComponent(displayforward, javax.swing.GroupLayout.PREFERRED_SIZE, 23,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(displayreverse))
            .addGap(28, 28, 28)

```

```
        .addComponent(displaybox, javax.swing.GroupLayout.PREFERRED_SIZE,  
        javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)  
        .addGap(41, 41, 41))  
    );
```

```
    getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 400,  
    300));
```

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

```
private void insertrearActionPerformed(java.awt.event.ActionEvent evt) {  
    //code for insertionrear  
    Node temp;  
    int elem1=Integer.valueOf(element1.getText());  
    Node newnode=new Node();  
    newnode.data=elem1;  
    newnode.nextlink=null;  
    newnode.prevlink=null;  
    String message="Data insert @" +newnode.data+"Rear end";  
    JOptionPane.showMessageDialog(rootPane,message);  
    if(first==null)  
    {  
        first=newnode;  
    }  
    else  
    {  
        temp=first;  
        while(temp.nextlink!=null)  
        {  
            temp=temp.nextlink;  
        }  
    }  
}
```

```

temp.nextlink=newnode;
newnode.prevlink=temp;
element1.setText("");

}
// TODO add your handling code here:
}

private void insertfrontActionPerformed(java.awt.event.ActionEvent evt) {
//code for insertionfront
Node temp;
int elem2=Integer.valueOf(element2.getText());
Node newnode=new Node();
newnode.data=elem2;
newnode.nextlink=null;
newnode.prevlink=null;
String message="Data insert @ "+newnode.data+"Front end";
JOptionPane.showMessageDialog(rootPane,message);
if(first==null)
{
first=newnode;
}
else
{
newnode.nextlink=first;
first.prevlink=newnode;
first=newnode;
element2.setText("");

}
// TODO add your handling code here:

```

```
}
```

```
    private void deleterearActionPerformed(java.awt.event.ActionEvent evt) {  
//code for deleterear  
String msg="";  
Node temp;  
if(first==null)  
{  
JOptionPane.showMessageDialog(rootPane,"deletion not possible");  
  
}  
else if(first.nextlink==null)  
{  
String message="deleted element is"+first.data;  
JOptionPane.showMessageDialog(rootPane,msg);  
first=null;  
}  
else  
{  
    temp=first;  
    while(temp.nextlink.nextlink!=null)  
    {  
        temp=temp.nextlink;  
    }  
    msg="deletion element is"+temp.nextlink.data;  
    JOptionPane.showMessageDialog(rootPane,msg);  
    temp.nextlink=null;  
  
}  
  
// TODO add your handling code here:
```

```
}
```

```
private void deletefrontActionPerformed(java.awt.event.ActionEvent evt) {
```

```
//code for deletefront
```

```
String msg="";
```

```
Node temp;
```

```
if(first==null)
```

```
{
```

```
    JOptionPane.showMessageDialog(rootPane,"deletion not possible");
```

```
}
```

```
else if(first.nextlink==null)
```

```
{
```

```
    String message="deleted element is"+first.data;
```

```
JOptionPane.showMessageDialog(rootPane,message);
```

```
first=null;
```

```
}
```

```
else
```

```
{
```

```
    String message="deleted element is"+first.data;
```

```
JOptionPane.showMessageDialog(rootPane,message);
```

```
first=first.nextlink;
```

```
first.prevlink=null;
```

```
}
```

```
// TODO add your handling code here:
```



```

    }

    private void displayforwardActionPerformed(java.awt.event.ActionEvent evt) {
        //code for displayforward

        String msg="";
        Node temp;
        if(first==null)
        {
            JOptionPane.showMessageDialog(rootPane,"display not possible");
        }
        else if(first.nextlink==null)
        {
            msg=msg+" "+first.data;
            JOptionPane.showMessageDialog(rootPane,msg);
            first=null;
        }
        else
        {
            temp=first;
            while(temp!=null)
            {
                msg=msg+" "+temp.data;
                JOptionPane.showMessageDialog(rootPane,msg);
                temp=temp.nextlink;
            }
            displaybox.setText(msg);
        }
        // TODO add your handling code here:
    }

```

```

    private void displayreverseActionPerformed(java.awt.event.ActionEvent evt) {

```

```

//code for displayreverse

String msg="";
Node temp=null;
if(first==null)
{
JOptionPane.showMessageDialog(rootPane,"display not possible");
}
else if(first.nextlink==null)
{
JOptionPane.showMessageDialog(rootPane,first.data);
}
else
{
temp=first;
while(temp.nextlink!=null)
{
temp=temp.nextlink;
}
while(temp!=null)
{
msg=msg+" "+temp.data;
JOptionPane.showMessageDialog(rootPane, msg);
temp=temp.prevlink;
}
displaybox.setText(msg);
}
// TODO add your handling code here:
}

private void displayboxActionPerformed(java.awt.event.ActionEvent evt) {
// TODO add your handling code here:

```

```

}

/**
 * @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(Doublylinkedlist.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(Doublylinkedlist.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(Doublylinkedlist.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

```

```
java.util.logging.Logger.getLogger(Doublylinkedlist.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 Doublylinkedlist().setVisible(true);
```

```
    }
```

```
});
```

```
}
```

```
// Variables declaration - do not modify
```

```
private javax.swing.JButton deletefront;
```

```
private javax.swing.JButton deleterear;
```

```
private javax.swing.JTextField displaybox;
```

```
private javax.swing.JButton displayforward;
```

```
private javax.swing.JButton displayreverse;
```

```
private javax.swing.JTextField element1;
```

```
private javax.swing.JTextField element2;
```

```
private javax.swing.JButton insertfront;
```

```
private javax.swing.JButton insertrear;
```

```
private javax.swing.JLabel jLabel1;
```

```
private javax.swing.JLabel jLabel2;
```

```
private javax.swing.JLabel jLabel3;
```

```
private javax.swing.JPanel jPanel1;
```

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

```
}
```

OUTPUT

