Facultatea Calculatoare, Informatica si Microelectronica

Universitatea Tehnica a Moldovei

Medii Interactive de Dezvoltare a Produselor Soft

Lucrarea de laborator#3

GUI Development

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Lucrarea de laborator 3

Scopul lucrarii

Realizeaza un simplu GUI Calculator

Obiective

Advanced Level (nota 9 —— 10):

- Realizeaza un simplu GUI calculator care suporta urmatoare functii: +, -, /, *, putere, radical, InversareSemn(+/-), operatii cu numere zecimale.
- Divizare proiectului in doua module - Interfata grafica(Modul GUI) si Modulul de baza(Core Module).

Implimentarea programului

Listingul programului

```
/*
 * 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.
 */
package clac.stuff;

/**
 *
 * @author Sandu
 */
public class Calc extends javax.swing.JFrame {

    double FirstNum, secondNum, result;
    int plusClicked, minusClicked, multiplyClicked, divideClicked, squareClicked,
        pointClicked=0, equalClicked=0;

    /**
     * Creates new form Calc
     */
    public Calc() {
        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">//GEN-BEGIN:initComponents
    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
        display = new javax.swing.JTextField();
        jPanel2 = new javax.swing.JPanel();
        seven = new javax.swing.JButton();
        eight = new javax.swing.JButton();
```

```
nine = new javax.swing.JButton();
six = new javax.swing.JButton();
five = new javax.swing.JButton();
four = new javax.swing.JButton();
three = new javax.swing.JButton();
two = new javax.swing.JButton();
one = new javax.swing.JButton();
point = new javax.swing.JButton();
zero = new javax.swing.JButton();
divide = new javax.swing.JButton();
minus = new javax.swing.JButton();
multiply = new javax.swing.JButton();
plus = new javax.swing.JButton();
equal = new javax.swing.JButton();
plusminus = new javax.swing.JButton();
square = new javax.swing.JButton();
squareroot = new javax.swing.JButton();
clear = new javax.swing.JButton();
pi = new javax.swing.JButton();
allclear = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
setTitle("Calculator");
setCursor(new java.awt.Cursor(java.awt.Cursor.DEFAULT_CURSOR));
setPreferredSize(new java.awt.Dimension(310, 360));
setResizable(false);

display.setEditable(false);
display.setFont(new java.awt.Font("Serif", 0, 18)); // NOI18N
display.setHorizontalAlignment(javax.swing.JTextField.RIGHT);
display.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        displayActionPerformed(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(display, javax.swing.GroupLayout.PREFERRED_SIZE, 287,
            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(display, javax.swing.GroupLayout.PREFERRED_SIZE, 44,
            javax.swing.GroupLayout.PREFERRED_SIZE)
        .addContainerGap(26, Short.MAX_VALUE))
);

seven.setText("7");
seven.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        sevenActionPerformed(evt);
    }
});

eight.setText("8");
eight.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        eightActionPerformed(evt);
    }
});

nine.setText("9");
nine.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        nineActionPerformed(evt);
    }
});

six.setText("6");
six.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        sixActionPerformed(evt);
    }
});

five.setText("5");
five.addActionListener(new java.awt.event.ActionListener() {
```

```
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        fiveActionPerformed(evt);
    }
});

four.setText("4");
four.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        fourActionPerformed(evt);
    }
});

three.setText("3");
three.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        threeActionPerformed(evt);
    }
});

two.setText("2");
two.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        twoActionPerformed(evt);
    }
});

one.setText("1");
one.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        oneActionPerformed(evt);
    }
});

point.setText(".");
point.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        pointActionPerformed(evt);
    }
});

zero.setText("0");
zero.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
        zeroActionPerformed(evt);
    }
});

divide.setText("/");
divide.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        divideActionPerformed(evt);
    }
});

minus.setText("-");
minus.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        minusActionPerformed(evt);
    }
});

multiply.setText("*");
multiply.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        multiplyActionPerformed(evt);
    }
});

plus.setText("+");
plus.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        plusActionPerformed(evt);
    }
});

equal.setText("=");
equal.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        equalActionPerformed(evt);
    }
});

plusminus.setText("[U+FFFD] ");
plusminus.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        plusminusActionPerformed(evt);
```

```
    }
});

square.setText("x[U+FFFD]");
square.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        squareActionPerformed(evt);
    }
});

squareroot.setText("[U+FFFD]");
squareroot.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        squarerootActionPerformed(evt);
    }
});

clear.setText("<-");
clear.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        clearActionPerformed(evt);
    }
});

pi.setText("pi");
pi.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        piActionPerformed(evt);
    }
});

allclear.setText("C");
allclear.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        allclearActionPerformed(evt);
    }
});

javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
jPanel2.setLayout(jPanel2Layout);
jPanel2Layout.setHorizontalGroup(
    jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(jPanel2Layout.createSequentialGroup()
```

```
.addContainerGap()
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
    .addGroup(jPanel2Layout.createSequentialGroup()
        .addComponent(seven)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
        .addComponent(eight)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
        .addComponent(nine))
    .addGroup(jPanel2Layout.createSequentialGroup()
        .addComponent(four)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
        .addComponent(five)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
        .addComponent(six))
    .addGroup(jPanel2Layout.createSequentialGroup()
        .addComponent(one)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
        .addComponent(two)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
        .addComponent(three))
    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
        jPanel2Layout.createSequentialGroup()
        .addComponent(zero, javax.swing.GroupLayout.PREFERRED_SIZE, 82,
            javax.swing.GroupLayout.PREFERRED_SIZE)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
        .addComponent(point)))
.addGap(18, 18, 18)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
    false)
    .addComponent(plus, javax.swing.GroupLayout.DEFAULT_SIZE,
        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
    .addComponent(minus, javax.swing.GroupLayout.DEFAULT_SIZE,
        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
    .addComponent(multiply, javax.swing.GroupLayout.DEFAULT_SIZE,
        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
    .addComponent(divide, javax.swing.GroupLayout.DEFAULT_SIZE,
        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
    .addGroup(jPanel2Layout.createSequentialGroup()
        .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Align
            false)
```

```
                    .addComponent(square, javax.swing.GroupLayout.DEFAULT_SIZE,
                        45, Short.MAX_VALUE)
                    .addComponent(squareroot,
                        javax.swing.GroupLayout.DEFAULT_SIZE,
                        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
                    .addComponent(clear, javax.swing.GroupLayout.PREFERRED_SIZE,
                        45, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(allclear,
                        javax.swing.GroupLayout.PREFERRED_SIZE, 45,
                        javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(0, 0, Short.MAX_VALUE))
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
                    false)
                    .addComponent(plusminus, javax.swing.GroupLayout.DEFAULT_SIZE,
                        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addComponent(pi, javax.swing.GroupLayout.DEFAULT_SIZE,
                        javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(equal, javax.swing.GroupLayout.DEFAULT_SIZE,
                    javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)))
        .addContainerGap())
);
jPanel2Layout.setVerticalGroup(
    jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(jPanel2Layout.createSequentialGroup()
        .addContainerGap()
        .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
                    .addComponent(seven, javax.swing.GroupLayout.PREFERRED_SIZE,
                        40, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(eight, javax.swing.GroupLayout.PREFERRED_SIZE,
                        40, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(nine, javax.swing.GroupLayout.PREFERRED_SIZE,
                        40, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(divide, javax.swing.GroupLayout.PREFERRED_SIZE,
                        40, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
```

```
                .addComponent(four, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(five, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(six, javax.swing.GroupLayout.PREFERRED_SIZE, 40,
                    javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(multiply,
                    javax.swing.GroupLayout.PREFERRED_SIZE, 40,
                    javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
            .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
                .addComponent(one, javax.swing.GroupLayout.PREFERRED_SIZE, 40,
                    javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(two, javax.swing.GroupLayout.PREFERRED_SIZE, 40,
                    javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(three, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(minus, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
               javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
                .addComponent(zero, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(point, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(plus, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(pi, javax.swing.GroupLayout.PREFERRED_SIZE, 40,
                    javax.swing.GroupLayout.PREFERRED_SIZE)))
        .addGroup(jPanel2Layout.createSequentialGroup()
            .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
                .addComponent(squareroot,
                    javax.swing.GroupLayout.PREFERRED_SIZE, 40,
                    javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(clear, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
            .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
                .addComponent(square, javax.swing.GroupLayout.PREFERRED_SIZE,
                    40, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(allclear,
                    javax.swing.GroupLayout.PREFERRED_SIZE, 40,
```

```
                        javax.swing.GroupLayout.PREFERRED_SIZE))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Align
                    .addComponent(plusminus,
                        javax.swing.GroupLayout.PREFERRED_SIZE, 40,
                        javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(equal, javax.swing.GroupLayout.PREFERRED_SIZE,
                        86, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(0, 0, Short.MAX_VALUE)))
            .addContainerGap())
    );

    javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
    getContentPane().setLayout(layout);
    layout.setHorizontalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
            javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
            javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
    );
    layout.setVerticalGroup(
        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)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
            .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
                javax.swing.GroupLayout.DEFAULT_SIZE,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addContainerGap())
    );

    pack();
}// </editor-fold>//GEN-END:initComponents

private void displayActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_displayActionPerformed
    // TODO add your handling code here:
}//GEN-LAST:event_displayActionPerformed
```

```
private void zeroActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_zeroActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+zero.getText());
}//GEN-LAST:event_zeroActionPerformed

private void oneActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_oneActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+one.getText());
}//GEN-LAST:event_oneActionPerformed

private void twoActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_twoActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+two.getText());
}//GEN-LAST:event_twoActionPerformed

private void threeActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_threeActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+three.getText());
}//GEN-LAST:event_threeActionPerformed

private void fourActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_fourActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+four.getText());
```

```
}//GEN-LAST:event_fourActionPerformed

private void pointActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_pointActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    if(pointClicked==0){
        if(display.getText().equals("")){
            display.setText(display.getText()+"0"+point.getText());
        }else{
            display.setText(display.getText()+point.getText());
        }
    }
    pointClicked=1;
}//GEN-LAST:event_pointActionPerformed

private void fiveActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_fiveActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+five.getText());
}//GEN-LAST:event_fiveActionPerformed

private void sixActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_sixActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+six.getText());
}//GEN-LAST:event_sixActionPerformed

private void sevenActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_sevenActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+seven.getText());
```

```
}//GEN-LAST:event_sevenActionPerformed

private void eightActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_eightActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+eight.getText());
}//GEN-LAST:event_eightActionPerformed

private void nineActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_nineActionPerformed
    if(equalClicked==1) {
        display.setText("");
        equalClicked=0;
    }
    display.setText(display.getText()+nine.getText());
}//GEN-LAST:event_nineActionPerformed

private void clearActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_clearActionPerformed
    String text;
    text = display.getText();
    int len = text.length();
    text = text.substring(0, len-1);
    display.setText(text);

}//GEN-LAST:event_clearActionPerformed

private void allclearActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_allclearActionPerformed
    display.setText("");
    pointClicked=0;
    FirstNum=secondNum=0;
}//GEN-LAST:event_allclearActionPerformed

private void plusActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_plusActionPerformed
    FirstNum = Double.parseDouble(display.getText());
    display.setText("");

    plusClicked =1;
```

```
    minusClicked = multiplyClicked = divideClicked = squareClicked = pointClicked =
        equalClicked = 0;
}//GEN-LAST:event_plusActionPerformed

private void equalActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_equalActionPerformed
    if(display.getText().isEmpty()){
        secondNum=FirstNum;
    }else{
        secondNum=Double.parseDouble(display.getText());
    }
    if(plusClicked>0){
        result = FirstNum + secondNum;
        display.setText(String.valueOf(result));
    }else if(minusClicked>0){
        result = FirstNum - secondNum;
        display.setText(String.valueOf(result));
    }else if(multiplyClicked>0){
        result = FirstNum * secondNum;
        display.setText(String.valueOf(result));
    }else if(divideClicked>0){
        result = FirstNum / secondNum;
        display.setText(String.valueOf(result));
    }
    FirstNum = Double.parseDouble(display.getText());
    equalClicked=1;
}//GEN-LAST:event_equalActionPerformed

private void minusActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_minusActionPerformed
    FirstNum = Double.parseDouble(display.getText());
    display.setText("");

    minusClicked =1;
    plusClicked = multiplyClicked = divideClicked = squareClicked = pointClicked =
        equalClicked = 0;
}//GEN-LAST:event_minusActionPerformed

private void multiplyActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_multiplyActionPerformed
    FirstNum = Double.parseDouble(display.getText());
    display.setText("");
```

```
    multiplyClicked =1;
    minusClicked = plusClicked = divideClicked = squareClicked = pointClicked =
        equalClicked = 0;
}//GEN-LAST:event_multiplyActionPerformed

private void divideActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_divideActionPerformed
    FirstNum = Double.parseDouble(display.getText());
    display.setText("");

    divideClicked =1;
    minusClicked = multiplyClicked = plusClicked = squareClicked = pointClicked =
        equalClicked = 0;
}//GEN-LAST:event_divideActionPerformed

private void squarerootActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_squarerootActionPerformed
    if(minusClicked==0 && multiplyClicked==0 && plusClicked==0 && divideClicked==0){
        FirstNum = Double.parseDouble(display.getText());
    }
    display.setText(String.valueOf(Math.sqrt(FirstNum)));
}//GEN-LAST:event_squarerootActionPerformed

private void piActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_piActionPerformed
    display.setText(String.valueOf(Math.PI));
}//GEN-LAST:event_piActionPerformed

private void squareActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_squareActionPerformed
    FirstNum = Double.parseDouble(display.getText());
    display.setText(String.valueOf(Math.pow(FirstNum,2)));
}//GEN-LAST:event_squareActionPerformed

private void plusminusActionPerformed(java.awt.event.ActionEvent evt)
    {//GEN-FIRST:event_plusminusActionPerformed
    FirstNum = Double.parseDouble(display.getText());
    display.setText(String.valueOf((-1)*(FirstNum)));
}//GEN-LAST:event_plusminusActionPerformed

/**
 * @param args the command line arguments
 */
```

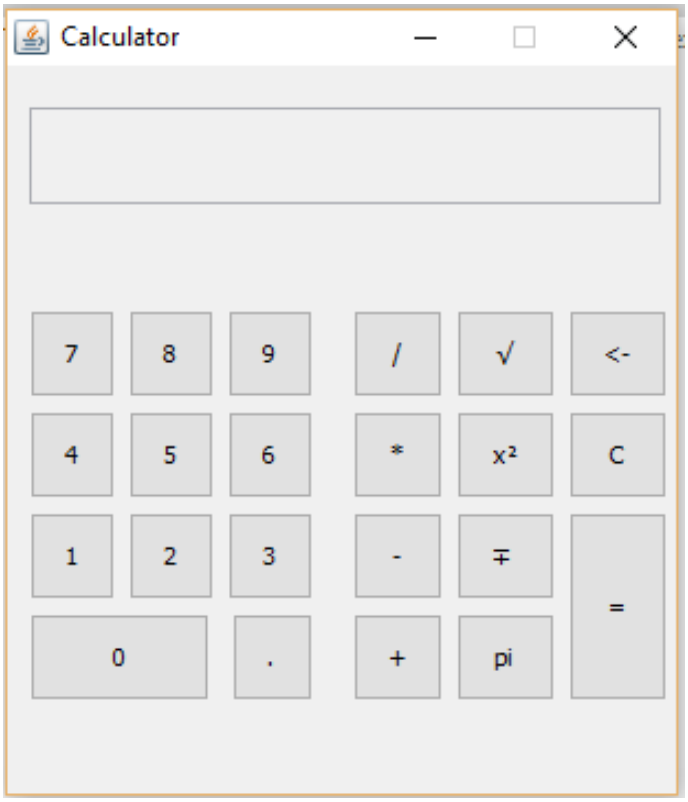
```
public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code
        (optional) ">
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default
        look and feel.
     * For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

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

// Variables declaration - do not modify//GEN-BEGIN:variables
private javax.swing.JButton allclear;
private javax.swing.JButton clear;
```

```
    private javax.swing.JTextField display;
    private javax.swing.JButton divide;
    private javax.swing.JButton eight;
    private javax.swing.JButton equal;
    private javax.swing.JButton five;
    private javax.swing.JButton four;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JButton minus;
    private javax.swing.JButton multiply;
    private javax.swing.JButton nine;
    private javax.swing.JButton one;
    private javax.swing.JButton pi;
    private javax.swing.JButton plus;
    private javax.swing.JButton plusminus;
    private javax.swing.JButton point;
    private javax.swing.JButton seven;
    private javax.swing.JButton six;
    private javax.swing.JButton square;
    private javax.swing.JButton squareroot;
    private javax.swing.JButton three;
    private javax.swing.JButton two;
    private javax.swing.JButton zero;
    // End of variables declaration//GEN-END:variables
}
```

Captura de ecran


Calculator
7
8
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-
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+
pi

Concluzie

In urma efectuarii acestei lucrari de laborator am facut cunostinta cu modulul GDI al programului NetBeans astfel am creat un simplu calculator in limbajul Java, avind functiile de baza +,-,*,/,putere, radical, schimbare semn. Efecuind acesta sarcina am luat cunostinta cu limbajul Java care este un limbaj usor de implimentat in cod si poate fi usor construit un calculator simplu utilizind butoane, si casete de text.