**/////////////////////////////////////////////////////////////////TelaCalculadora**

package treinamentointerfacegui;

import javax.swing.JOptionPane;

public class TelaCalculadora extends javax.swing.JFrame {

Calculadora calculadora = new Calculadora();

StringBuilder compondo = new StringBuilder();

/\*\*Creates new form TelaCalculadora\*/

public TelaCalculadora() {

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() {

buttonGroup1 = new javax.swing.ButtonGroup();

jButton7 = new javax.swing.JButton();

jButton8 = new javax.swing.JButton();

jButton9 = new javax.swing.JButton();

jButtonDividir = new javax.swing.JButton();

jButtonCE = new javax.swing.JButton();

jButton4 = new javax.swing.JButton();

jButton5 = new javax.swing.JButton();

jButton6 = new javax.swing.JButton();

jButtonVezes = new javax.swing.JButton();

Igual = new javax.swing.JButton();

jButton1 = new javax.swing.JButton();

jButton2 = new javax.swing.JButton();

jButton3 = new javax.swing.JButton();

jButtonMenos = new javax.swing.JButton();

jButtonMais = new javax.swing.JButton();

jButtonVirgula = new javax.swing.JButton();

jButton0 = new javax.swing.JButton();

txtCalc = new javax.swing.JTextField();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

jButton7.setText("7");

jButton7.addActionListener(new java.awt.event.ActionListener() {

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

jButton7ActionPerformed(evt);

}

});

jButton8.setText("8");

jButton9.setText("9");

jButtonDividir.setText("/");

jButtonCE.setText("CE");

jButton4.setText("4");

jButton5.setText("5");

jButton6.setText("6");

jButtonVezes.setText("\*");

Igual.setText("=");

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

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

IgualActionPerformed(evt);

}

});

jButton1.setText("1");

jButton2.setText("2");

jButton3.setText("3");

jButtonMenos.setText("-");

jButtonMais.setText("+");

jButtonVirgula.setText(",");

jButton0.setText("0");

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

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

txtCalcActionPerformed(evt);

}

});

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

getContentPane().setLayout(layout);

layout.setHorizontalGroup(

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

.addGroup(layout.createSequentialGroup()

.addGap(23, 23, 23)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addGroup(layout.createSequentialGroup()

.addComponent(jButton0, javax.swing.GroupLayout.PREFERRED\_SIZE, 172, javax.swing.GroupLayout.PREFERRED\_SIZE)

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

.addComponent(jButtonVirgula, javax.swing.GroupLayout.PREFERRED\_SIZE, 78, javax.swing.GroupLayout.PREFERRED\_SIZE)

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

.addComponent(jButtonMais, javax.swing.GroupLayout.PREFERRED\_SIZE, 73, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGroup(layout.createSequentialGroup()

.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED\_SIZE, 80, javax.swing.GroupLayout.PREFERRED\_SIZE)

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

.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED\_SIZE, 82, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(10, 10, 10)

.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED\_SIZE, 78, javax.swing.GroupLayout.PREFERRED\_SIZE)

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

.addComponent(jButtonMenos, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jButton4, javax.swing.GroupLayout.DEFAULT\_SIZE, 80, Short.MAX\_VALUE)

.addComponent(jButton7, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

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

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

.addComponent(jButton8, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton5, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

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

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jButton9, javax.swing.GroupLayout.DEFAULT\_SIZE, 78, Short.MAX\_VALUE)

.addComponent(jButton6, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

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

.addGroup(layout.createSequentialGroup()

.addGap(10, 10, 10)

.addComponent(jButtonVezes, javax.swing.GroupLayout.PREFERRED\_SIZE, 73, javax.swing.GroupLayout.PREFERRED\_SIZE))

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

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

.addComponent(jButtonDividir, javax.swing.GroupLayout.PREFERRED\_SIZE, 72, javax.swing.GroupLayout.PREFERRED\_SIZE)))))

.addGap(5, 5, 5)

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

.addComponent(Igual, javax.swing.GroupLayout.PREFERRED\_SIZE, 45, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButtonCE))

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addComponent(txtCalc)

.addContainerGap())

);

layout.setVerticalGroup(

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

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addComponent(txtCalc, javax.swing.GroupLayout.PREFERRED\_SIZE, 56, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 48, Short.MAX\_VALUE)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jButton7, javax.swing.GroupLayout.DEFAULT\_SIZE, 45, Short.MAX\_VALUE)

.addComponent(jButton8, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButtonDividir, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton9, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

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

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

.addComponent(jButton4, javax.swing.GroupLayout.PREFERRED\_SIZE, 40, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton5, javax.swing.GroupLayout.PREFERRED\_SIZE, 40, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton6, javax.swing.GroupLayout.PREFERRED\_SIZE, 39, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButtonVezes, javax.swing.GroupLayout.PREFERRED\_SIZE, 40, javax.swing.GroupLayout.PREFERRED\_SIZE)))

.addComponent(jButtonCE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addGap(15, 15, 15)

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

.addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE, false)

.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED\_SIZE, 42, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED\_SIZE, 42, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButtonMenos, javax.swing.GroupLayout.PREFERRED\_SIZE, 42, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED\_SIZE, 42, javax.swing.GroupLayout.PREFERRED\_SIZE))

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

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

.addComponent(jButtonVirgula, javax.swing.GroupLayout.PREFERRED\_SIZE, 50, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButtonMais, javax.swing.GroupLayout.PREFERRED\_SIZE, 50, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jButton0, javax.swing.GroupLayout.PREFERRED\_SIZE, 49, javax.swing.GroupLayout.PREFERRED\_SIZE)))

.addComponent(Igual, javax.swing.GroupLayout.PREFERRED\_SIZE, 98, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(27, 27, 27))

);

pack();

}// </editor-fold>

private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

}

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

// TODO add your handling code here:

}

private void txtCalcActionPerformed(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(TelaCalculadora.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

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

}

});

}

// Variables declaration - do not modify

private javax.swing.JButton Igual;

private javax.swing.ButtonGroup buttonGroup1;

private javax.swing.JButton jButton0;

private javax.swing.JButton jButton1;

private javax.swing.JButton jButton2;

private javax.swing.JButton jButton3;

private javax.swing.JButton jButton4;

private javax.swing.JButton jButton5;

private javax.swing.JButton jButton6;

private javax.swing.JButton jButton7;

private javax.swing.JButton jButton8;

private javax.swing.JButton jButton9;

private javax.swing.JButton jButtonCE;

private javax.swing.JButton jButtonDividir;

private javax.swing.JButton jButtonMais;

private javax.swing.JButton jButtonMenos;

private javax.swing.JButton jButtonVezes;

private javax.swing.JButton jButtonVirgula;

private javax.swing.JTextField txtCalc;

// End of variables declaration

private void btn1MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("1");

txtCalc.setText(compondo.toString());

}

private void btn2MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("2");

txtCalc.setText(compondo.toString());

}

private void btn3MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("3");

txtCalc.setText(compondo.toString());

}

private void btn4MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("4");

txtCalc.setText(compondo.toString());

}

private void btn5MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("5");

txtCalc.setText(compondo.toString());

}

private void btn6MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("6");

txtCalc.setText(compondo.toString());

}

private void btn7MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("7");

txtCalc.setText(compondo.toString());

}

private void btn8MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("8");

txtCalc.setText(compondo.toString());

}

private void btn9MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("9");

txtCalc.setText(compondo.toString());

}

private void btn0MouseClicked(java.awt.event.MouseEvent evt){

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append("0");

txtCalc.setText(compondo.toString());

}

private void btnVirgulaMouseClicked(java.awt.event.MouseEvent evt){

int temVirgula = compondo.indexOf(".");

if (temVirgula != -1){

JOptionPane.showMessageDialog(null, "Já tem separador decimal");

}else{

compondo.delete(0,compondo.length());

compondo.append(txtCalc.getText());

compondo.append(".");

txtCalc.setText(compondo.toString());

}

}

private void btnMaisMouseClicked(java.awt.event.MouseEvent evt){

calculadora.setValor(Double.parseDouble(txtCalc.getText()));

calculadora.setOperacao(1); //1 para soma;

txtCalc.setText("");

}

private void btnIgualMouseClicked(java.awt.event.MouseEvent evt){

if (calculadora.getOperacao()==1){

calculadora.somar(Double.parseDouble(txtCalc.getText()));

txtCalc.setText(Double.toString(calculadora.getValor()));

}

if (calculadora.getOperacao()==2){

calculadora.subtrair(Double.parseDouble(txtCalc.getText()));

txtCalc.setText(Double.toString(calculadora.getValor()));

}

if (calculadora.getOperacao()==3){

calculadora.multiplicar(Double.parseDouble(txtCalc.getText()));

txtCalc.setText(Double.toString(calculadora.getValor()));

}

if (calculadora.getOperacao()==4){

calculadora.dividir(Double.parseDouble(txtCalc.getText()));

txtCalc.setText(Double.toString(calculadora.getValor()));

}

}

private void btnMenosMouseClicked(java.awt.event.MouseEvent evt){

calculadora.setValor(Double.parseDouble(txtCalc.getText()));

calculadora.setOperacao(2); //2 para subtrair;

txtCalc.setText("");

}

private void btnVezesMouseClicked(java.awt.event.MouseEvent evt){

calculadora.setValor(Double.parseDouble(txtCalc.getText()));

calculadora.setOperacao(3); //3 para multiplicar;

txtCalc.setText("");

}

private void btnDividirMouseClicked(java.awt.event.MouseEvent evt){

calculadora.setValor(Double.parseDouble(txtCalc.getText()));

calculadora.setOperacao(4); //4 para dividir;

txtCalc.setText("");

}

private void btnCEMouseClicked(java.awt.event.MouseEvent evt){

txtCalc.setText("");

}

}

**/////////////////////////////////////////////////////////////////Calculadora**

package treinamentointerfacegui;

import javax.swing.JOptionPane;

public class Calculadora {

//Campo Valor

private double valor;

private int operacao;

//metodos getters and setter

public double getValor() {

return valor;

}

public void setValor(double valor) {

this.valor = valor;

}

public int getOperacao() {

return operacao;

}

public void setOperacao(int operacao) {

this.operacao = operacao;

}

//metodos da classe

public void somar (double segValor){

this.valor+= segValor;

}

public void subtrair (double segValor){

this.valor-=segValor;

}

public void multiplicar (double segValor){

this.valor\*=segValor;

}

public void dividir (double segValor){

try {

if (segValor!=0)

this.valor /= segValor;

else

throw new ArithmeticException();

} catch (ArithmeticException e) {

JOptionPane.showMessageDialog(null, "Aconteceu um erro: Impossivel dividir por ZERO");

}

}

}

**/////////////////////////////////////////////////////////////////Principal**

package treinamentointerfacegui;

public class Principal {

public static void main(String[] args) {

TelaCalculadora tela = new TelaCalculadora();

tela.setVisible(true);

}

}