Ministerul Educației al Republicii Moldova

Universitatea Tehnică a Moldovei

Facultatea CIM

Catedra Automatica și Tehnologii Informaționale

**RAPORT**

Lucrare de laborator Nr.3

*La MIDPS*

|  |  |
| --- | --- |
| A efectuat: | st. Gr. TI-142  Chirica Valeriu |
| A verificat: | lect. asist.  Cojanu Irina |

Chișinău 2016

**Lucrarea de laborator nr.3**

**Tema:** *GUI Development*

**Scopul lucrării:**

Realizeaza un simplu GUI Calculator

Operatiile simple: +,-,\*,/,putere,radical,InversareSemn(+/-),operatii cu numere zecimale.

Divizare proiectului in doua module - Interfata grafica(Modul GUI) si Modulul de baza(Core Module).

**Sarcina lucrării:**

- Basic Level (nota 5 || 6):

Realizeaza un simplu GUI calculator care suporta functiile de baza: +, -, /, \*.

- Normal Level (nota 7 || 8):

Realizeaza un simplu GUI calculator care suporta urmatoare functii: +, -, /, \*, putere, radical, InversareSemn(+/-).

- Advanced Level (nota 9 || 10):

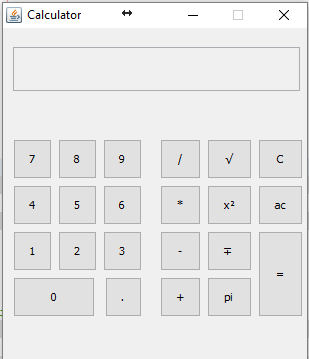
Realizeaza un simplu GUI calculator care suporta urmatoare functii: +, -, /, \*, putere, radical, InversareSemn(+/-), operatii cu numere zecimale.

Divizare proiectului in doua module - Interfata grafica(Modul GUI) si Modulul de baza(Core Module).

**Listing-ul programului:**

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| --- |
| /\*  \* 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("∓ ");  plusminus.addActionListener(new java.awt.event.ActionListener() {  public void actionPerformed(java.awt.event.ActionEvent evt) {  plusminusActionPerformed(evt);  }  });  square.setText("x²");  square.addActionListener(new java.awt.event.ActionListener() {  public void actionPerformed(java.awt.event.ActionEvent evt) {  squareActionPerformed(evt);  }  });  squareroot.setText("√");  squareroot.addActionListener(new java.awt.event.ActionListener() {  public void actionPerformed(java.awt.event.ActionEvent evt) {  squarerootActionPerformed(evt);  }  });  clear.setText("C");  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("ac");  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.LEADING)  .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.LEADING, 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.LEADING)  .addGroup(jPanel2Layout.createSequentialGroup()  .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, 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.Alignment.LEADING)  .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.Alignment.LEADING, 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.LEADING)  .addGroup(jPanel2Layout.createSequentialGroup()  .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)  .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.Alignment.BASELINE)  .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.Alignment.BASELINE)  .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.Alignment.BASELINE)  .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.Alignment.LEADING)  .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.Alignment.BASELINE)  .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.Alignment.LEADING)  .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;  }//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  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  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.SEVERE, null, ex);  } catch (InstantiationException ex) {  java.util.logging.Logger.getLogger(Calc.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);  } catch (IllegalAccessException ex) {  java.util.logging.Logger.getLogger(Calc.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);  } catch (javax.swing.UnsupportedLookAndFeelException ex) {  java.util.logging.Logger.getLogger(Calc.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 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:**



**Concluzie:** În urma efectuării acestei lucrări de laborator am făcut cunoștință cu modulul GDI al programului NetBeans astfel am creat un simplu calculator în limbajul Java, avînd funcțiile de bază +,-,\*,/,putere, radical, schimbare semn. Efecuînd acestă sarcină am luat ucnoștință cu limbajul Java care este un limbaj usor de implimentat în cod și poate fi ușor construit un calculator simplu utilizîmd butoane, si casete de text.