package cal;

import java.awt.EventQueue;

import javax.swing.JFrame;

import javax.swing.JLabel;

import java.awt.Font;

import javax.swing.JTextField;

import javax.swing.JButton;

import java.awt.event.ActionListener;

import java.util.Iterator;

import java.awt.event.ActionEvent;

import javax.swing.SwingConstants;

import javax.swing.JRadioButton;

import javax.swing.ButtonGroup;

public class Calc {

private JFrame frame;

private JTextField textField;

double first;

double second;

double result;

String operationString;

String answerString;

private final ButtonGroup buttonGroup = new ButtonGroup();

/\*\*

\* Launch the application.

\*/

public static void main(String[] args) {

EventQueue.invokeLater(new Runnable() {

public void run() {

try {

Calc window = new Calc();

window.frame.setVisible(true);

} catch (Exception e) {

e.printStackTrace();

}

}

});

}

/\*\*

\* Create the application.

\*/

public Calc() {

initialize();

}

/\*\*

\* Initialize the contents of the frame.

\*/

private void initialize() {

frame = new JFrame();

frame.setBounds(200, 200, 340, 550);

frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

frame.getContentPane().setLayout(null);

JLabel lblNewLabel = new JLabel("Scientific Calculator");

lblNewLabel.setFont(new Font("Tahoma", Font.BOLD, 31));

lblNewLabel.setBounds(10, 11, 393, 33);

frame.getContentPane().add(lblNewLabel);

textField = new JTextField();

textField.setEnabled(false);

textField.setFont(new Font("Tahoma", Font.BOLD, 12));

textField.setBounds(10, 56, 306, 53);

frame.getContentPane().add(textField);

textField.setColumns(10);

final JButton btnNewButton = new JButton("\u221A");

btnNewButton.setEnabled(false);

btnNewButton.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.sqrt(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton.setFont(new Font("Tahoma", Font.BOLD, 15));

btnNewButton.setBounds(10, 141, 54, 53);

frame.getContentPane().add(btnNewButton);

final JButton btnNewButton\_1 = new JButton("1/x");

btnNewButton\_1.setEnabled(false);

btnNewButton\_1.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=1/(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_1.setFont(new Font("Tahoma", Font.BOLD, 10));

btnNewButton\_1.setBounds(10, 191, 54, 53);

frame.getContentPane().add(btnNewButton\_1);

final JButton btnNewButton\_2 = new JButton("x^y");

btnNewButton\_2.setEnabled(false);

btnNewButton\_2.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

first=Double.parseDouble(textField.getText());

textField.setText(" ");

operationString="X^Y";

}

});

btnNewButton\_2.setFont(new Font("Tahoma", Font.BOLD, 10));

btnNewButton\_2.setBounds(10, 244, 54, 53);

frame.getContentPane().add(btnNewButton\_2);

final JButton btnNewButton\_3 = new JButton("x^3");

btnNewButton\_3.setEnabled(false);

btnNewButton\_3.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=(Double.parseDouble(textField.getText()));

a=a\*a\*a;

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_3.setFont(new Font("Tahoma", Font.BOLD, 8));

btnNewButton\_3.setBounds(10, 296, 54, 53);

frame.getContentPane().add(btnNewButton\_3);

final JButton btnNewButton\_4 = new JButton("x^2");

btnNewButton\_4.setEnabled(false);

btnNewButton\_4.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=(Double.parseDouble(textField.getText()));

a=a\*a;

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_4.setFont(new Font("Tahoma", Font.BOLD, 7));

btnNewButton\_4.setBounds(10, 345, 54, 53);

frame.getContentPane().add(btnNewButton\_4);

final JButton btnNewButton\_5 = new JButton("n!");

btnNewButton\_5.setEnabled(false);

btnNewButton\_5.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Double.parseDouble(textField.getText());

double fact=1;

while (a!=0)

{

fact=fact\*a;

a--;

}

textField.setText("");

textField.setText(textField.getText()+fact);

}

});

btnNewButton\_5.setFont(new Font("Tahoma", Font.BOLD, 18));

btnNewButton\_5.setBounds(10, 397, 54, 53);

frame.getContentPane().add(btnNewButton\_5);

final JButton btnPlusMinus = new JButton("+/-");

btnPlusMinus.setEnabled(false);

btnPlusMinus.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Double.parseDouble(String.valueOf(textField.getText()));

a=a\*(-1);

textField.setText(String.valueOf(a));

}

});

btnPlusMinus.setFont(new Font("Tahoma", Font.BOLD, 10));

btnPlusMinus.setBounds(10, 449, 54, 53);

frame.getContentPane().add(btnPlusMinus);

final JButton btnNewButton\_7 = new JButton("e^x");

btnNewButton\_7.setEnabled(false);

btnNewButton\_7.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.exp(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_7.setFont(new Font("Tahoma", Font.BOLD, 10));

btnNewButton\_7.setBounds(68, 141, 54, 53);

frame.getContentPane().add(btnNewButton\_7);

final JButton btnNewButton\_1\_1 = new JButton("Log");

btnNewButton\_1\_1.setEnabled(false);

btnNewButton\_1\_1.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.log(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_1\_1.setFont(new Font("Tahoma", Font.BOLD, 10));

btnNewButton\_1\_1.setBounds(68, 191, 54, 53);

frame.getContentPane().add(btnNewButton\_1\_1);

final JButton btn7= new JButton("7");

btn7.setEnabled(false);

btn7.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn7.getText();

textField.setText(numberString);

}

});

btn7.setHorizontalAlignment(SwingConstants.RIGHT);

btn7.setFont(new Font("Tahoma", Font.BOLD, 25));

btn7.setBounds(68, 296, 54, 53);

frame.getContentPane().add(btn7);

final JButton btn4 = new JButton("4");

btn4.setEnabled(false);

btn4.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn4.getText();

textField.setText(numberString);

}

});

btn4.setFont(new Font("Tahoma", Font.BOLD, 25));

btn4.setBounds(68, 345, 54, 53);

frame.getContentPane().add(btn4);

final JButton btn1 = new JButton("1");

btn1.setEnabled(false);

btn1.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn1.getText();

textField.setText(numberString);

}

});

btn1.setFont(new Font("Tahoma", Font.BOLD, 25));

btn1.setBounds(68, 397, 54, 53);

frame.getContentPane().add(btn1);

final JButton btnNewButton\_8 = new JButton("Sin");

btnNewButton\_8.setEnabled(false);

btnNewButton\_8.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.sin(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_8.setFont(new Font("Tahoma", Font.BOLD, 10));

btnNewButton\_8.setBounds(124, 141, 54, 53);

frame.getContentPane().add(btnNewButton\_8);

final JButton btnClear = new JButton("C");

btnClear.setEnabled(false);

btnClear.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

textField.setText(null);

}

});

btnClear.setFont(new Font("Tahoma", Font.BOLD, 25));

btnClear.setBounds(124, 244, 54, 53);

frame.getContentPane().add(btnClear);

final JButton btn8 = new JButton("8");

btn8.setEnabled(false);

btn8.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn8.getText();

textField.setText(numberString);

}

});

btn8.setFont(new Font("Tahoma", Font.BOLD, 25));

btn8.setBounds(124, 296, 54, 53);

frame.getContentPane().add(btn8);

final JButton btn5 = new JButton("5");

btn5.setEnabled(false);

btn5.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn5.getText();

textField.setText(numberString);

}

});

btn5.setFont(new Font("Tahoma", Font.BOLD, 25));

btn5.setBounds(124, 345, 54, 53);

frame.getContentPane().add(btn5);

final JButton btn2 = new JButton("2");

btn2.setEnabled(false);

btn2.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn2.getText();

textField.setText(numberString);

}

});

btn2.setFont(new Font("Tahoma", Font.BOLD, 25));

btn2.setBounds(124, 397, 54, 53);

frame.getContentPane().add(btn2);

final JButton btn0 = new JButton("0");

btn0.setEnabled(false);

btn0.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn0.getText();

textField.setText(numberString);

}

});

btn0.setFont(new Font("Tahoma", Font.BOLD, 25));

btn0.setBounds(68, 449, 110, 53);

frame.getContentPane().add(btn0);

final JButton btnBackSpace = new JButton("\uF0E7");

btnBackSpace.setEnabled(false);

btnBackSpace.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String backspaceString=null;

if (textField.getText().length()>0)

{

StringBuilder str=new StringBuilder(textField.getText());

str.deleteCharAt(textField.getText().length()-1);

backspaceString=str.toString();

textField.setText(backspaceString);

}

}

});

btnBackSpace.setFont(new Font("Wingdings", Font.BOLD, 15));

btnBackSpace.setBounds(183, 244, 54, 53);

frame.getContentPane().add(btnBackSpace);

final JButton btn9 = new JButton("9");

btn9.setEnabled(false);

btn9.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn9.getText();

textField.setText(numberString);

}

});

btn9.setFont(new Font("Tahoma", Font.BOLD, 25));

btn9.setBounds(183, 296, 54, 53);

frame.getContentPane().add(btn9);

final JButton btn6= new JButton("6");

btn6.setEnabled(false);

btn6.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn6.getText();

textField.setText(numberString);

}

});

btn6.setFont(new Font("Tahoma", Font.BOLD, 25));

btn6.setBounds(183, 345, 54, 53);

frame.getContentPane().add(btn6);

final JButton btn3 = new JButton("3");

btn3.setEnabled(false);

btn3.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btn3.getText();

textField.setText(numberString);

}

});

btn3.setFont(new Font("Tahoma", Font.BOLD, 25));

btn3.setBounds(183, 397, 54, 53);

frame.getContentPane().add(btn3);

final JButton btnDot = new JButton(".");

btnDot.setEnabled(false);

btnDot.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String numberString=textField.getText()+btnDot.getText();

textField.setText(numberString);

}

});

btnDot.setFont(new Font("Tahoma", Font.BOLD, 30));

btnDot.setBounds(183, 449, 54, 53);

frame.getContentPane().add(btnDot);

final JButton btnAdd = new JButton("+");

btnAdd.setEnabled(false);

btnAdd.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

first=Double.parseDouble(textField.getText());

textField.setText(" ");

operationString="+";

}

});

btnAdd.setFont(new Font("Tahoma", Font.BOLD, 15));

btnAdd.setBounds(244, 244, 54, 53);

frame.getContentPane().add(btnAdd);

final JButton btnSub = new JButton("-");

btnSub.setEnabled(false);

btnSub.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

first=Double.parseDouble(textField.getText());

textField.setText(" ");

operationString="-";

}

});

btnSub.setFont(new Font("Tahoma", Font.BOLD, 25));

btnSub.setBounds(244, 296, 54, 53);

frame.getContentPane().add(btnSub);

final JButton btnMul = new JButton("\*");

btnMul.setEnabled(false);

btnMul.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

first=Double.parseDouble(textField.getText());

textField.setText(" ");

operationString="\*";

}

});

btnMul.setFont(new Font("Tahoma", Font.BOLD, 25));

btnMul.setBounds(244, 345, 54, 53);

frame.getContentPane().add(btnMul);

final JButton btnDivide = new JButton("/");

btnDivide.setEnabled(false);

btnDivide.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

first=Double.parseDouble(textField.getText());

textField.setText(" ");

operationString="/";

}

});

btnDivide.setFont(new Font("Tahoma", Font.BOLD, 25));

btnDivide.setBounds(244, 397, 54, 53);

frame.getContentPane().add(btnDivide);

final JButton btnEqual = new JButton("=");

btnEqual.setEnabled(false);

btnEqual.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

second=Double.parseDouble(textField.getText());

if (operationString=="+")

{

result=first+second;

answerString=String.format("%2f", result);

textField.setText(answerString);

}

else if (operationString=="-")

{

result=first-second;

answerString=String.format("%2f", result);

textField.setText(answerString);

}

else if (operationString=="\*")

{

result=first\*second;

answerString=String.format("%2f", result);

textField.setText(answerString);

}

else if (operationString=="/")

{

result=first/second;

answerString=String.format("%2f", result);

textField.setText(answerString);

}

else if (operationString=="%")

{

result=(first/100)\*second;

answerString=String.format("%2f", result);

textField.setText(answerString);

}

else if (operationString=="X^Y")

{

double resultt=1;

for(int i=0;i<second;i++)

{

resultt=first\*resultt;

}

answerString=String.format("%2f", resultt);

textField.setText(answerString);

}

}

});

btnEqual.setFont(new Font("Tahoma", Font.BOLD, 15));

btnEqual.setBounds(244, 449, 54, 53);

frame.getContentPane().add(btnEqual);

final JButton btnPercentage = new JButton("%");

btnPercentage.setEnabled(false);

btnPercentage.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

first=Double.parseDouble(textField.getText());

textField.setText(" ");

operationString="%";

}

});

btnPercentage.setFont(new Font("Tahoma", Font.BOLD, 15));

btnPercentage.setBounds(68, 244, 54, 53);

frame.getContentPane().add(btnPercentage);

final JButton btnNewButton\_8\_1 = new JButton("Sinh");

btnNewButton\_8\_1.setEnabled(false);

btnNewButton\_8\_1.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.sinh(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_8\_1.setFont(new Font("Tahoma", Font.BOLD, 7));

btnNewButton\_8\_1.setBounds(124, 191, 54, 53);

frame.getContentPane().add(btnNewButton\_8\_1);

final JButton btnNewButton\_8\_2 = new JButton("Cosh");

btnNewButton\_8\_2.setEnabled(false);

btnNewButton\_8\_2.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.cosh(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_8\_2.setFont(new Font("Tahoma", Font.BOLD, 8));

btnNewButton\_8\_2.setBounds(183, 191, 54, 53);

frame.getContentPane().add(btnNewButton\_8\_2);

final JButton btnNewButton\_8\_3 = new JButton("Tanh");

btnNewButton\_8\_3.setEnabled(false);

btnNewButton\_8\_3.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.tanh(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_8\_3.setFont(new Font("Tahoma", Font.BOLD, 8));

btnNewButton\_8\_3.setBounds(244, 191, 54, 53);

frame.getContentPane().add(btnNewButton\_8\_3);

final JButton btnNewButton\_8\_4 = new JButton("Cos");

btnNewButton\_8\_4.setEnabled(false);

btnNewButton\_8\_4.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.cos(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_8\_4.setFont(new Font("Tahoma", Font.BOLD, 10));

btnNewButton\_8\_4.setBounds(183, 141, 54, 53);

frame.getContentPane().add(btnNewButton\_8\_4);

final JButton btnNewButton\_8\_5 = new JButton("Tan");

btnNewButton\_8\_5.setEnabled(false);

btnNewButton\_8\_5.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

double a=Math.tan(Double.parseDouble(textField.getText()));

textField.setText("");

textField.setText(textField.getText()+a);

}

});

btnNewButton\_8\_5.setFont(new Font("Tahoma", Font.BOLD, 10));

btnNewButton\_8\_5.setBounds(244, 141, 54, 53);

frame.getContentPane().add(btnNewButton\_8\_5);

JRadioButton rdbtnNewRadioButton = new JRadioButton("On");

buttonGroup.add(rdbtnNewRadioButton);

rdbtnNewRadioButton.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

btn1.setEnabled(true);

btn2.setEnabled(true);

btn3.setEnabled(true);

btn4.setEnabled(true);

btn5.setEnabled(true);

btn6.setEnabled(true);

btn7.setEnabled(true);

btn8.setEnabled(true);

btn9.setEnabled(true);

btn0.setEnabled(true);

btnDot.setEnabled(true);

btnAdd.setEnabled(true);

btnSub.setEnabled(true);

btnMul.setEnabled(true);

btnDivide.setEnabled(true);

btnPercentage.setEnabled(true);

btnPlusMinus.setEnabled(true);

btnEqual.setEnabled(true);

btnClear.setEnabled(true);

btnNewButton\_8.setEnabled(true);

btnNewButton\_8\_4.setEnabled(true);

btnNewButton\_8\_5.setEnabled(true);

btnNewButton\_8\_2.setEnabled(true);

btnNewButton\_8\_3.setEnabled(true);

btnNewButton\_1\_1.setEnabled(true);

btnNewButton\_7.setEnabled(true);

btnNewButton\_8\_1.setEnabled(true);

btnNewButton.setEnabled(true);

btnBackSpace.setEnabled(true);

btnNewButton\_1.setEnabled(true);

btnNewButton\_2.setEnabled(true);

btnNewButton\_3.setEnabled(true);

btnNewButton\_4.setEnabled(true);

btnNewButton\_5.setEnabled(true);

textField.setEnabled(true);

}

});

rdbtnNewRadioButton.setFont(new Font("Tahoma", Font.BOLD, 15));

rdbtnNewRadioButton.setBounds(6, 116, 58, 23);

frame.getContentPane().add(rdbtnNewRadioButton);

JRadioButton rdbtnOff = new JRadioButton("Off");

rdbtnOff.setSelected(true);

rdbtnOff.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

textField.setText(null);

btn1.setEnabled(false);

btn2.setEnabled(false);

btn3.setEnabled(false);

btn4.setEnabled(false);

btn5.setEnabled(false);

btn6.setEnabled(false);

btn7.setEnabled(false);

btn8.setEnabled(false);

btn9.setEnabled(false);

btn0.setEnabled(false);

btnDot.setEnabled(false);

btnAdd.setEnabled(false);

btnSub.setEnabled(false);

btnMul.setEnabled(false);

btnDivide.setEnabled(false);

btnPercentage.setEnabled(false);

btnPlusMinus.setEnabled(false);

btnEqual.setEnabled(false);

btnClear.setEnabled(false);

btnNewButton\_8.setEnabled(false);

btnNewButton\_8\_4.setEnabled(false);

btnNewButton\_8\_5.setEnabled(false);

btnNewButton\_8\_2.setEnabled(false);

btnNewButton\_8\_3.setEnabled(false);

btnNewButton\_1\_1.setEnabled(false);

btnNewButton\_7.setEnabled(false);

btnNewButton\_8\_1.setEnabled(false);

btnNewButton.setEnabled(false);

btnBackSpace.setEnabled(false);

btnNewButton\_1.setEnabled(false);

btnNewButton\_2.setEnabled(false);

btnNewButton\_3.setEnabled(false);

btnNewButton\_4.setEnabled(false);

btnNewButton\_5.setEnabled(false);

textField.setEnabled(false);

}

});

buttonGroup.add(rdbtnOff);

rdbtnOff.setFont(new Font("Tahoma", Font.BOLD, 15));

rdbtnOff.setBounds(81, 116, 58, 23);

frame.getContentPane().add(rdbtnOff);

}

}