package Experience5;

import java.awt.BorderLayout;

import java.awt.Component;

import java.awt.GridBagConstraints;

import java.awt.GridBagLayout;

import java.awt.GridLayout;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import javax.swing.\*;

public class SimpleCalculator extends JFrame implements ActionListener{

    JTextField jText;

    Boolean state=false;

    double firstOperator,secondOperator;

    int operate;

    int count=0;

    //控件的定义

    JPanel jUpPanel;

    JPanel jDownPanel;

    GridBagLayout gbLayout;

    GridBagConstraints gbConstraints;

    String[] jButNames={"7","8","9","/","4","5","6","\*","1","2","3","-","0",".","=","+"};

    JButton[] jButs =new JButton[16];

    public static void main(String args[])

    {

        SimpleCalculator calculator=new SimpleCalculator();

    }

    public SimpleCalculator()

    {

        super("A Simple Calculator");

        //窗体的设定

        this.setSize(400, 300);

        this.setDefaultCloseOperation(EXIT\_ON\_CLOSE);

        //this.pack();

        this.setVisible(true);

        //框架的定义

        jUpPanel=new JPanel();

        jDownPanel=new JPanel();

        gbLayout=new GridBagLayout();

        gbConstraints=new GridBagConstraints();

        this.getContentPane().setLayout(gbLayout);

        gbConstraints.weightx = 1;

        gbConstraints.weighty = 0;

        gbConstraints.fill = GridBagConstraints.BOTH;

        gbConstraints.gridx=0;

        gbConstraints.gridy=0;

        gbConstraints.gridheight=1;

        gbConstraints.gridwidth=4;

        gbLayout.setConstraints(jUpPanel, gbConstraints);

        this.getContentPane().add(jUpPanel);

        gbConstraints.weighty = 1;

        gbConstraints.gridx=0;

        gbConstraints.gridy=1;

        gbConstraints.gridheight=4;

        gbConstraints.gridwidth=4;

        gbLayout.setConstraints(jDownPanel, gbConstraints);

        this.getContentPane().add(jDownPanel);

        /\*

        gbConstraints.weightx = 1;

        gbConstraints.weighty = 0;

        gbConstraints.fill = GridBagConstraints.BOTH;

        addComponent(jUpPanel, gbLayout, gbConstraints, 0, 0, 4, 1);

        gbConstraints.weighty = 1;

        addComponent(jDownPanel, gbLayout, gbConstraints, 1, 0, 4, 4);

        this.getContentPane().setLayout(gbLayout);

        \*/

        //jUpPanel内容的填充

        jText=new JTextField();

        jText.setHorizontalAlignment(JTextField.RIGHT);

        jText.setEnabled(false);

        jText.setText("本计算器支持连续操作,即1+3-4+5=这样的操作");

        jUpPanel.setLayout(new BorderLayout());

        jUpPanel.add(jText);

        //jDownPanel内容的填充

        jDownPanel.setLayout(new GridLayout(4,4));

        for(int i=0;i<16;i++)

        {

            jButs[i]=new JButton(jButNames[i]);

            jButs[i].addActionListener(this);

            jButs[i].setActionCommand(jButs[i].getName());

            jDownPanel.add(jButs[i]);

        }

    }

    @Override

    public void actionPerformed(ActionEvent e) {

        // TODO Auto-generated method stub

        if(e.getSource()==jButs[3]||e.getSource()==jButs[7]||e.getSource()==jButs[11]||e.getSource()==jButs[15])

        {

            double temp=0.0;

            count++;

            try

            {

                temp=Double.parseDouble(jText.getText());

            }

            catch(Exception ex)

            {

                ex.printStackTrace();

                JOptionPane.showMessageDialog((Component) e.getSource(), "第一个操作数不正确");

                System.exit(0);

            }

            if(count>1)

            {

                if(operate==1)

                    temp=firstOperator/temp;

                else if(operate==2)

                    temp=firstOperator\*temp;

                else if(operate==3)

                    temp=firstOperator-temp;

                else

                    temp=firstOperator+temp;

                jText.setText(Double.toString(temp));

                state=false;

            }

            else

            {

                jText.setText("");

            }

            if(e.getSource()==jButs[3])

                operate=1;

            else if(e.getSource()==jButs[7])

                operate=2;

            else if(e.getSource()==jButs[11])

                operate=3;

            else

                operate=4;

            firstOperator=temp;

        }

        else if(e.getSource()==jButs[14])

        {

            double answer;

            count=0;

            try

            {

                secondOperator=Double.parseDouble(jText.getText());

            }

            catch(Exception ex)

            {

                ex.printStackTrace();

                JOptionPane.showMessageDialog((Component) e.getSource(), "第二个操作数不正确");

                System.exit(0);

            }

            if(operate==1)

                answer=firstOperator/secondOperator;

            else if(operate==2)

                answer=firstOperator\*secondOperator;

            else if(operate==3)

                answer=firstOperator-secondOperator;

            else

                answer=firstOperator+secondOperator;

            jText.setText(Double.toString(answer));

            state=false;

        }

        else

        {

            if(state)

                jText.setText(jText.getText()+e.getActionCommand());

            else

            {

                state=true;

                jText.setText(e.getActionCommand());

            }

        }

    }

    /\*

    private void addComponent(Component c, GridBagLayout g,

            GridBagConstraints gc, int row, int column, int width, int height) {

                gc.gridx = column;

                gc.gridy = row;

                gc.gridwidth = width;

                gc.gridheight = height;

                g.setConstraints(c, gc);

                add(c);

        }

    \*/

}