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import java.awt.BorderLayout;
import java.awt.EventQueue;

import javax.swing.JFrame;
import javax.swing.JPanel;
import javax.swing.border.EmptyBorder;
import javax.swing.BoxLayout;
import javax.swing.JLabel;
import java.awt.GridLayout;
import java.awt.FlowLayout;
import javax.swing.JButton;
import java.awt.Color;
import javax.swing.border.LineBorder;
import javax.swing.JComboBox;
import javax.swing.JOptionPane;
import javax.swing.JTextField;
import javax.swing.DefaultComboBoxModel;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;
import java.awt.event.ItemListener;
import java.awt.event.ItemEvent;
import javax.swing.SwingConstants;
import java.awt.Font;

public class Colas extends JFrame {

    private JPanel contentPane;
    private JPanel panelc;
    private JPanel panels;
    private JLabel lbl0;
    private JLabel lbl1;
    private JLabel lbl2;
    private JLabel lbl3;
    private JLabel lbl5;
    private JLabel lbl6;
    private JLabel lbl100;
    private JLabel lbl101;
    private JLabel lbl102;
    private JLabel lbl103;
    private JLabel lbl104;
    private JLabel lbl105;
    private JLabel lbl106;
    private JLabel lbl14;
    private JButton btnAgregar;
    private JButton btnEliminar;
    private JTextField tAgregar;
    private JTextField tFrente;
    private JButton btnModificar;
    int frente = -1;
    int finalc = -1;
    private JLabel lblNewLabel_2;
    private JLabel lblfrente;
    private JLabel lblFinal;
    private JTextField tPop;
    private JLabel lbl_1;
    private JLabel lblFinal;
    private JLabel lblFrente;

    /**
     * Launch the application.
     */
    public static void main(String[] args) {
        EventQueue.invokeLater(new Runnable() {
            public void run() {
                try {
                    Colas frame = new Colas();
                    frame.setVisible(true);
                } catch (Exception e) {
                    e.printStackTrace();
                }
            }
        });
    }

    /**
     * Create the frame.
     */
    public Colas() {
        setTitle("Estructura de Datos (COLAS)");
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setBounds(100, 100, 519, 293);
        contentPane = new JPanel();
        contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));
        setContentPane(contentPane);
        contentPane.setLayout(new BorderLayout(0, 0));

        panelc = new JPanel();
        contentPane.add(panelc, BorderLayout.CENTER);
        panelc.setLayout(null);

        btnAgregar = new JButton("Agregar");
        btnAgregar.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent arg0) {
                JLabel label;
                int q;
                if (tAgregar.getText().isEmpty()) {
                    JOptionPane.showMessageDialog(null, "El elemento esta vacio", "Error", JOptionPane.ERROR_MESSAGE);
                }
                else if ( (frente == 0 && finalc == 6) || (finalc + 1 == frente) ) {
                    JOptionPane.showMessageDialog(null, "La Cola esta llena", "Error", JOptionPane.ERROR_MESSAGE);
                }
                else {
                    if (frente == -1)
                        frente = 0;
                    if (finalc == 6) {
                        finalc = 0;

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        }
        else {
            ++finalc;
        }
        getLabel(finalc).setText(tAgregar.getText());
        tFrente.setText(getLabel(frente).getText());
        tPop.setText(getLabel(frente).getText());
        tAgregar.setText("");
        labelFrente.setText(""+frente);
        labelFinal.setText(""+finalc);
    }
}

});
btnAgrega.setBounds(263, 35, 117, 29);
panelc.add(btnAgrega);

btnEliminar = new JButton("Eliminar");
btnEliminar.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent arg0) {
        if (frente == -1 && finalc == -1) {
            JOptionPane.showMessageDialog (null, "La Cola esta vacia", "Error", JOptionPane.ERROR_MESSAGE);
        }
        else {
            getLabel(frente).setText("");
            if (frente == finalc) {
                frente = finalc = -1;
                tFrente.setText("");
                tPop.setText("");
                labelFrente.setText("-1");
                labelFinal.setText("-1");
            }
            else {
                if ( frente == 6) {
                    frente = 0;
                }
                else {
                    frente++;
                    labelFrente.setText(""+ frente);
                    labelFinal.setText(""+ finalc);
                    tPop.setText( getLabel(frente).getText() );
                    tFrente.setText( getLabel(frente).getText() );
                }
            }
        }
    }
});
btnEliminar.setBounds(263, 135, 117, 29);
panelc.add(btnEliminar);

tAgrega = new JTextField();
tAgrega.setBounds(143, 34, 103, 28);
panelc.add(tAgrega);
tAgrega.setColumns(10);

JLabel lblNewLabel = new JLabel("Elemento");
lblNewLabel.setBounds(162, 16, 61, 16);
panelc.add(lblNewLabel);

tFrente = new JTextField();
tFrente.setEnabled(false);
tFrente.setColumns(10);
tFrente.setBounds(143, 84, 103, 28);
panelc.add(tFrente);

btnModificar = new JButton("Frente");
btnModificar.setEnabled(false);
btnModificar.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent arg0) {
        if (frente <= 6 ){
            tFrente.setText(getLabel(0).getText());
            JOptionPane.showMessageDialog (null, "Se MODIFICO la posicion", "Informacion", JOptionPane.INFORMATION_MESSAGE);
        }
    }
});
btnModificar.setBounds(263, 85, 117, 29);
panelc.add(btnModificar);

lblNewLabel_2 = new JLabel("Valor Actual");
lblNewLabel_2.setBounds(156, 66, 85, 16);
panelc.add(lblNewLabel_2);

lblfrente = new JLabel("frente =");
lblfrente.setForeground(Color.RED);
lblfrente.setFont(new Font("Lucida Grande", Font.BOLD, 13));
lblfrente.setBounds(109, 186, 61, 16);
panelc.add(lblfrente);

labelFinal = new JLabel("-1");
labelFinal.setFont(new Font("Lucida Grande", Font.BOLD, 13));
labelFinal.setForeground(Color.RED);
labelFinal.setBounds(324, 186, 61, 16);
panelc.add(labelFinal);

tPop = new JTextField();
tPop.setEnabled(false);
tPop.setColumns(10);
tPop.setBounds(143, 136, 103, 28);
panelc.add(tPop);

label_1 = new JLabel("Valor Actual");
label_1.setBounds(156, 118, 85, 16);
panelc.add(label_1);

lblFinal = new JLabel("final =");
lblFinal.setForeground(Color.RED);
lblFinal.setFont(new Font("Lucida Grande", Font.BOLD, 13));
lblFinal.setBounds(273, 186, 59, 16);
panelc.add(lblFinal);

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labelFrente = new JLabel("-1");
labelFrente.setForeground(Color.RED);
labelFrente.setFont(new Font("Lucida Grande", Font.BOLD, 13));
labelFrente.setBounds(171, 186, 39, 16);
panelc.add(labelFrente);

panels = new JPanel();
contentPane.add(panels, BorderLayout.SOUTH);
panels.setLayout(new GridLayout(2,7));

lbl0 = new JLabel(" ");
lbl0.setHorizontalAlignment(SwingConstants.CENTER);
lbl0.setOpaque(true);
lbl0.setBackground(Color.ORANGE);
lbl0.setBorder(new LineBorder(new Color(0, 0, 0)));
panels.add(lbl0);
lbl0.setOpaque(true);
lbl0.setOpaque(true);

lbl1 = new JLabel(" ");
lbl1.setHorizontalAlignment(SwingConstants.CENTER);
lbl1.setBackground(Color.ORANGE);
lbl1.setOpaque(true);
lbl1.setBorder(new LineBorder(new Color(0, 0, 0)));
panels.add(lbl1);

lbl2 = new JLabel(" ");
lbl2.setHorizontalAlignment(SwingConstants.CENTER);
lbl2.setBackground(Color.ORANGE);
lbl2.setOpaque(true);
lbl2.setBorder(new LineBorder(new Color(0, 0, 0)));
panels.add(lbl2);

lbl3 = new JLabel(" ");
lbl3.setHorizontalAlignment(SwingConstants.CENTER);
lbl3.setBackground(Color.ORANGE);
lbl3.setOpaque(true);
lbl3.setBorder(new LineBorder(new Color(0, 0, 0)));
panels.add(lbl3);

lbl4 = new JLabel(" ");
lbl4.setHorizontalAlignment(SwingConstants.CENTER);
lbl4.setBackground(Color.ORANGE);
lbl4.setOpaque(true);
lbl4.setBorder(new LineBorder(new Color(0, 0, 0)));
panels.add(lbl4);

lbl5 = new JLabel(" ");
lbl5.setHorizontalAlignment(SwingConstants.CENTER);
lbl5.setOpaque(true);
lbl5.setBackground(Color.ORANGE);
lbl5.setBorder(new LineBorder(new Color(0, 0, 0)));
panels.add(lbl5);

lbl6 = new JLabel(" ");
lbl6.setHorizontalAlignment(SwingConstants.CENTER);
lbl6.setBackground(Color.ORANGE);
lbl6.setBorder(new LineBorder(new Color(0, 0, 0)));
lbl6.setOpaque(true);
panels.add(lbl6);

lbl00 = new JLabel(" 0");
lbl00.setHorizontalAlignment(SwingConstants.CENTER);
panels.add(lbl00);

lbl01 = new JLabel("1");
lbl01.setHorizontalAlignment(SwingConstants.CENTER);
panels.add(lbl01);

lbl02 = new JLabel("2");
lbl02.setHorizontalAlignment(SwingConstants.CENTER);
panels.add(lbl02);

lbl03 = new JLabel("3");
lbl03.setHorizontalAlignment(SwingConstants.CENTER);
panels.add(lbl03);

lbl04 = new JLabel("4");
lbl04.setHorizontalAlignment(SwingConstants.CENTER);
panels.add(lbl04);

lbl05 = new JLabel("5");
lbl05.setHorizontalAlignment(SwingConstants.CENTER);
panels.add(lbl05);

lbl06 = new JLabel("6");
lbl06.setHorizontalAlignment(SwingConstants.CENTER);
panels.add(lbl06);
}

JLabel getLabel (int lb) {
    switch (lb) {
        case 0 : return lbl0;
        case 1 : return lbl1;
        case 2 : return lbl2;
        case 3 : return lbl3;
        case 4 : return lbl4;
        case 5 : return lbl5;
        case 6 : return lbl6;
    }return null;
}
}

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