Programmieren 2
Übung Semesterwoche 5

Aufgabe 1: Menus und JOptionPane


```java
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class Menu extends JFrame implements ActionListener
{
    public Menu()
    {
        setTitle("Example for a simple menu");
        setSize(400, 300);
        setLayout(new BorderLayout());

        //create menu bar
        JMenuBar mb = new JMenuBar();
        this.setJMenuBar(mb);

        //create menus and assign them to the menu bar
        JMenu menuFile = new JMenu("File");
        mb.add(menuFile);

        JMenu menuHelp = new JMenu("Help");
        mb.add(menuHelp);

        //add menu items and assign them to the appropriate menu
        JMenuItem itemExit = new JMenuItem("Exit");
        itemExit.addActionListener(this);
        menuFile.add(itemExit);

        JMenuItem itemAbout = new JMenuItem("About");
        itemAbout.addActionListener(this);
        menuHelp.add(itemAbout);

        setVisible(true);
    }

    public void windowIconified(WindowEvent e) { }
    public void windowOpened(WindowEvent e) { }
    public void windowClosed(WindowEvent e) { }
    public void windowDeiconified(WindowEvent e) { }
    public void windowActivated(WindowEvent e) { }
    public void windowDeactivated(WindowEvent e) { }

    public void actionPerformed(ActionEvent e)
    {
        JMenuItem m = (JMenuItem)e.getSource();
        String name = m.getText();

        // Debug Hash Codes of Buttons:
        // System.out.println(name.hashCode());

        switch(name.hashCode())
        {
            case 2174270:
                itemExit_Click();
                break;

            case 63058797:
                itemAbout_Click();
                break;
```
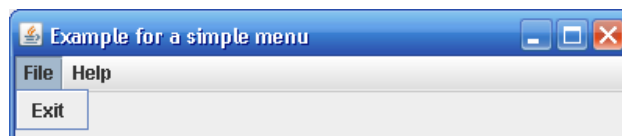
```java
        }
    }

    public void itemExit_Click()
    {
        System.exit(0);
    }

    public void itemAbout_Click()
    {
        JOptionPane.showMessageDialog(null, "Copyright 2009, Hochschule Luzern, Thomas
Galliker", "Simple Menu Example", JOptionPane.INFORMATION_MESSAGE);
    }
}
```

Aufgabe 2: ActionListener und Border


```java
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;

public class SwingApplication extends JFrame
{
    private JLabel label;
    private JButton button;
    private int numClicks = 0;

    public static void main(String[] args)
    {
        JFrame frame = new SwingApplication();
    }

    public SwingApplication()
    {
        super("Swing[ing] Application");
        setDefaultCloseOperation(EXIT_ON_CLOSE);

        JPanel panel1 = new JPanel(new FlowLayout(FlowLayout.CENTER, 10, 10));
        panel1.setBorder(BorderFactory.createLineBorder(Color.red));
        button = new JButton(action);
        panel1.add(button);

        JPanel panel2 = new JPanel(new FlowLayout(FlowLayout.CENTER, 10, 10));
        panel2.setBorder(BorderFactory.createLineBorder(Color.green));
        label = new JLabel();
        panel2.add(label);
        refreshLabel();

        setLayout(new GridLayout(2, 1));
        getContentPane().add(panel1);
        getContentPane().add(panel2);

        pack();
        setVisible(true);
    }

    // Create an action for the button
    Action action = new AbstractAction("Count button clicks") {
        // This method is called when the button is pressed
        public void actionPerformed(ActionEvent evt) {
            numClicks++;
            refreshLabel();
        }
    };

    private void refreshLabel()
    {
        this.label.setText("Number of Clicks: " + numClicks);
    }
}
```