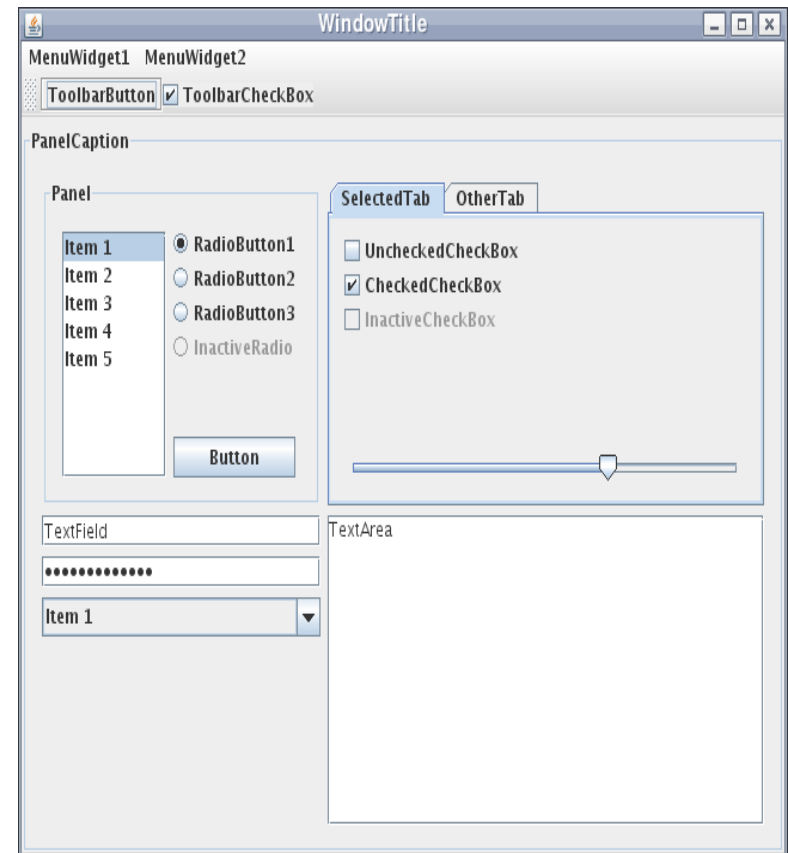


Interfaces gráficas em Java

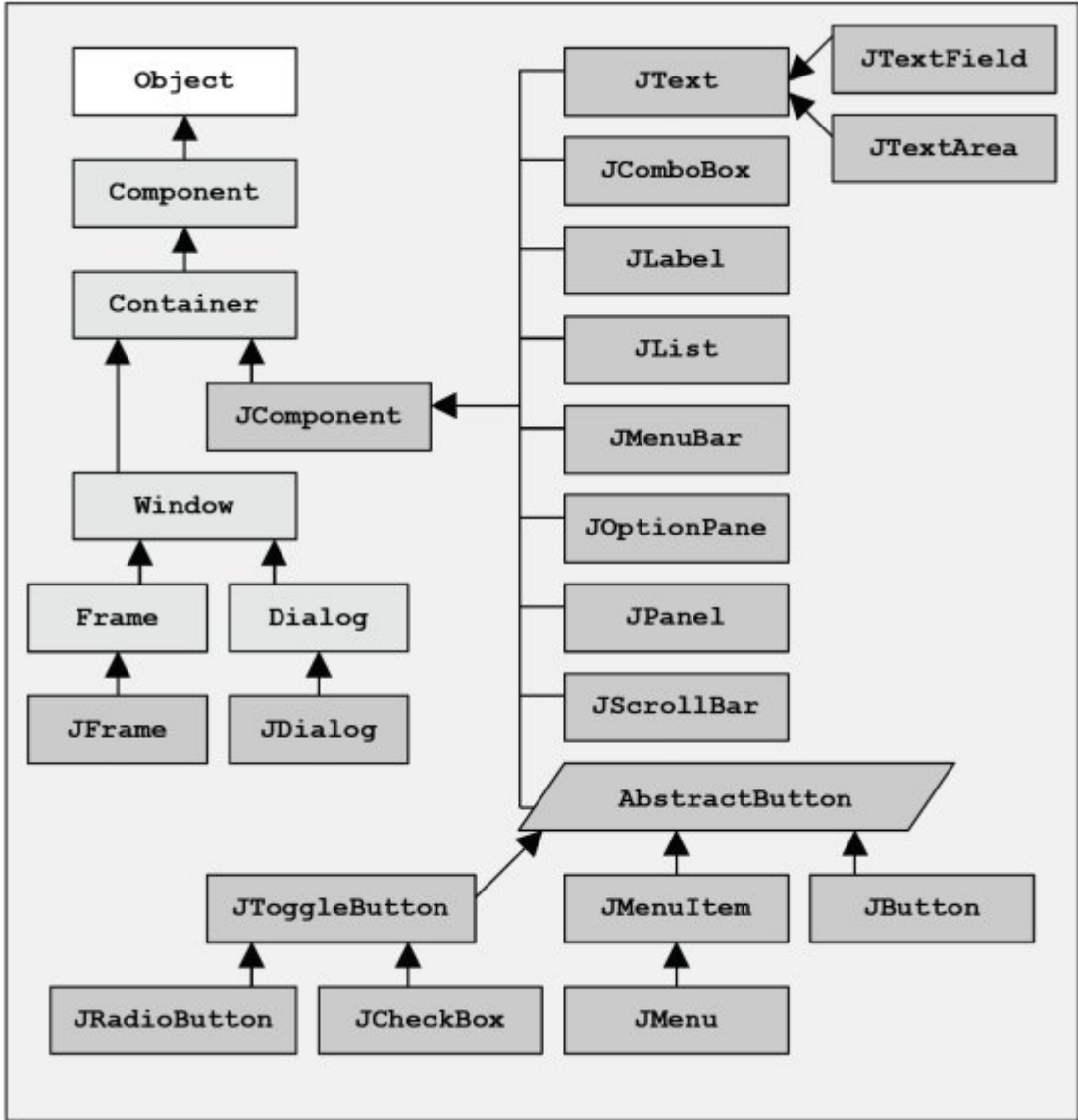
Profa Andréa Schwertner Charão
DELC/CT/UFSM

Graphical User Interfaces (GUIs)

- Recursos para construir interfaces gráficas portáteis
- Desktop (ou Web via Java Web Start)
- Pacotes de classes da plataforma Java:
 - `java.awt.*`: elementos básicos
 - `javax.swing.*`: componentes "sofisticados"



Hierarquia de classes



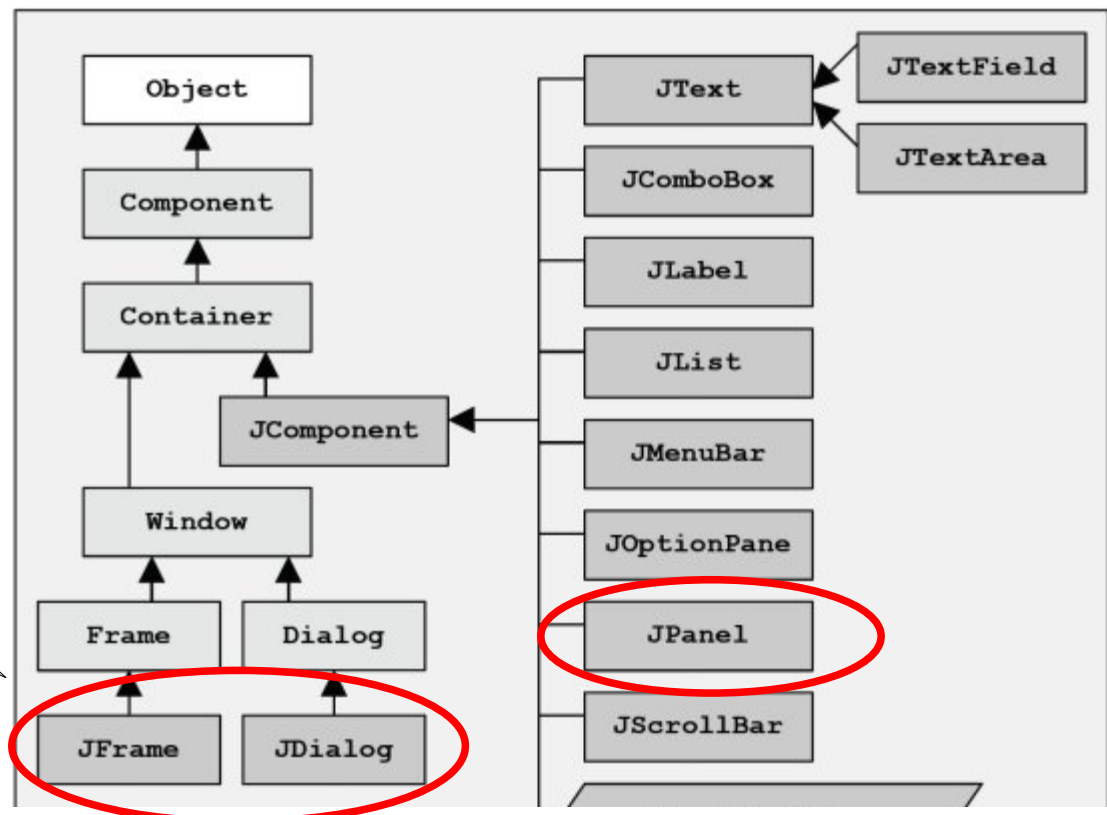
Fonte:

<http://www.particle.kth.se/~lindsey/JavaCourse/Book/Part1/Java/Chapter06/swing.html>

Categorias de classes

- **Containers** (ex: JFrame, JDialog, JPanel): são componentes que contêm outros objetos
- Em geral, qualquer GUI usa no mínimo uma classe desta categoria

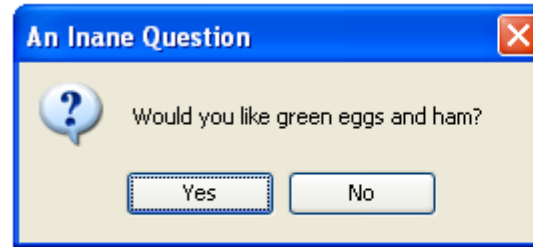
Os mais usados



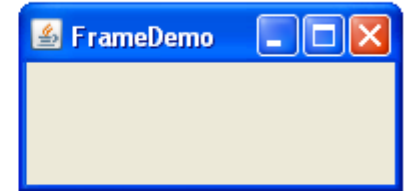
Categorias de classes

■ Principais **containers**:

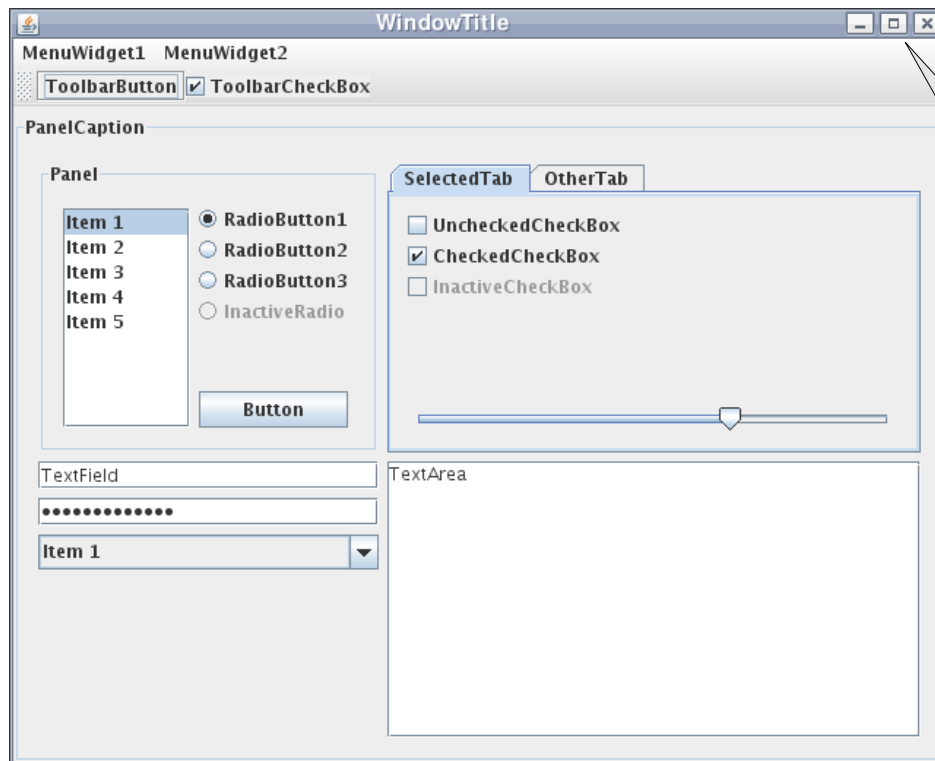
- JFrame
- JDialog



JDialog



JFrame



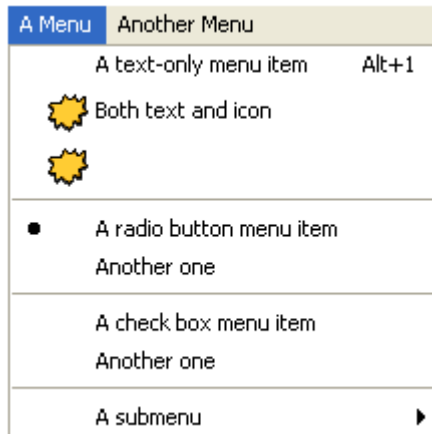
**JFrame
contendo
outros
objetos**

Categorias de classes

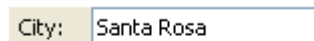
- **Componentes interativos básicos** (ex: JButton, JMenu, etc.): são componentes para entrada/saída



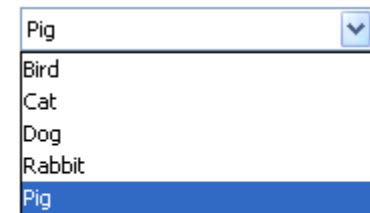
JButton



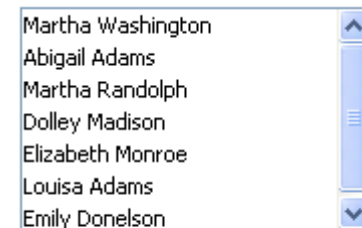
JCheckBox



JTextField



JComboBox



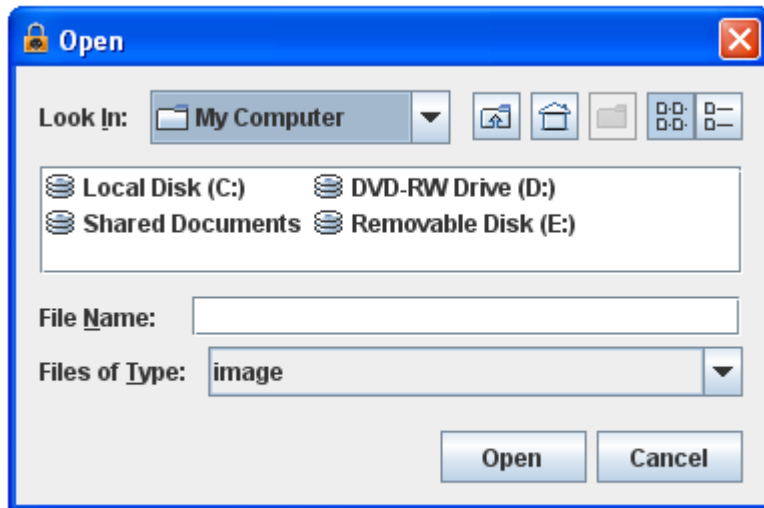
JList

Fonte:

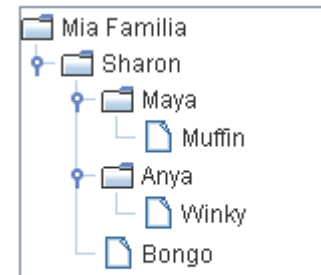
<http://download.oracle.com/javase/tutorial/ui/features/compWin.html>

Categorias de classes

- **Componentes de alto nível** (ex: JFileChooser, JTable, etc.): são componentes "s sofisticados" para interação com o usuário



JFileChooser



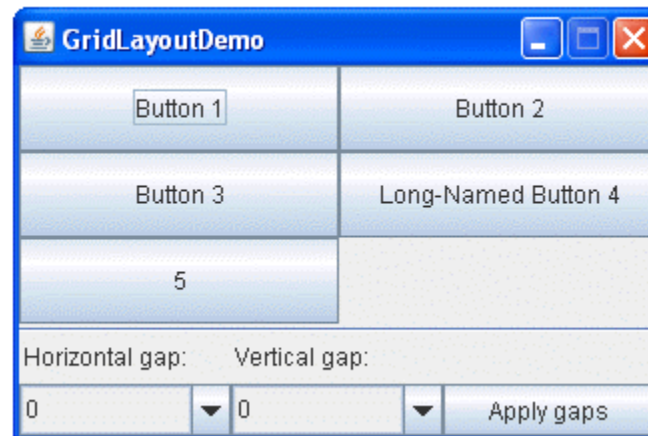
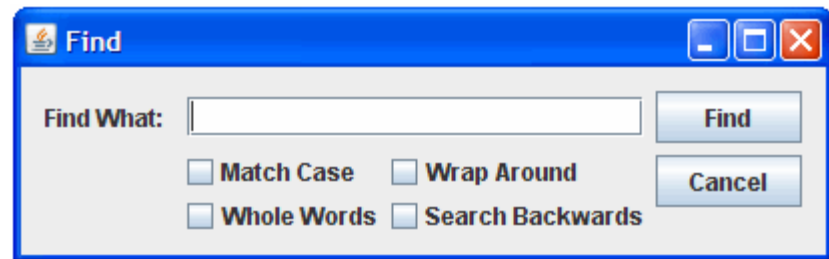
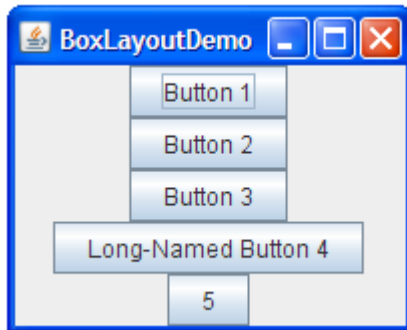
JTree

Host	User	Password	Last Modified
Biocca Games	Freddy	!#asf6Awwzb	Mar 16, 2006
zabble	ichabod	Tazb!34\$fZ	Mar 6, 2006
Sun Developer	fraz@hotmail.co...	AasV541!fbZ	Feb 22, 2006
Heirloom Seeds	shams@gmail....	bkz[ADF78!	Jul 29, 2005
Pacific Zoo Shop	seal@hotmail.c...	vbAf1 24%z	Feb 22, 2006

JTable

Categorias de classes

- **Layout Managers:** são classes que ajudam a organizar componentes em um container



Fonte:

<http://download.oracle.com/javase/tutorial/uiswing/layout/visual.html>

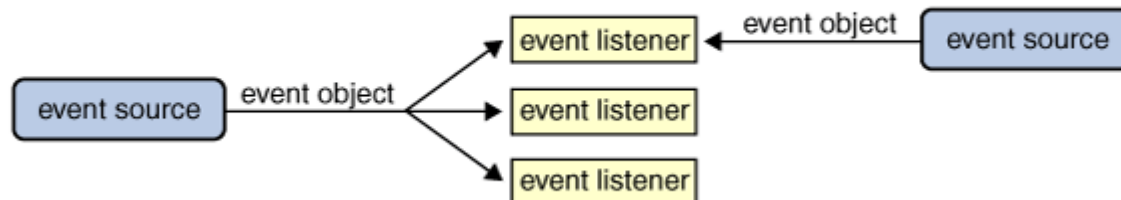
Categorias de classes

- **Eventos/ações:** são classes que representam a interação propriamente dita

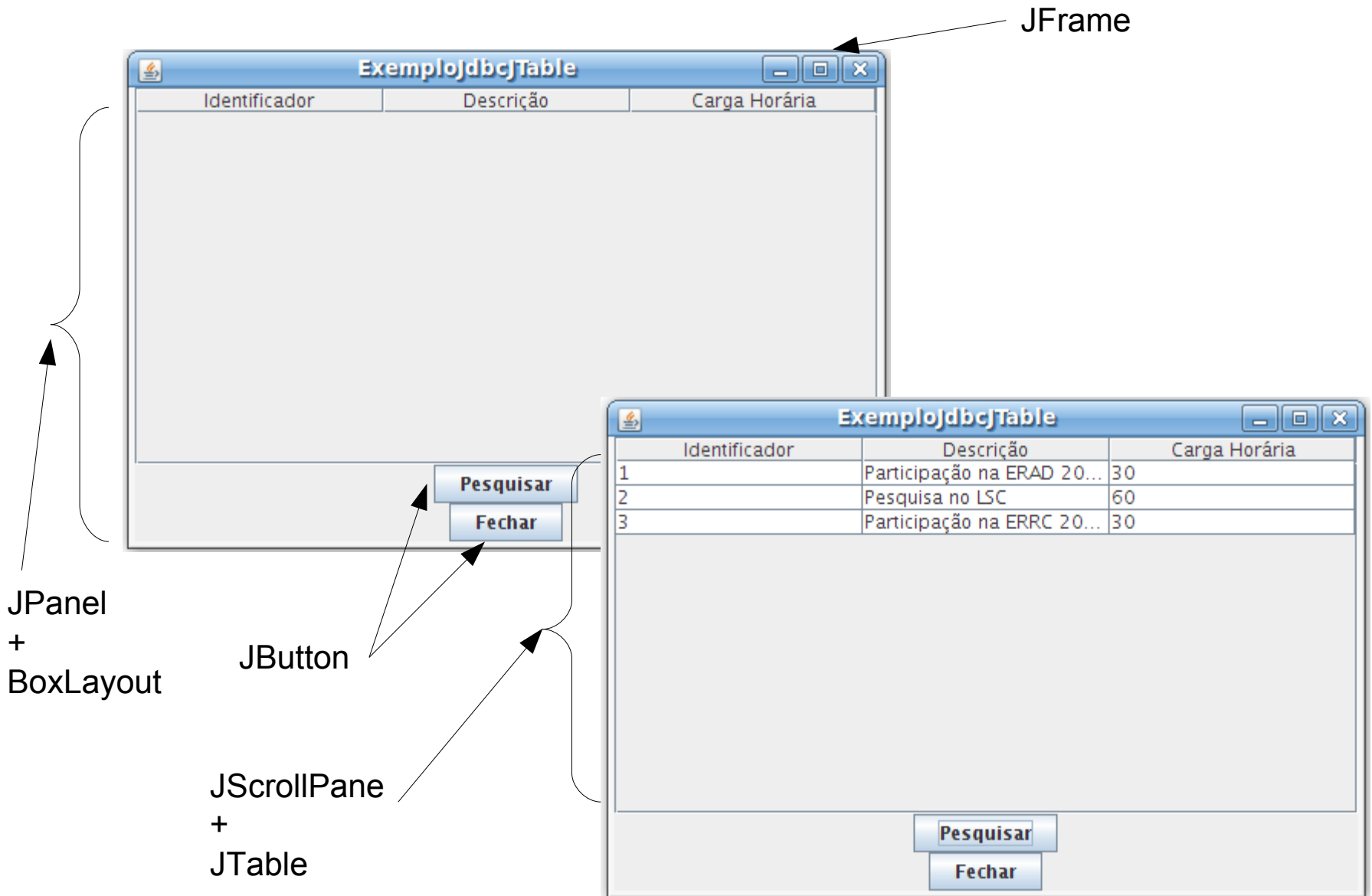
```
public class Beeper ... implements ActionListener {  
    ...  
    //where initialization occurs:  
    button.addActionListener(this);  
    ...  
    public void actionPerformed(ActionEvent e) {  
        ...//Make a beep sound...  
    }  
}
```



[JButton](#)



Exemplo: GUI + JDBC



Show me the code :-)

```
public class ExemploJdbcJTable {  
    public static void main(String[] args) throws ClassNotFoundException, SQLException {  
        JFrame frame = new ExemploFrame();  
    }  
}  
  
class ExemploFrame extends JFrame {  
  
    private JPanel jPanel = null;  
    private JButton jButtonClose = null;  
    private JButton jButtonSearch = null;  
    private JScrollPane jScrollPane = null;  
    private JTable jTable = null;  
  
    private Connection conn = null;  
    private AcgDAO acgdao = null;  
  
    public ExemploFrame() {  
        super("ExemploJdbcJTable");  
        this.setSize(new Dimension(495, 325));  
        this.setContentPane(getJPanel());  
        setVisible(true);  
        initDb();  
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
    }  
}
```

Aplicação
termina
quando
o frame for fechado

Aqui se faz a
configuração dos
outros componentes

Código que opera DB
fica "isolado" do
código da GUI

Show me the code :-)

```
private JPanel getJPanel() {  
    jPanel = new JPanel();  
    jPanel.setLayout(new BorderLayout(jPanel, BorderLayout.Y_AXIS));  
    jPanel.add(getJScrollPane());  
    jPanel.add(getJButtonSearch());  
    jPanel.add(getJButtonClose());  
    return jPanel;  
}  
  
private JScrollPane getJScrollPane() {  
    jScrollPane = new JScrollPane();  
    jScrollPane.setViewportView(getJTable());  
    return jScrollPane;  
}  
  
private JTable getJTable() {  
    jTable = new JTable();  
    DefaultTableModel model = new DefaultTableModel(Acg.attribNames(), 0);  
    jTable.setModel(model);  
    return jTable;  
}
```

Define layout e
adiciona
componentes
no container

JScrollPane
permite
rolagem da tabela

Modelo de dados
da tabela
(colunas e linhas)

Show me the code :-)

Botão
"Pesquisar"

Classe anônima
aninhada
(anonymous inner class)

```
private JButton getJButtonSearch() {  
    jButtonSearch = new JButton();  
    jButtonSearch.setAlignmentX(Component.CENTER_ALIGNMENT);  
    jButtonSearch.setText("Pesquisar");  
  
    jButtonSearch.addActionListener(new java.awt.event.ActionListener() {  
        public void actionPerformed(java.awt.event.ActionEvent e) {  
            dbToJTable();  
        }  
    });  
    return jButtonSearch;  
}
```

Outra opção:
classe aninhada

```
class ExemploFrame extends JFrame {  
    ...  
    class SearchListener implements ActionListener {  
        public void actionPerformed(ActionEvent e) {  
            dbToJTable(); // acessível à classe aninhada  
        }  
    }  
    ...  
    private JButton getJButtonSearch() {  
        ...  
        SearchListener listener = new SearchListener();  
        jButtonSearch.addActionListener(listener);  
        ...  
    }  
}
```

Show me the code :-)

Preenche
JTable
a partir do DB

```
private void dbToJTable() {  
    try {  
        ArrayList<Vector> acgs = acgdao.dumpToVector();  
        DefaultTableModel model = new DefaultTableModel(acgs.get(1), Acg.attribNames());  
        jTable.setModel(model);  
    } catch (SQLException ex) {  
        ex.printStackTrace();  
    }  
}
```

Método **dumpToVector** em
GenericDAO:
retorna 2 Vector's
contendo toda a tabela