

# Interface Gráfica em Java

MC302 EF

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# Motivação

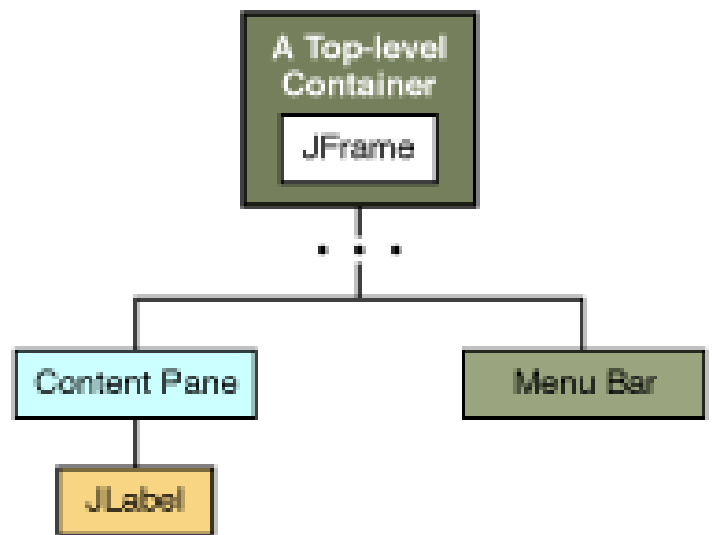
- Por que utilizar?
  - Quando o usuário precisa entrar muitos dados no programa.
  - O programa precisa exibir muitos dados ou algo gráfico para o usuário.
  - graphical user interface (GUI)
  - Command line interface (CLI)
  - Estudar na disciplinas de IHC.
    - Usabilidade

# Swing

- O que é?
- AWT

# Containers

- JFrame
- JDialog
- JApplet



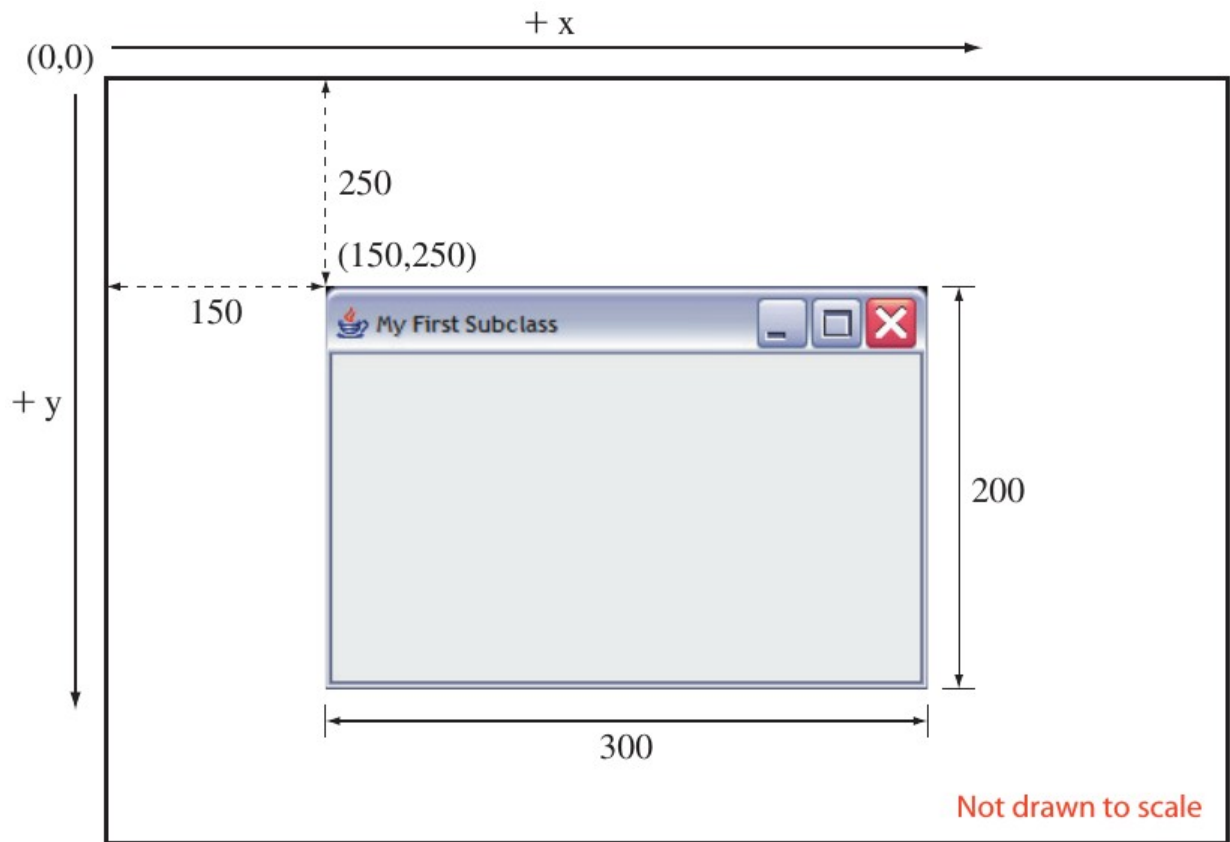
# Hello World

```
package br.unicamp.disciplina.mc302.ef.visual;

public class HelloWorld {

    public static void main(String[] args) {
        javax.swing.JFrame myWindow;
        myWindow = new javax.swing.JFrame ();
        myWindow.setSize(300, 200);
        myWindow.setTitle("My First Java Program");
        myWindow.setVisible(true);
    }
}
```

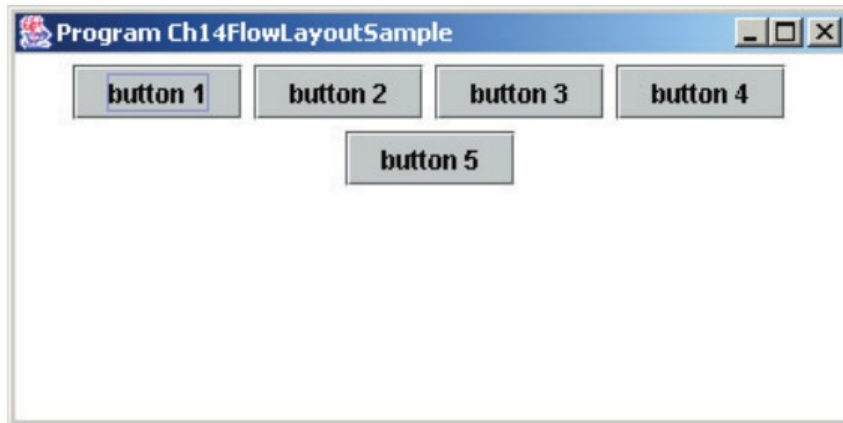
# Dimensões



# Gerenciador de Layout

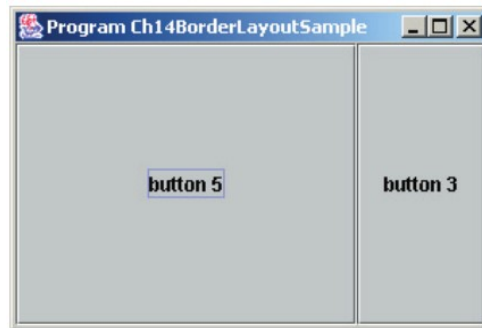
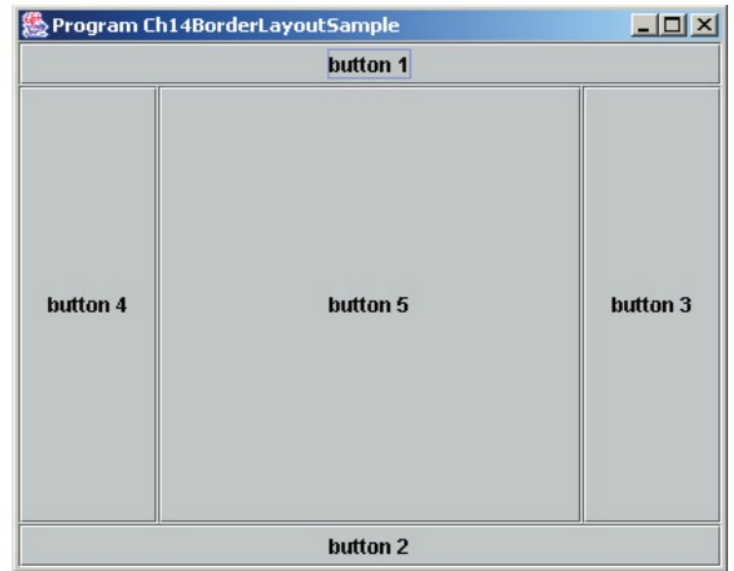
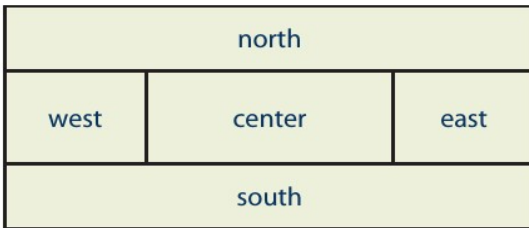
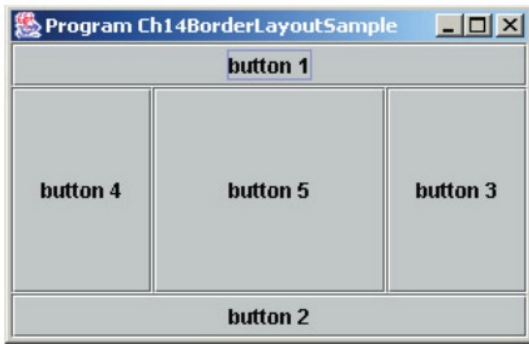
- `java.awt.FlowLayout`
- `java.awt.GridLayout`
- `java.awt.GridBagLayout`
- `java.awt.BorderLayout`
- `java.awt.CardLayout`
- `javax.swing.GroupLayout`
- `javax.swing.SpringLayout`
- `javax.swing.BoxLayout`

# Flow Layout

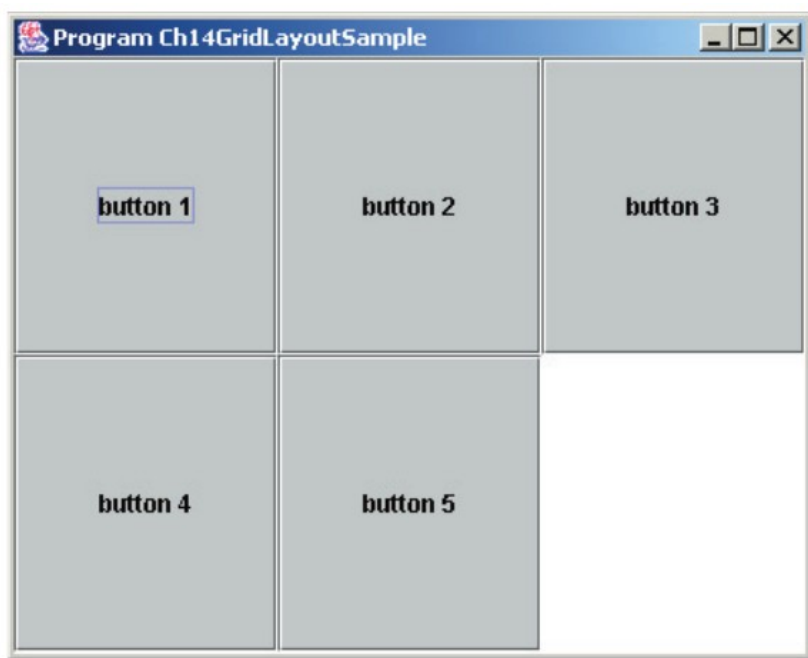
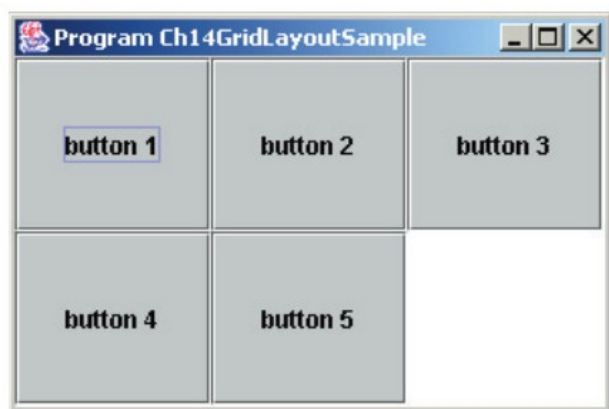




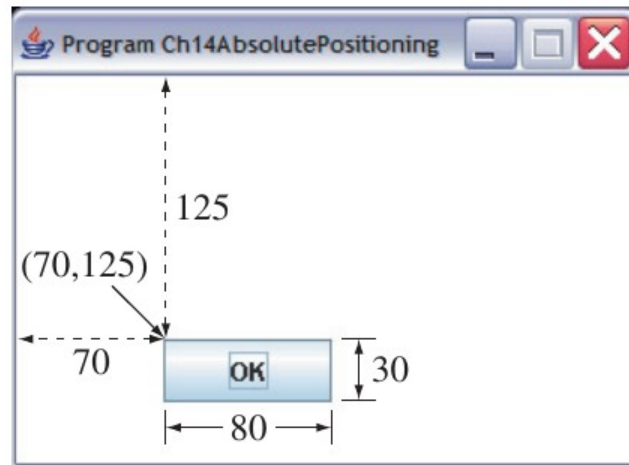
# Border Layout



# Grid Layout



# Posicionamento Absoluto



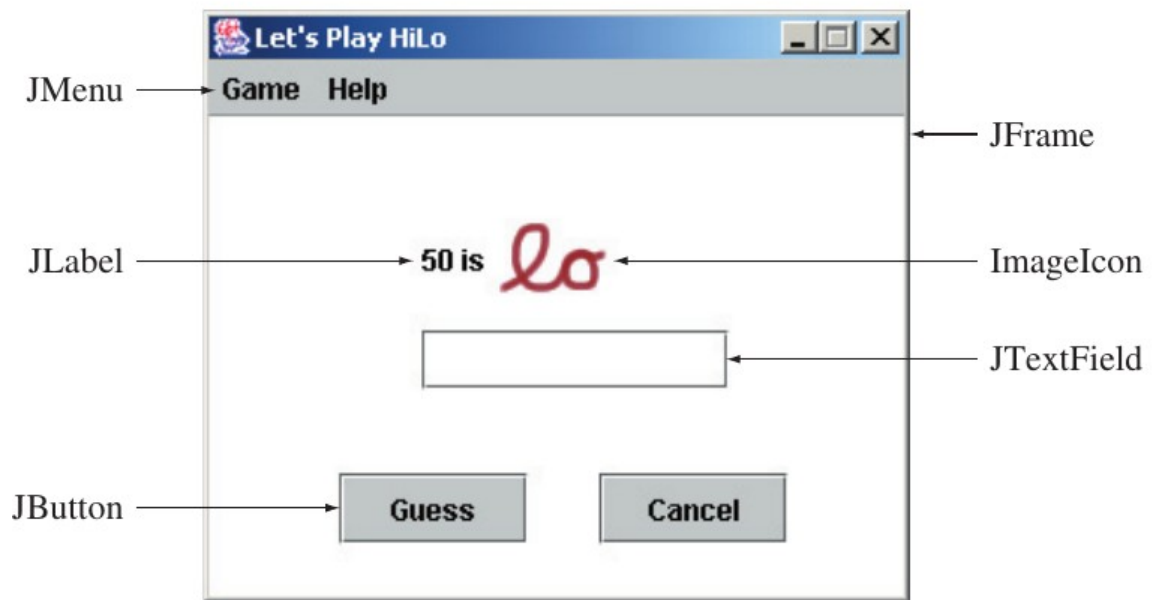
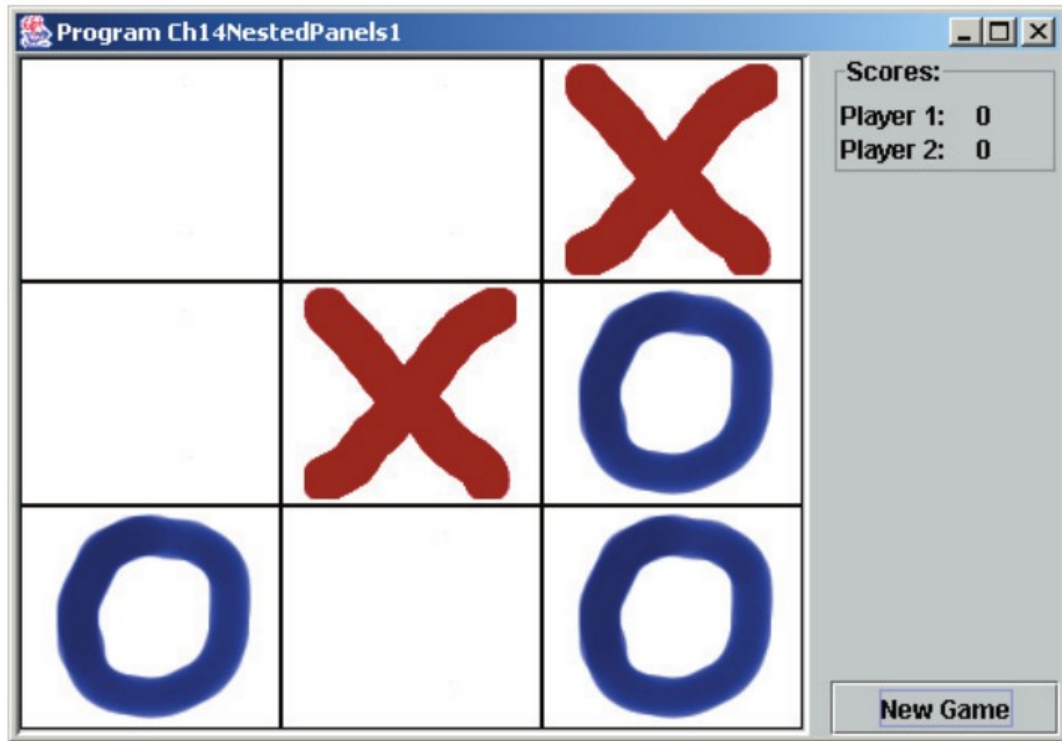
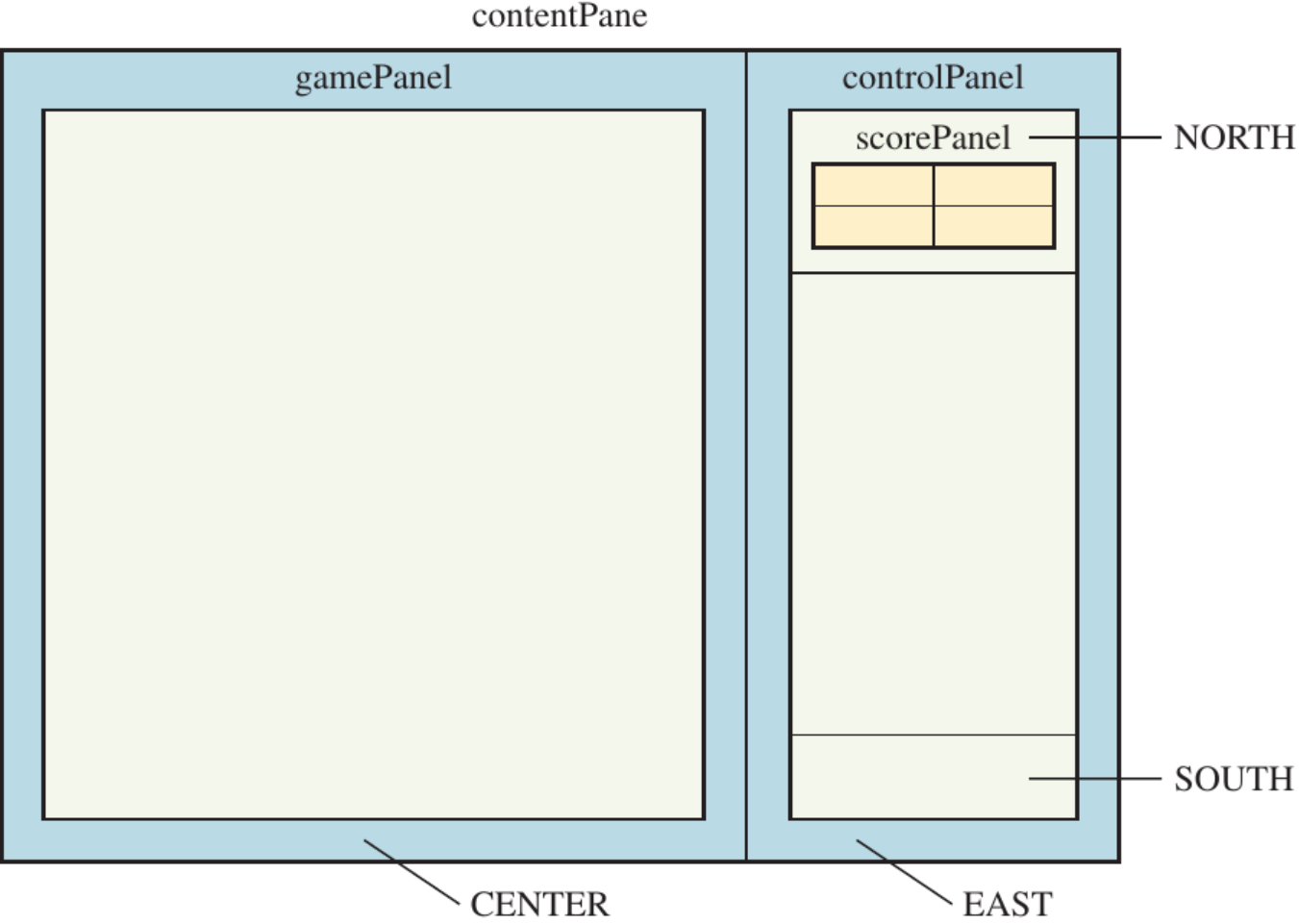


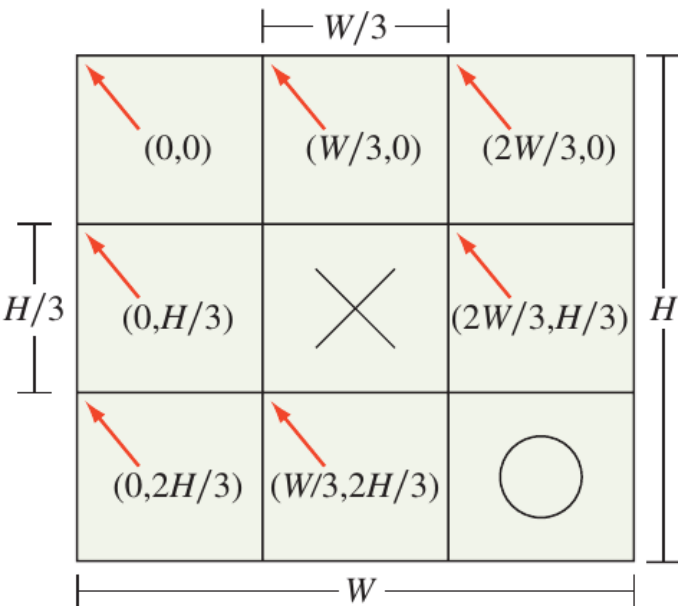
Figure 14.1 Various GUI objects from the javax.swing package.

# Como fazer esta tela?

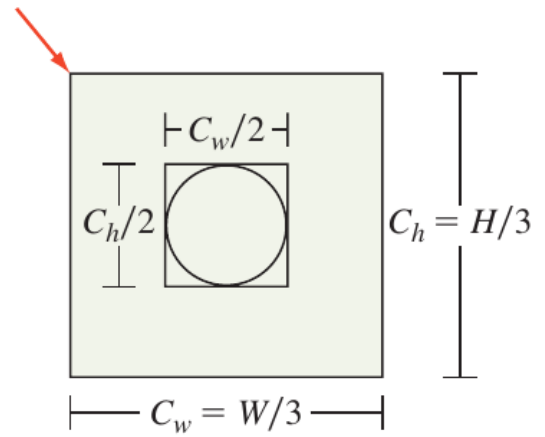




# Como Posicionar a Imagem



$(C_x, C_y)$  [for example  $(C_x, C_y) = (2W/3, 2H/3)$ ]



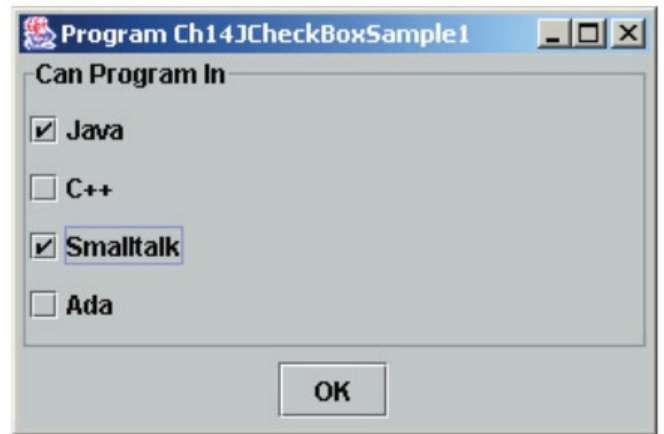
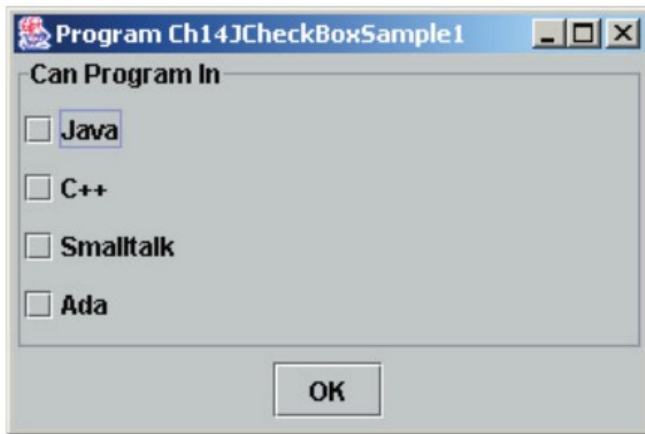
`g.drawOval( $C_x + C_w/4$ ,  $C_y + C_h/4$ ,  $C_w/2$ ,  $C_h/2$ );`

# Programação Dirigida a Eventos

- Método tratador de evento
  - Action event
  - Change State event
  - Item event
- Event source
- Event listener



# JCheckBox



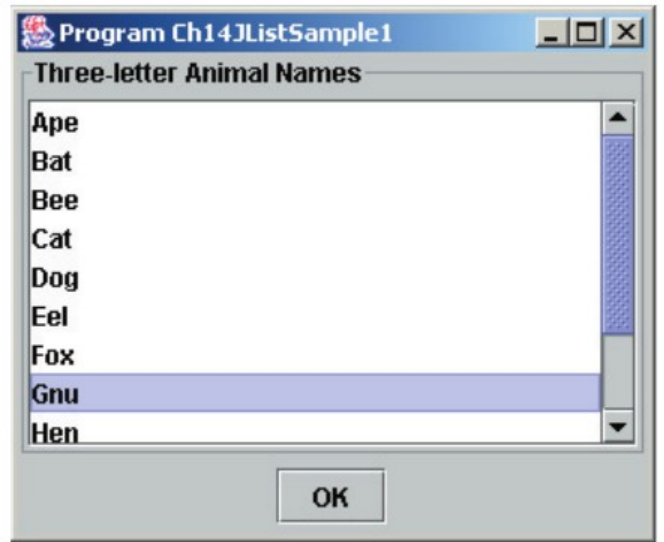
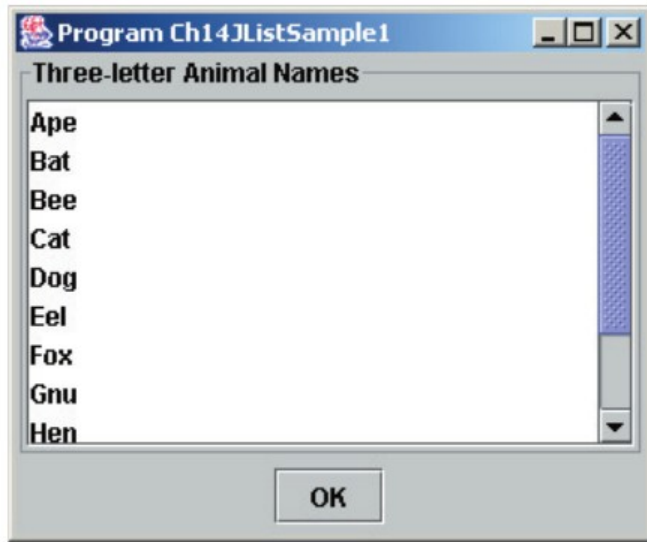
# JRadioButton



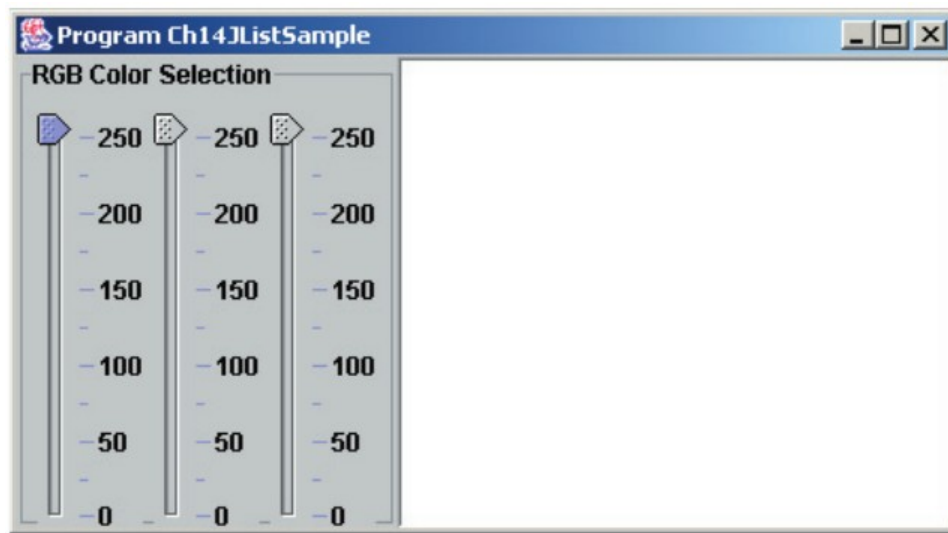
# JComboBox



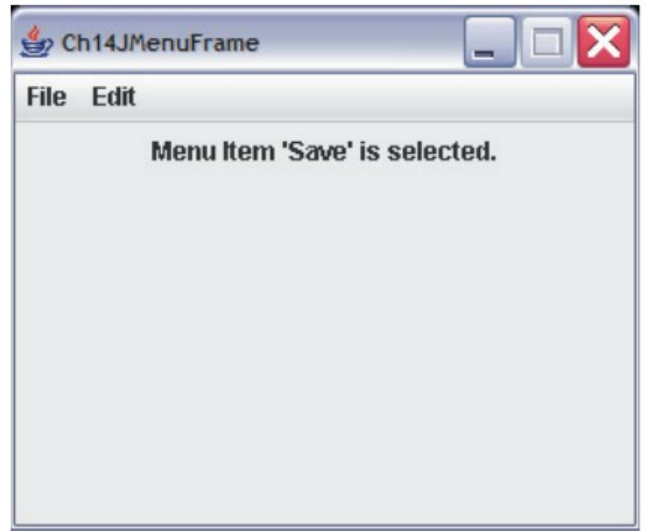
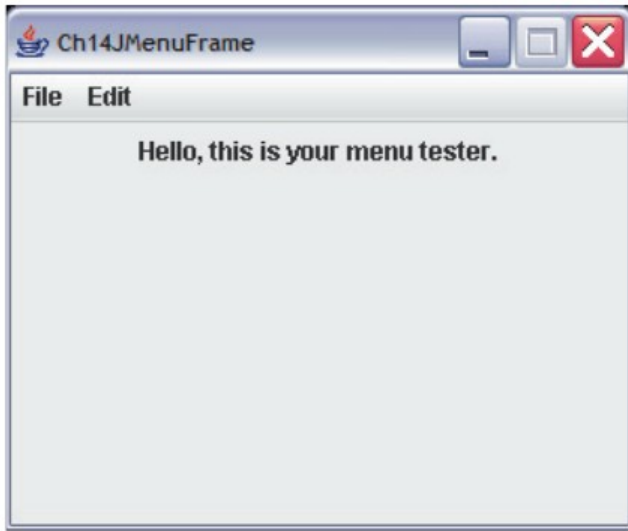
# JList



# JSlider



# JMenu



# Classes

- Algumas classes vistas nos exemplos:
  - ActionEvent
  - ActionListener
  - BorderFactory
  - BorderLayout
  - ButtonGroup
  - ChangeEvent
  - ChangeListener
  - Container
  - FlowLayout
  - GridLayout
  - ImageIcon
  - ItemEvent
  - ItemListener
  - JTextArea
  - JTextField
  - MouseEvent
  - JButton
  - JCheckBox
  - JComboBox
  - JFrame
  - JLabel
  - JList
  - JMenu
  - JMenuBar
  - JMenuItem
  - JOptionPane
  - JPanel
  - JRadioButton
  - JScrollPane
  - JSlider
  - MouseListener
  - MouseMotionListener

# Referências

C. Thomas Wu. **An Introduction to Object-Oriented Programming with Java**. 2010. 5 ed. McGraw-Hill: New York. Capítulo 5. Capítulo 14.

**Swing Básico. Java Noroeste.**

[http://javanoroeste.com.br/javanoroeste/novo/artigos/swing\\_basico.html](http://javanoroeste.com.br/javanoroeste/novo/artigos/swing_basico.html)