Interface Gráfica

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Programação Java

Objetivos dessa lição

Conteúdo

Introdução

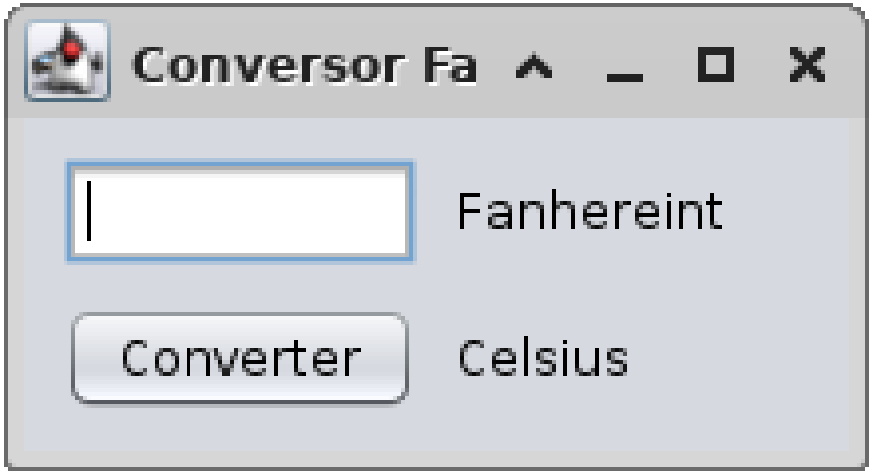
- Java Foundation Classes
  - Componentes Swing
  - Suporte plugável a Look-and-Feel
  - Accessibility API
  - Java 2D API
  - Internationalization

Quais pacotes do swing devo utilizar?

javax.accessibility javax.swing.plaf javax.swing.text

- javax.swing javax.swing.plaf.basic javax.swing.text.html
- javax.swing.border javax.swing.plaf.metal javax.swing.text.html.parser
- javax.swing.colorchooser javax.swing.plaf.multi javax.swing.text.rtf
- javax.swing.event javax.swing.plaf.synth javax.swing.tree
- javax.swing.filechooser javax.swing.table javax.swing.undo

O conversor de temperatura



O conversor de temperatura

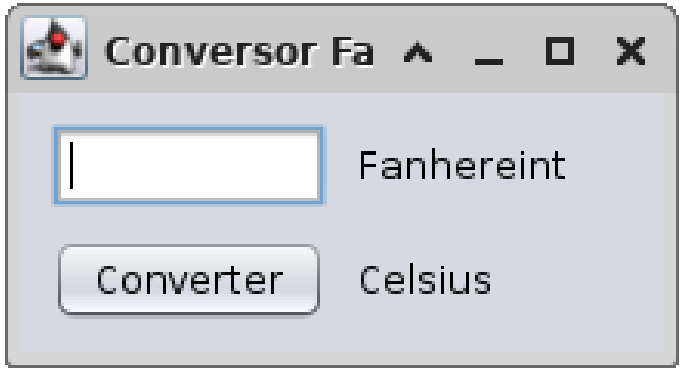
- Desenvolveremos a aplicação em dois estágios:
  - Criação e posicionamento dos componentes Swing
  - Lógica da aplicação

Criação e posicionamento dos componentes Swing

```
1 package faeterj.prj;
2
3 public class ConversorTemperatura  {
4
5 }
```

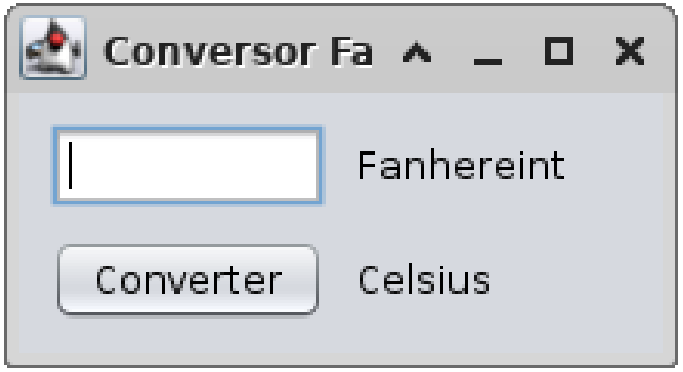
Criação e posicionamento dos componentes Swing

```
1 package faeterj.prj;
2
3 import javax.swing.JFrame;
4
5 public class ConversorTemperatura  {
6
7     private JFrame frmJanela;
8
9 }
```



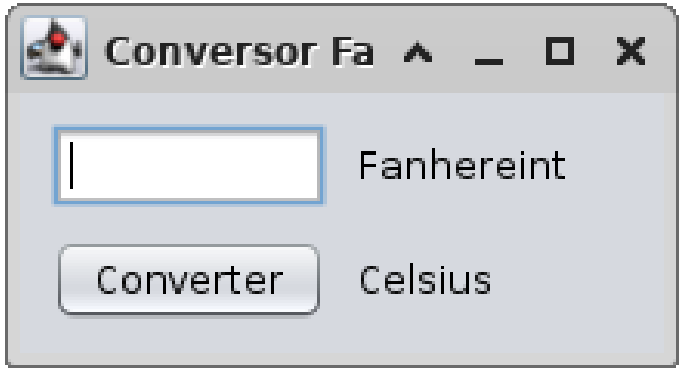
Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  import javax.swing.JTextField;
5
6  public class ConversorTemperatura  {
7
8      private JFrame frmJanela;
9      private JTextField txtFahreinheit;
10
11 }
```



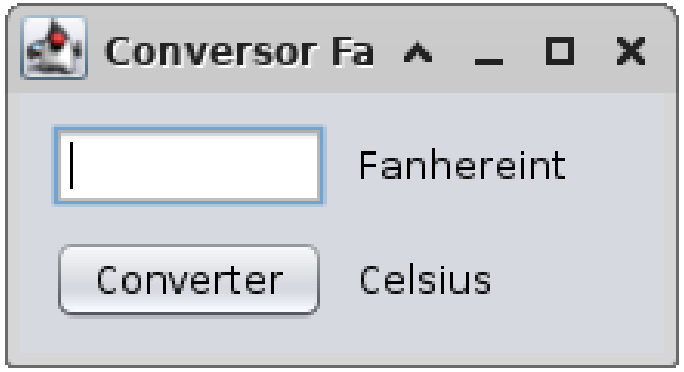
Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  import javax.swing.JTextField;
5  import javax.swing.JLabel;
6
7  public class ConversorTemperatura {
8
9      private JFrame frmJanela;
10     private JTextField txtFahreinheit;
11     private JLabel lblFahreinheit;
12
13 }
```



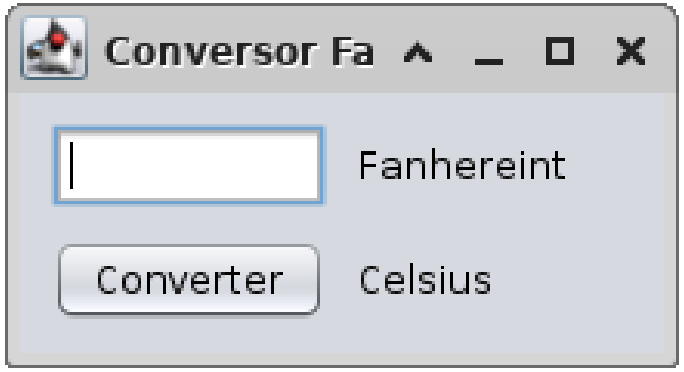
Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  import javax.swing.JTextField;
5  import javax.swing.JLabel;
6  import javax.swing.JButton;
7
8  public class ConversorTemperatura  {
9
10     private JFrame frmJanela;
11     private JTextField txtFahreinheit;
12     private JLabel lblFahreinheit;
13     private JButton btnConverter;
14
15 }
```



Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  import javax.swing.JTextField;
5  import javax.swing.JLabel;
6  import javax.swing.JButton;
7
8  public class ConversorTemperatura  {
9
10     private JFrame frmJanela;
11     private JTextField txtFahreinheit;
12     private JLabel lblFahreinheit;
13     private JButton btnConverter;
14     private JLabel lblCelsius;
15
16 }
```



Criação e posicionamento dos componentes Swing

```java
package faeterj.prj;

import javax.swing.JFrame;
import javax.swing.JTextField;
import javax.swing.JLabel;
import javax.swing.JButton;

public class ConversorTemperatura  {

    private JFrame frmJanela;
    private JTextField txtFahreinheit;
    private JLabel lblFahreinheit;
    private JButton btnConverter;
    private JLabel lblCelsius;

    public void exibir() {
        frmJanela.setVisible(true);
    }
}
```

Criação e posicionamento dos componentes Swing

```java
package faeterj.prj;

public class Principal {

    public static void main(String[] args) {
        ConversorTemperatura  ct = new ConversorTemperatura ();
        ct.exibir();
    }

}
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  //...
5
6  public class ConversorTemperatura  {
7
8      private JFrame frmJanela;
9      //..
10
11     public ConversorTemperatura () {
12         frmJanela = new JFrame();
13         frmJanela.setTitle("Conversor Fanhereint -> Celsius" );
14         frmJanela.setDefaultCloseOperation (JFrame.EXIT_ON_CLOSE);
15         frmJanela.setSize(250, 250);
16         frmJanela.setLocationRelativeTo (null);
17     }
18     //...
19 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  //...
5
6  public class ConversorT
7
8      private JFrame frmJ
9      //..
10
11     public ConversorTem
12         frmJanela = new
13         frmJanela.setTi                    nhereint -> Celsius" );
14         frmJanela.setDefaultCloseOperation (JFrame.EXIT_ON_CLOSE);
15         frmJanela.setSize(250, 250);
16         frmJanela.setLocationRelativeTo (null);
17     }
18     //...
19 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JTextField;
4  //...
5
6  public class ConversorTemperatura  {
7
8      private JFrame frmJanela;
9      private JTextField txtFanhereit;
10     //..
11
12     public ConversorTemperatura () {
13         //...
14         txtFanhereit = new JTextField();
15         frmJanela.add(txtFanhereit);
16         //...
17     }
18     //...
19 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JTextField;
4  //...
5
6  public class ConversorT
7
8      private JFrame frmJ
9      private JTextField
10     //..
11
12     public ConversorTem
13         //...
14         txtFanhereit  = new JTextField();
15         frmJanela.add(txtFanhereit);
16         //...
17     }
18     //...
19 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JTextField;
4  import javax.swing.JLabel;
5  //...
6
7  public class ConversorTemperatura  {
8
9      private JFrame frmJanela;
10     private JTextField txtFanhereit;
11     private JLabel lblFanhereit;
12     //..
13
14     public ConversorTemperatura () {
15         //...
16         txtFanhereit  = new JTextField();
17         frmJanela.add(txtFanhereit);
18
19         lblFanhereit  = new JLabel();
20         lblFanhereit.setText("Fanhereit");
21         frmJanela.add(lblFanhereit);
22         //...
23     }
24     //...
25 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JTextField;
4  import javax.swing.JLabel;
5  //...
6
7  public class ConversorTemperatura  {
8
9      private JFrame frmJan
10     private JTextField tx
11     private JLabel lblFan
12     //..
13
14     public ConversorTempe
15         //...
16         txtFanhereit  = ne
17         frmJanela.add(txt
18
19         lblFanhereit  = new JLabel();
20         lblFanhereit.setText("Fanhereit");
21         frmJanela.add(lblFanhereit);
22         //...
23     }
24     //...
25 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import java.awt.FlowLayout;
4
5  public class ConversorTemperatura  {
6
7      private JFrame frmJanela;
8      //..
9
10     public ConversorTemperatura () {
11         frmJanela = new JFrame();
12         frmJanela.setTitle("Conversor Fanhereit -> Celsius" );
13         frmJanela.setDefaultCloseOperation (JFrame.EXIT_ON_CLOSE);
14         frmJanela.setSize(250, 250);
15         frmJanela.setLocationRelativeTo (null);
16         frmJanela.setLayout(new FlowLayout());
17
18         txtFanhereint = new JTextField();
19         //...
20     }
21     //...
22 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import java.awt.FlowLayout;
4
5  public class ConversorTemperatura  {
6
7      private JFrame frmJanela;
8      //..
9
10     public ConversorTem
11         frmJanela = new
12         frmJanela.setTi                    nhereit -> Celsius" );
13         frmJanela.setDe                    on (JFrame.EXIT_ON_CLOSE);
14         frmJanela.setSi
15         frmJanela.setLo                    (null);
16         frmJanela.setLa                    out());
17
18         txtFanhereint  = new JTextField();
19         //...
20     }
21     //...
22 }
```

Criação e posicionamento dos componentes Swing

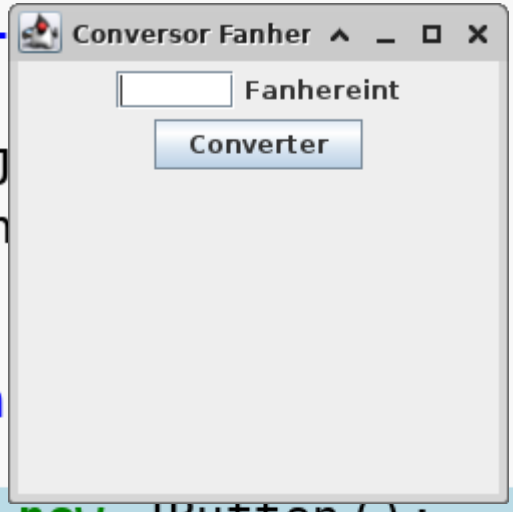
```
1  package faeterj.prj;
2
3  import javax.swing.JTextField;
4
5  public class ConversorTemperatura  {
6
7      private JTextField txtFanhereint;
8      //...
9
10     public ConversorTemperatura () {
11         //...
12         txtFanhereint  = new JTextField();
13         txtFanhereint.setColumns(5);
14         //...
15     }
16     //...
17 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  import javax.swing.JButton;
5  //...
6
7  public class ConversorTemperatura  {
8
9      private JFrame frmJanela;
10     private JButton btnConverter;
11     //...
12
13     public ConversorTemperatura () {
14         //...
15         btnConverter = new JButton();
16         btnConverter.setText("Converter");
17         frmJanela.add(btnConverter);
18         //...
19     }
20     //...
21 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  import javax.swing.JButton;
5  //...
6
7  public class ConversorT
8
9      private JFrame frmJ
10     private JButton btn
11     //...
12
13     public ConversorTem
14         //...
15         btnConverter = new JButton();
16         btnConverter.setText("Converter");
17         frmJanela.add(btnConverter);
18         //...
19     }
20     //...
21 }
```

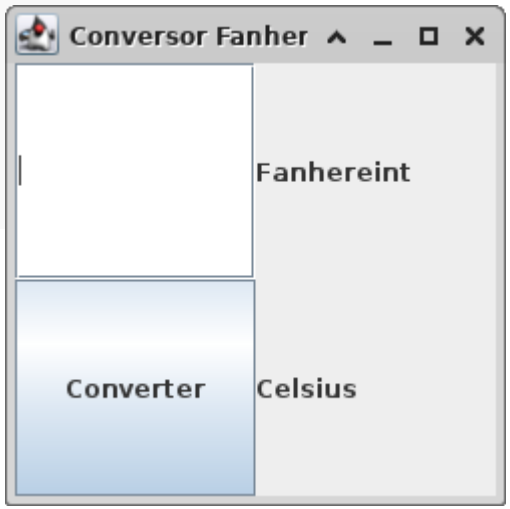


Criação e posicionamento dos componentes Swing

```java
package faeterj.prj;

import javax.swing.JFrame;
import javax.swing.JLabel;
//...

public class ConversorTemperatura  {

    private JFrame frmJanela;
    private JLabel lblCelsius;
    //...

    public ConversorTemperatura () {
        //...
        lblCelsius = new JLabel();
        lblCelsius.setText("Celsius");
        frmJanela.add(lblCelsius);
        //...
    }
    //...
}
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  import java.awt.GridLayout;
5  //...
6
7  public class ConversorTemperatura  {
8
9      private JFrame frmJanela;
10     //...
11
12     public ConversorTemperatura () {
13         //...
14         frmJanela.setLayout(new GridLayout(2, 2));
15         //...
16     }
17     //...
18 }
```



Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JFrame;
4  //...
5
6  public class ConversorTemperatura  {
7
8      private JFrame frmJanela;
9      //...
10
11     public ConversorTemperatura () {
12         frmJanela = new JFrame();
13         //frmJanela.setSize(250, 250);
14         //...
15
16         frmJanela.pack();
17     }
18     //...
19 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import java.awt.GridLayout;
4  //...
5  public class ConversorTemperatura  {
6      //...
7      public ConversorTemperatura () {
8          //...
9          GridLayout l = new GridLayout(2, 2);
10         l.setHgap(10);
11         frmJanela.setLayout(l);
12         //...
13     }
14     //...
15 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import java.awt.GridLayout;
4  //...
5  public class ConversorTemperatura  {
6      //...
7      public ConversorTemperatura () {
8          //...
9          GridLayout l = new GridLayout(2, 2);
10         l.setHgap(10);
11         l.setVgap(10);
12         frmJanela.setLayout(l);
13         //...
14     }
15     //...
16 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JPanel;
4  //...
5  public class ConversorTemperatura  {
6      //...
7      public ConversorTemperatura () {
8          //...
9          frmJanela.setLocationRelativeTo (null);
10         JPanel p = new JPanel();
11         frmJanela.setContentPane (p);
12         //...
13     }
14     //...
15 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JPanel;
4  import javax.swing.border.EmptyBorder;
5  //...
6  public class ConversorTemperatura  {
7      //...
8      public ConversorTemperatura () {
9          //...
10         frmJanela.setLocationRelativeTo (null);
11         JPanel p = new JPanel();
12         p.setBorder(new EmptyBorder(10, 10, 10, 10));
13         frmJanela.setContentPane(p);
14         //...
15     }
16     //...
17 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JOptionPane;
4  import javax.swing.UIManager;
5
6  public class Principal {
7
8      public static void main(String[] args) {
9          try {
10             UIManager.setLookAndFeel(
11                 "com.sun.java.swing.plaf.gtk.GTKLookAndFeel"
12             );
13         } catch (Exception e) {
14             JOptionPane.showMessageDialog(
15                 null,
16                 e.getClass() + "\n" + e.getMessage(),
17                 "Ops!",
18                 JOptionPane.ERROR_MESSAGE
19             );
20         }
21         ConversorTemperatura  ct = new ConversorTempe
22         ct.exibir();
23     }
24
25 }
```

Criação e posicionamento dos componentes Swing

```
1  package faeterj.prj;
2
3  import javax.swing.JOptionPane;
4  import javax.swing.UIManager;
5
6  public class Principal {
7
8      public static void main(String[] args) {
9          try {
10             UIManager.setLookAndFeel(
11                 "javax.swing.plaf.nimbus.NimbusLookAndFeel"
12             );
13         } catch (Exception e) {
14             JOptionPane.showMessageDialog(
15                 null,
16                 e.getClass() + "\n" + e.getMessage(),
17                 "Ops!",
18                 JOptionPane.ERROR_MESSAGE
19             );
20         }
21         ConversorTemperatura ct = new ConversorTempera
22         ct.exibir();
23     }
24
25 }
```