

User Interface

Fundamentals to programming I

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2020



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Introduction



The various types of user interfaces

- Graphical User Interface (GUI)
- Command Line Interface (CLI)
- Natural User Interface (NUI)
- Text User Interface (TUI)
- Voice User Interface (VUI)

Graphical User Interface (GUI)



Java

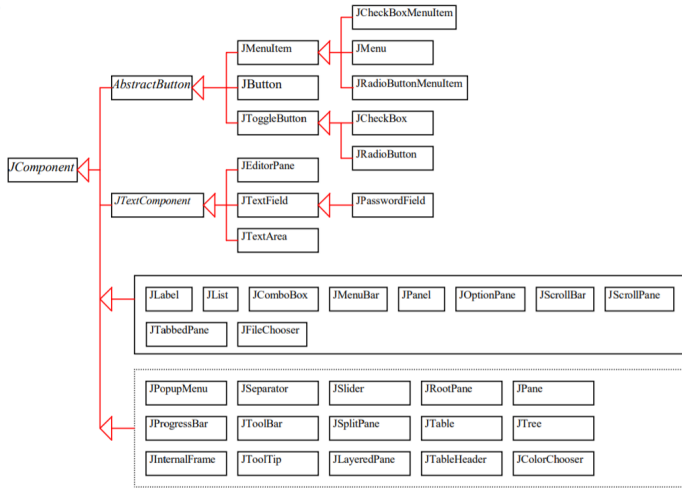
AWT(Abstract Window Toolkit)

- Java 1.0
- Everything to the O.S
- Simple Graphics

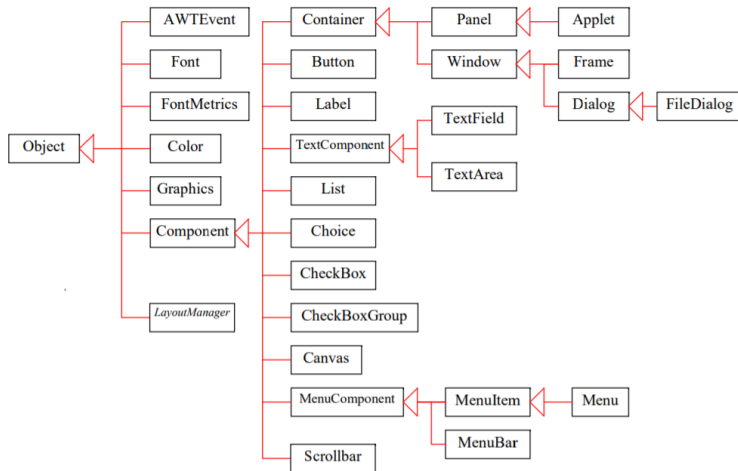
SWING

- Java 1.2
- All over a window
- Complicated Graphics

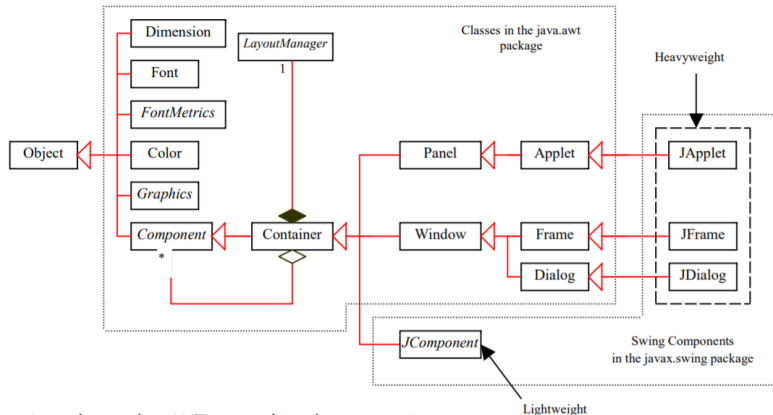
Hierarchy of Swing JComponent



Hierarchy of AWT



Hierarchy of GUI



Hierarchy of JFrame

javax.swing

Class JFrame

java.lang.Object

java.awt.Component

java.awt.Container

java.awt.Window

java.awt.Frame

javax.swing.JFrame

Example of JFrame

```
1 import javax.swing.JFrame;
2
3 public class javaFrameExample extends JFrame{
4     public javaFrameExample() {
5         this.setSize(500, 500);
6     }
7
8     public static void main(String[] args) {
9         javaFrameExample window = new javaFrameExample();
10        window.setVisible(true);
11
12    }
13 }
14
15
```

Hierarchy of JPanel

javax.swing

Class JPanel

java.lang.Object

java.awt.Component

java.awt.Container

javax.swing.JComponent

javax.swing.JPanel

Example of JPanel

```
1 import java.awt.Color;
2 import javax.swing.JFrame;
3 import javax.swing.JPanel;
4
5 public class javaFrameExample extends JFrame{
6     public javaFrameExample() {
7         this.setSize(500, 500);
8         componentWindow();
9     }
10
11     private void componentWindow() {
12         JPanel panel = new JPanel();
13         panel.setBackground(Color.BLACK);
14         this.getContentPane().add(panel);
15         panel.setLayout(null);
16     }
17
18     public static void main(String[] args) {
19         javaFrameExample window = new javaFrameExample();
20         window.setVisible(true);
21     }
22 }
23
24 }
```

Hierarchy of Label

javax.swing

Class JLabel

java.lang.Object

java.awt.Component

java.awt.Container

javax.swing.JComponent

javax.swing.JLabel

Example of Label

```
1 import java.awt.Color;
2 import javax.swing.JFrame;
3 import javax.swing.JLabel;
4 import javax.swing.JPanel;
5
6 public class javaFrameExample extends JFrame{
7     public javaFrameExample() {
8         this.setSize(500, 500);
9         componentWindow();
10    }
11
12    private void componentWindow() {
13        JPanel panel = new JPanel();
14        this.getContentPane().add(panel);
15
16        JLabel str = new JLabel("Hello World");
17        panel.add(str);
18    }
19
20    public static void main(String[] args) {
21        javaFrameExample window = new javaFrameExample();
22        window.setVisible(true);
23    }
24 }
25 }
```

References - Web Sites

- <https://docs.oracle.com/javase/7/docs/api/>
- <https://www.ingeniovirtual.com/la-interfaz-de-usuario-ui-y-su-importancia/>
- <https://www.fdi.ucm.es/profesor/jpavon/poo/Tema6resumido.pdf>
- <https://www.youtube.com/watch?v=7q2VBGIKeYc>
- <https://www.youtube.com/watch?v=RF7Ko3AgRf8&list=PLWtYZ2ejMVJkj0uTCzIk61j7XKfpIR74K&index=87>
- <https://es.dreamstime.com/sistema-limpio-y-moderno-de-la-interfaz-gr%C3%A1fica-usuario-im>