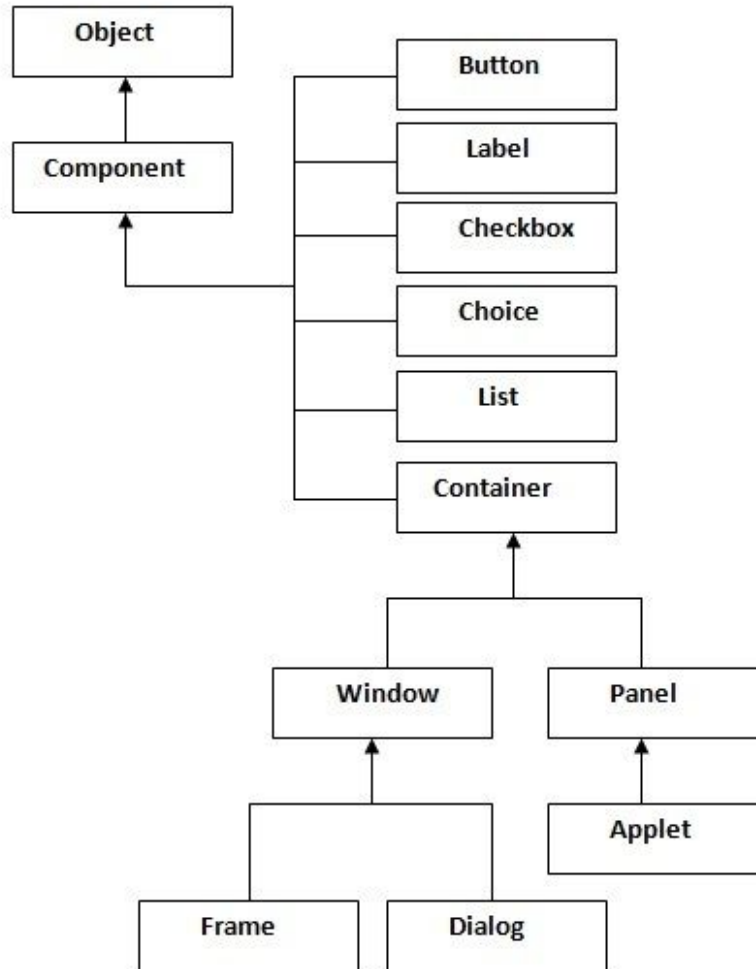# AWT

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AWT

The Abstract Window Toolkit (AWT) is Java's original platform-dependent windowing, graphics, and user-interface widget toolkit preceding Swing. The AWT is part of the Java Foundation Classes (JFC) — the standard API for providing a graphical user interface (GUI) for a Java program.

Java AWT

First extends Frame

```java
public class MyGUIProgram {
    public static void main(String[] args) {
        First f = new First();
    }
}
class First extends Frame {
    First() {
        Button b = new Button("click me");
        b.setBounds(30, 100, 80, 30);// setting button position

        add(b);// adding button into frame
        setSize(300, 300);// frame size 300 width and 300 height
        setLayout(null);// no layout manager
        setVisible(true);// now frame will be visible, by default not visible
    }
```

Event classes and Listener interfaces

Event Classes	Listener Interfaces
ActionEvent	ActionListener
MouseEvent	MouseListener and MouseMotionListener
MouseWheelEvent	MouseWheelListener
KeyEvent	KeyListener
ItemEvent	ItemListener
TextEvent	TextListener
AdjustmentEvent	AdjustmentListener
WindowEvent	WindowListener
ComponentEvent	ComponentListener
ContainerEvent	ContainerListener
FocusEvent	FocusListener

For registering the component with the Listener, many classes provide the registration methods. For example:

- **Button**
  - public void addActionListener(ActionListener a){}
- **MenuItem**
  - public void addActionListener(ActionListener a){}
- **TextField**
  - public void addActionListener(ActionListener a){}
  - public void addTextListener(TextListener a){}
- **TextArea**
  - public void addTextListener(TextListener a){}
- **Checkbox**
  - public void addItemListener(ItemListener a){}
- **Choice**
  - public void addItemListener(ItemListener a){}
- **List**
  - public void addActionListener(ActionListener a){}
  - public void addItemListener(ItemListener a){}

new ActionListener

```java
class First2 {
    First2() {
        Frame f = new Frame();
        Button b = new Button("click me");
        b.setBounds(30, 50, 80, 30);
        f.add(b);
        f.setSize(300, 300);
        f.setLayout(null);
        f.setVisible(true);
        b.addActionListener(new ActionListener() {

            @Override
            public void actionPerformed(ActionEvent e) {
                b.setLabel("Labas");
            }
        });
    }
    public static void main(String args[]) {
        First2 f = new First2();
    }
}
```

http://www3.ntu.edu.sg/home/ehchua/programming/java/j4a_gui.html

PVZ

```java
public class Isdestymas {
    public static void main(String[] args) {
        Frame f = new Frame();
        f.setBounds(100, 100, 500, 200);
        f.add(BorderLayout.NORTH, new Button("North"));
        f.add(BorderLayout.SOUTH, new Button("South"));
        f.add(BorderLayout.EAST, new Button("East"));
        f.add(BorderLayout.WEST, new Button("West"));
        f.add(BorderLayout.CENTER, new Button("Center"));
        f.setVisible(true);
    }
}
```
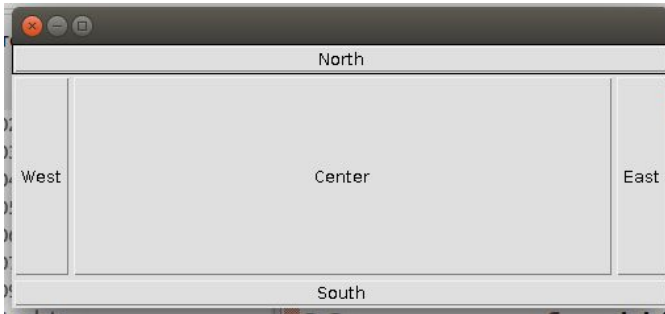
U1 AWT

Write an AWT GUI application (called AWTCounter) as shown in the Figure. Each time the "Count" button is clicked, the counter value shall increase by 1.