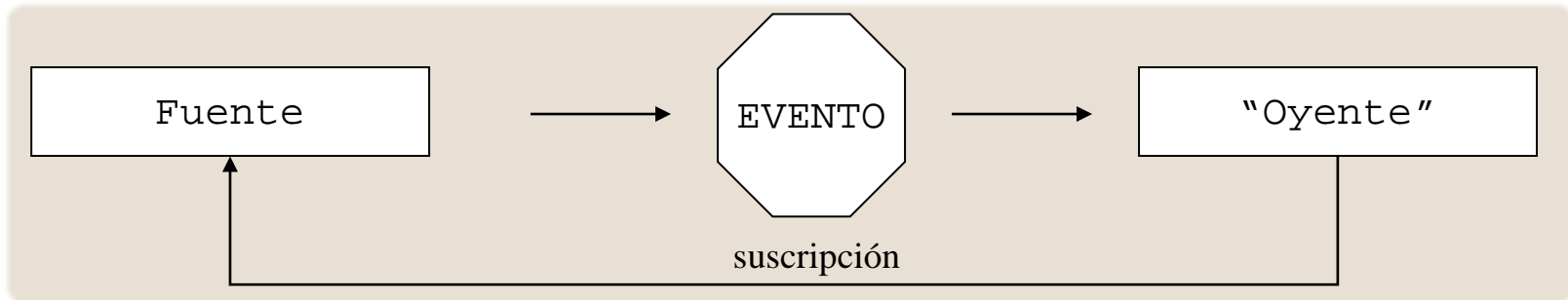
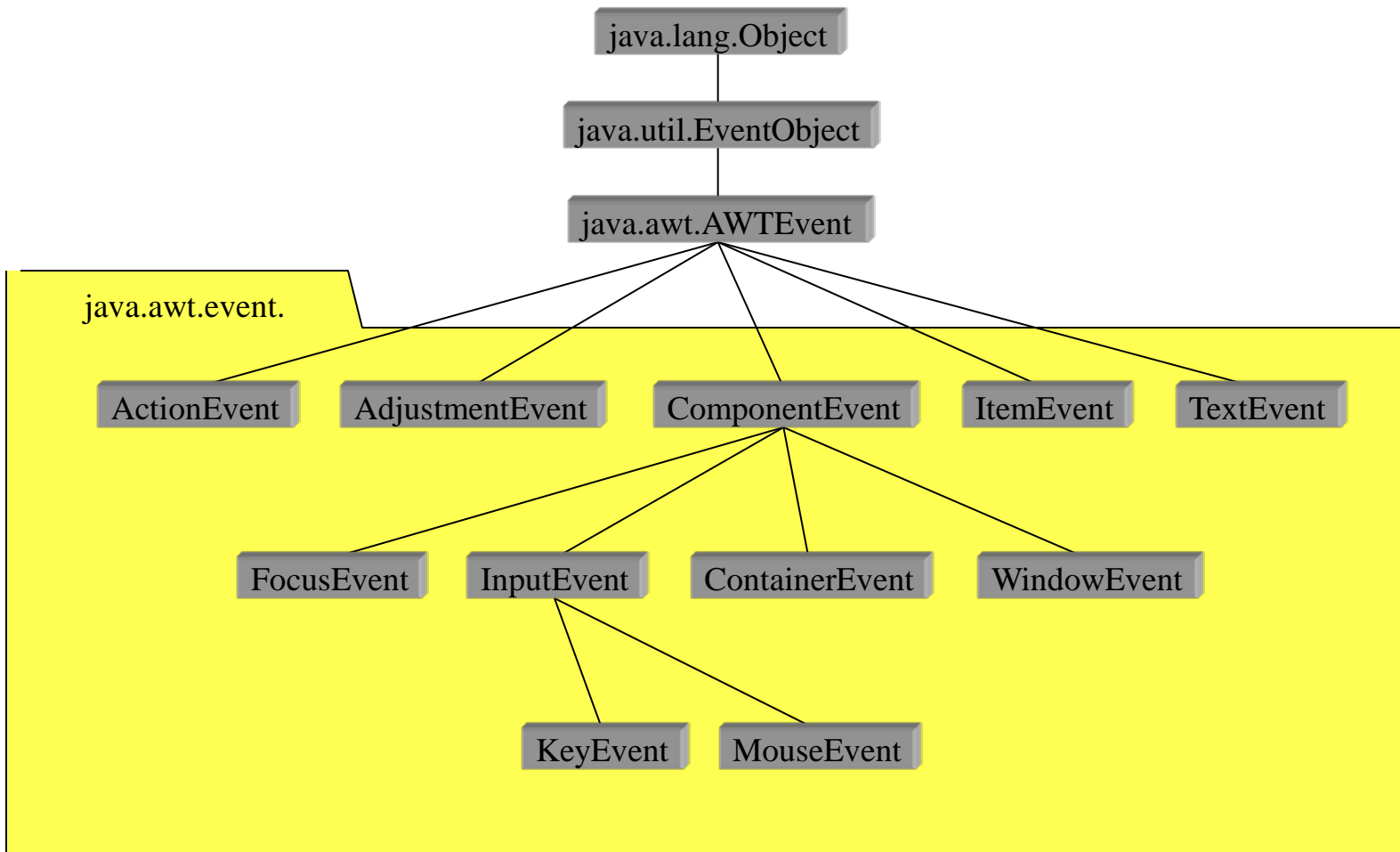


Interacción con GUIs

Delegation Event Model (Observer)



Eventos



Listeners

ActionListener	actionPerformed(ActionEvent)
ItemListener	itemStateChanged(ItemEvent)
MouseListener	mousePressed(MouseEvent) mouseReleased(MouseEvent) mouseEntered(MouseEvent) mouseExited(MouseEvent) mouseClicked(MouseEvent)
MouseMotionListener	mouseDragged(MouseEvent) mouseMoved(MouseEvent)
KeyListener	keyPressed(KeyEvent) keyReleased(KeyEvent) keyTyped(KeyEvent)
FocusListener	focusGained(FocusEvent) focusLost(FocusEvent)
AdjustmentListener	adjustmentValueChanged(AdjustmentEvent)
ComponentListener	componentMoved(ComponentEvent) componentHidden(ComponentEvent) componentResized(ComponentEvent) componentShown(ComponentEvent)
WindowListener	windowClosing(WindowEvent) windowOpened(WindowEvent) windowIconified(WindowEvent) windowDeiconified(WindowEvent) windowClosed(WindowEvent) windowActivated(WindowEvent) windowDeactivated(WindowEvent)
ContainerListener	componentAdded(ContainerEvent) componentAdded(ContainerEvent)
TextListener	textValueChanged(TextEvent)

Hierarchy For Package java.awt.event

Class Hierarchy

- java.lang.Object
 - java.awt.event.ComponentAdapter (implements java.awt.event.ComponentListener)
 - java.awt.event.ContainerAdapter (implements java.awt.event.ContainerListener)
 - java.util.EventListenerProxy<T> (implements java.util.EventListener)
 - java.awt.event.AWTEventListenerProxy (implements java.awt.event.AWTEventListener)
 - java.util.EventObject (implements java.io.Serializable)
 - java.awt.AWTEvent
 - java.awt.event.ActionEvent
 - java.awt.event.AdjustmentEvent
 - java.awt.event.ComponentEvent
 - java.awt.event.ContainerEvent
 - java.awt.event.FocusEvent
 - java.awt.event.InputEvent
 - java.awt.event.KeyEvent
 - java.awt.event.MouseEvent
 - java.awt.event.MouseWheelEvent
 - java.awt.event.PaintEvent
 - java.awt.event.WindowEvent
 - java.awt.event.HierarchyEvent
 - java.awt.event.InputMethodEvent
 - java.awt.event.InvocationEvent (implements java.awt.ActiveEvent)
 - java.awt.event.ItemEvent
 - java.awt.event.TextEvent
 - java.awt.event.FocusAdapter (implements java.awt.event.FocusListener)
 - java.awt.event.HierarchyBoundsAdapter (implements java.awt.event.HierarchyBoundsListener)
 - java.awt.event.KeyAdapter (implements java.awt.event.KeyListener)
 - java.awt.event.MouseAdapter (implements java.awt.event.MouseListener, java.awt.event.MouseMotionListener, java.awt.event.MouseWheelListener)
 - java.awt.event.MouseMotionAdapter (implements java.awt.event.MouseMotionListener)
 - java.awt.event.WindowAdapter (implements java.awt.event.WindowFocusListener, java.awt.event.WindowListener, java.awt.event.WindowStateListener)

Interface Hierarchy

- java.util.EventListener
 - java.awt.event.ActionListener
 - java.awt.event.AdjustmentListener
 - java.awt.event.AWTEventListener
 - java.awt.event.ComponentListener
 - java.awt.event.ContainerListener
 - java.awt.event.FocusListener
 - java.awt.event.HierarchyBoundsListener
 - java.awt.event.HierarchyListener
 - java.awt.event.InputMethodListener
 - java.awt.event.ItemListener
 - java.awt.event.KeyListener
 - java.awt.event.MouseListener
 - java.awt.event.MouseMotionListener
 - java.awt.event.MouseWheelListener
 - java.awt.event.TextListener
 - java.awt.event.WindowFocusListener
 - java.awt.event.WindowListener
 - java.awt.event.WindowStateListener

Estudiamos AWT por simplificar
[Ver swing](#)


```

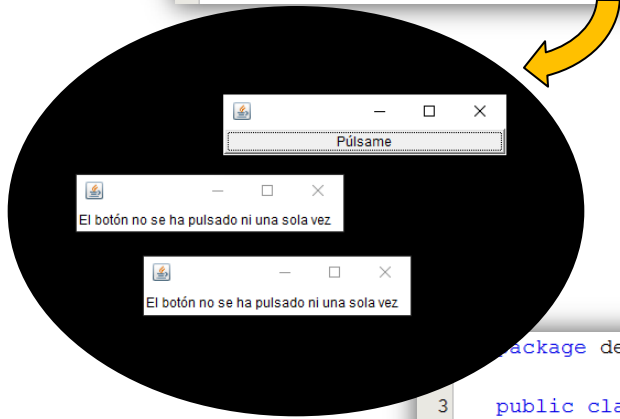
1 package delegationeventmodel;
2
3 public class DelegationEventModel {
4     public static void main(String[] args) {
5         Emisor fe=new Emisor();
6         Receptor fr=new Receptor(fe.boton);
7         Receptor fr2=new Receptor(fe.boton);
8     }
9 }

```

```

1 package delegationeventmodel;
2
3 public class Emisor extends java.awt.Frame {
4     java.awt.Button boton=new java.awt.Button("Púlsame");
5     public Emisor() {
6         add(boton);
7         setVisible(true);
8         pack();
9     }
10 }

```



```

package delegationeventmodel;

3 public class Receptor extends java.awt.Frame implements java.awt.event.MouseListener {
4
5     private int toques = 0;
6     java.awt.Label etiqueta = new java.awt.Label("El botón no se ha pulsado ni una sola vez");
7
8     public Receptor(java.awt.Component c) {
9         add(etiqueta);
10        setVisible(true);
11        pack();
12        c.addMouseListener(this); ← Suscripción
13    }
14
15    @Override public void mouseClicked(java.awt.event.MouseEvent evt) {
16        etiqueta.setText("El botón se ha pulsado " + (++toques) + ((toques == 1) ? " vez" : " veces"));
17    }
18
19    @Override public void mousePressed(java.awt.event.MouseEvent evt) {}
20    @Override public void mouseReleased(java.awt.event.MouseEvent evt) {}
21    @Override public void mouseEntered(java.awt.event.MouseEvent evt) {}
22    @Override public void mouseExited(java.awt.event.MouseEvent evt) {}
23 }

```