

Java Programming 2

Events in Swing

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Events in Swing

An event is **fired** every time something happens in the program

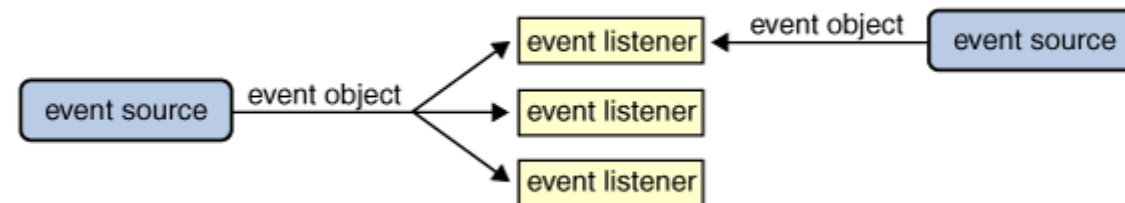
 JButton is pressed

 Window is shown/hidden/opened/closed

 User selects an item in a JComboBox or JList

 User types into a JTextField

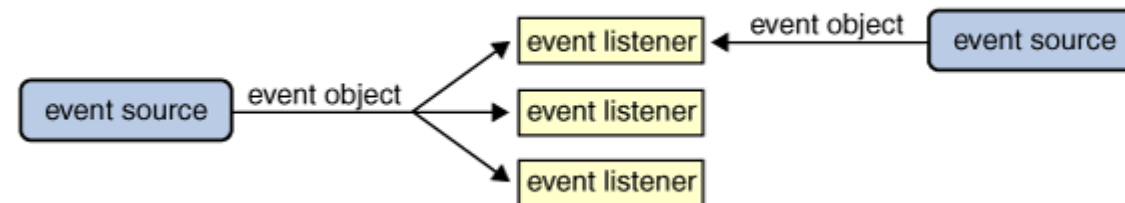
...



Event listeners

If you want to deal with an event, you need to
Implement a **listener** for that type of event
Register it with the event source

Then every time an event of that type is fired, your event listener will be called



Handling button press events

```
 JButton button = new JButton("Press me!");  
 frame.getContentPane().add(button);  
 button.addActionListener(new ActionListener() {  
     @Override  
     public void actionPerformed(ActionEvent e) {  
         System.out.println("Hello world");  
     }  
 } ) ;
```



Anonymous
inner class

What's going on?

Button fires an `ActionEvent` when it is pressed

You need an `ActionListener` to process that event

One method: `actionPerformed`

We have provided an `ActionListener` and registered it with the button through `addActionListener`

So:

Every time the button is pressed ...

Our `ActionListener.actionPerformed()` method is called!

(Give it a try in the lab/at home)

Some useful Swing listeners

Listener	Methods
ActionListener	actionPerformed(ActionEvent)
ComponentListener	componentHidden(ComponentEvent) componentMoved(ComponentEvent) ...
MouseListener	mouseClicked(MouseEvent) mouseEntered(MouseEvent) ...
ListSelectionListener	valueChanged(ListSelectionEvent)
WindowListener	windowOpened(WindowEvent) windowClosed(WindowEvent) ...

All options at <https://docs.oracle.com/javase/tutorial/uiswing/events/api.html>

General strategy

1. Instantiate the appropriate GUI components (buttons, combo boxes, etc)
2. Register **callbacks** for their interactive behaviour
i.e., register for all events that you might need to catch
3. Add each component to the top-level window (e.g., JFrame)
4. Make the window visible