

Java Programming

EVENT HANDLING

Arash Habibi Lashkari

Ph.D. Candidate of UTM University

Kuala Lumpur, Malaysia

EVENTS, EVENT SOURCES AND LISTENERS

- Important components involved in event-handling:
 - Events
 - Events are represented as **Event** objects.
 - For example, a button-click event is represented as an **ActionEvent** object.
 - Event sources
 - An **event source** is a component (e.g. a **JButton** object) closely associated with the event which sends notifications to **event listeners**.
 - For example, the **JButton** object associated with a button-click event.

EVENTS, EVENT SOURCES AND LISTENERS

- Event listeners
 - Event listeners are objects which will be notified by event sources about the occurrence of events.

HANDLING BUTTON-CLICK EVENTS

- Suppose we would like the applet to display a message when the user clicks on the button.



HANDLING BUTTON-CLICK EVENTS

- The following steps can be used for handling events:
 1. Declare class as an event listener
 2. Register event listener with event source
 3. Write event-handling code

HANDLING BUTTON-CLICK EVENTS

- Register event listener with event source :

```
    :  
    JTextField teks = new JTextField(15);  
    btnOK = new JButton("Click me please....");  
public void init() {  
    setLayout(new FlowLayout(FlowLayout.CENTER,5,10));  
    add(btnOK);  
    add(teks);  
    btnOK.addActionListener(bh);  
    :
```

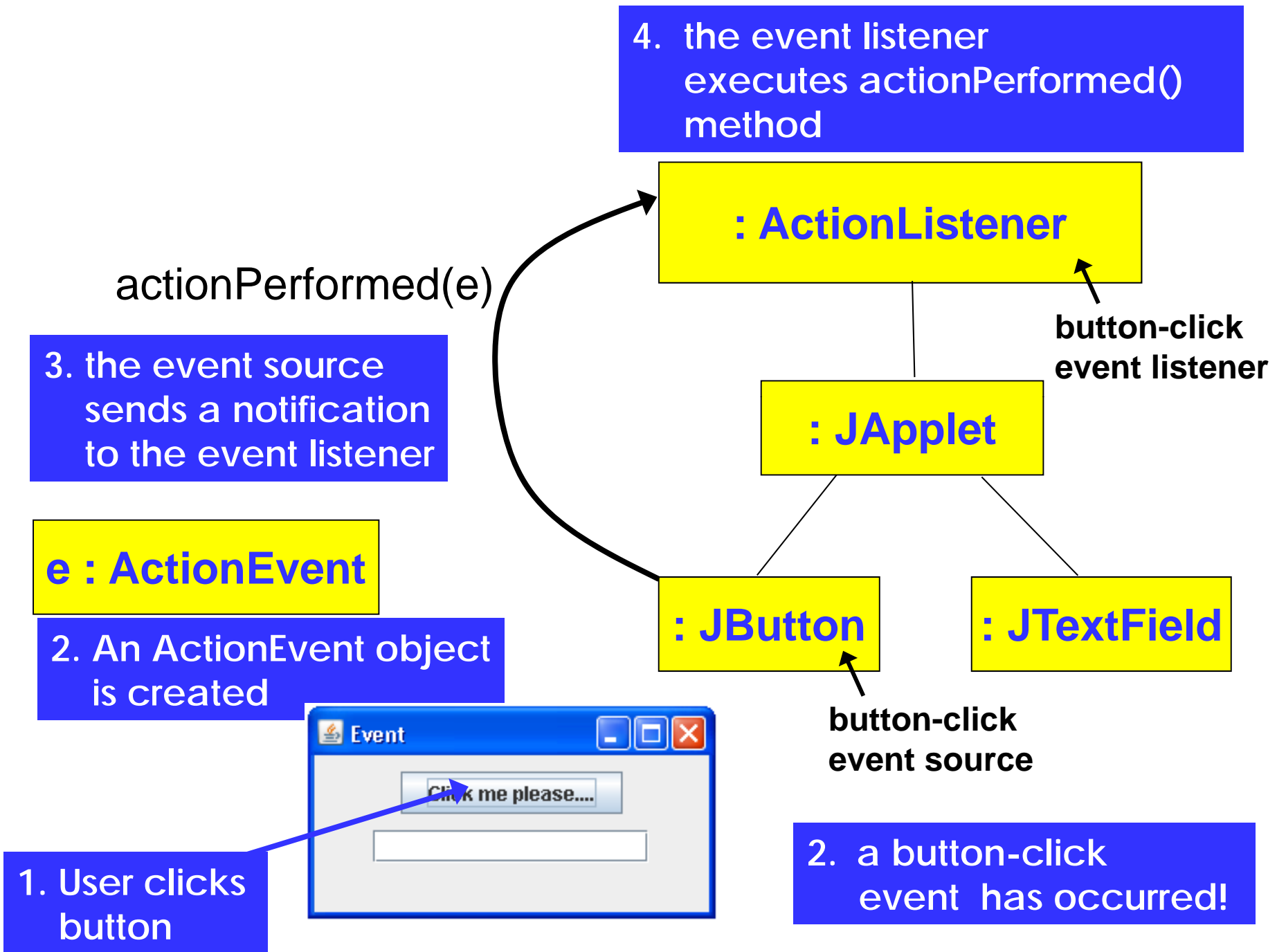
HANDLING BUTTON-CLICK EVENTS

- Write event-handling code :

```
Public class TestApplet extends JApplet implements ActionListener {  
  
    public void actionPerformed(ActionEvent e)  
    {  
        Object obj = e.getSource();  
        if(obj==btnOK)  
            teks.setText("Thank you !!!");  
    }  
}
```


HANDLING BUTTON-CLICK EVENTS

- The components involved:
 - Event
 - The `ActionEvent` object
 - Event source
 - The “Click me please ...” `JButton` object
 - When the user clicks on the button, the `JButton` object sends an `ActionEvent` object to all event listeners.
 - Event listener
 - This object will receive an `ActionEvent` object from the `JButton` object when a button-click event occurs.

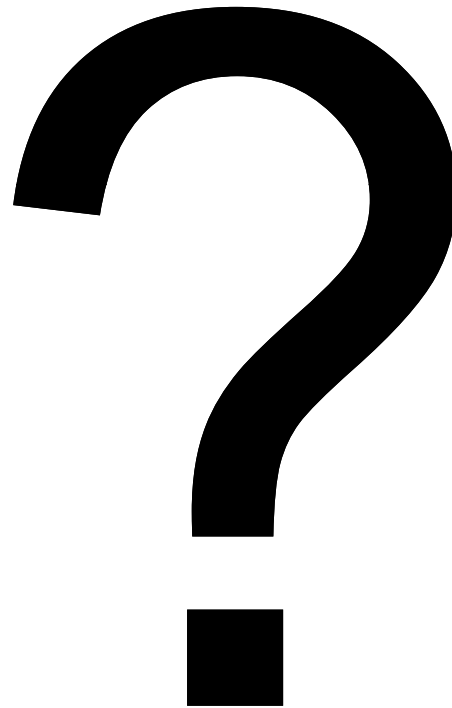


User Action	Event Source	Event Object Created	Type of Listener
Click on a button	JButton	ActionEvent	ActionListener
Select a new item in a combo box	JComboBox	ItemEvent, ActionEvent	ItemListener, ActionListener
Select an item from a list	JList	ListSelectionEvent	ListSelectionListener
Click on a checkbox	JCheckBox	ItemEvent, ActionEvent	ItemListener, ActionListener
Click on a radio button	JRadioButton	ItemEvent, ActionEvent	ItemListener, ActionListener
Drag slider knob	JSlider	ChangeEvent	ChangeListener
Press enter in a textfield	JTextField	ActionEvent	ActionListener

Example	Event source	Method for registering as listener
1	JButton	addActionListener()
2	JTextField	addActionListener()
3	JCheckBox	addItemListener()
4	JSlider	addChangeListener()

Example	Type of Listener	Method that must be implemented by listener
1, 2	ActionListener	public void actionPerformed(ActionEvent e)
3	ItemListener	public void itemStateChanged(ItemEvent e)
4	ChangeListener	public void stateChanged(ChangeEvent e)

Questions



THANK YOU

Arash Habibi Lashkari

PHD. Candidate of UTM

Kuala Lumpur, Malaysia

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THE END