Event and Listener (Java Event Handling)

- Changing the state of an object is known as an event. For example, click on button, dragging mouse etc.
- The java.awt.event package provides many event classes and Listener interfaces for event handling.

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

Registration Methods

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

- **Button**
  - 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){}

Java Event Handling Code

We can put the event handling code into one of the following places:

1. Within class
2. Other class

```
class AEvent extends Frame implements ActionListener{
TextField tf;
AEvent(){
tf=new TextField();
tf.setBounds(60,50,170,20);
Button b=new Button("click me");
b.setBounds(100,120,80,30);
b.addActionListener(this);//passing current instance
add(b);add(tf);
setSize(300,300);
setLayout(null);
setVisible(true);  }
public void actionPerformed(ActionEvent e){
tf.setText("Welcome");  }
public static void main(String args[]){
new AEvent();
}  }
```