

GUI in Java



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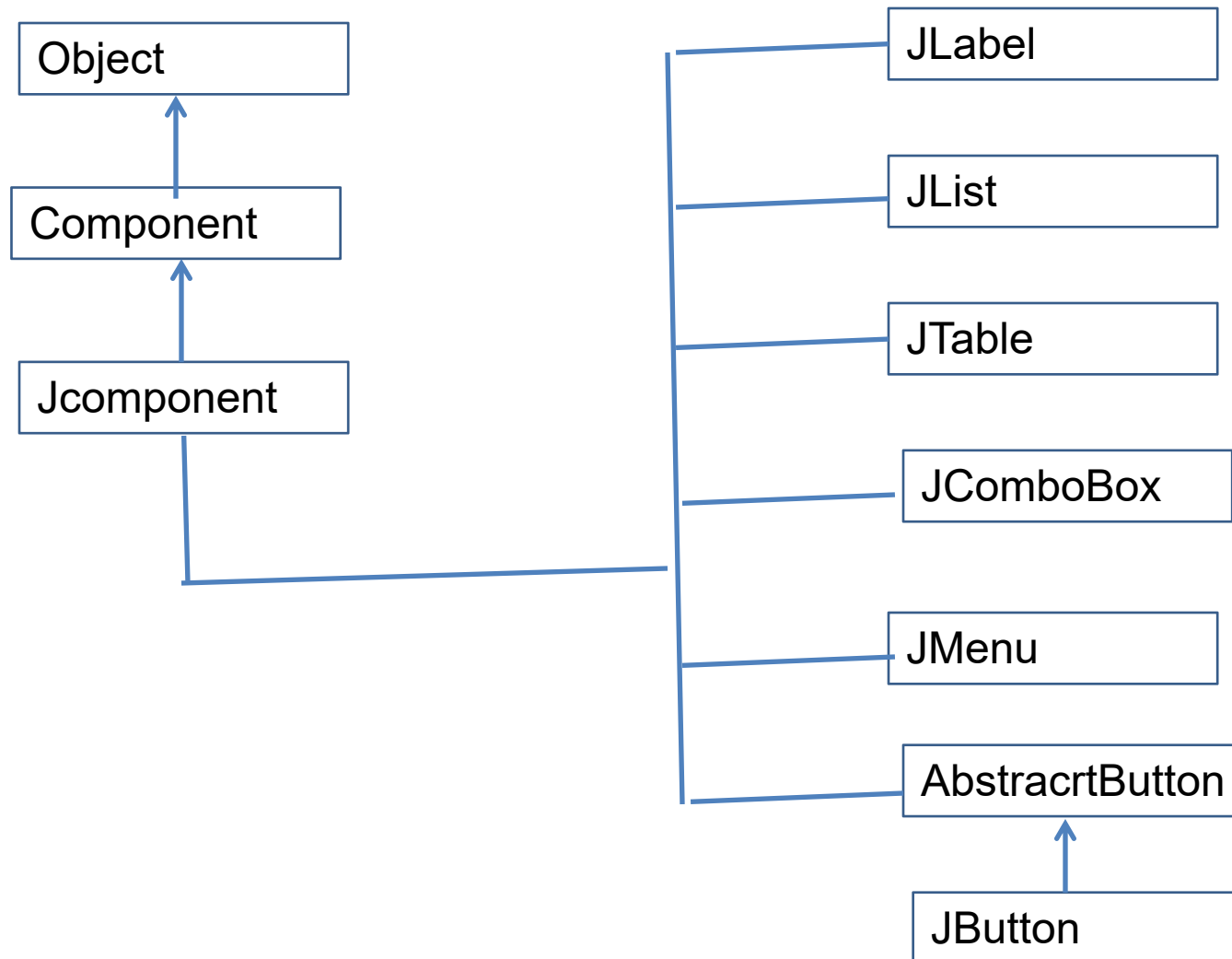
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Intro to GUI

- Graphical User Interface of an application can include a variety of components such as button, checkbox, text field, menu and dialog boxes. A user interact with GUI application through these components.
- Components can be availed from -
 - AWT package
 - Swing package
- Swing is built on top of AWT package. Swing provides platform independent components unlike AWT.

Java swing component classes



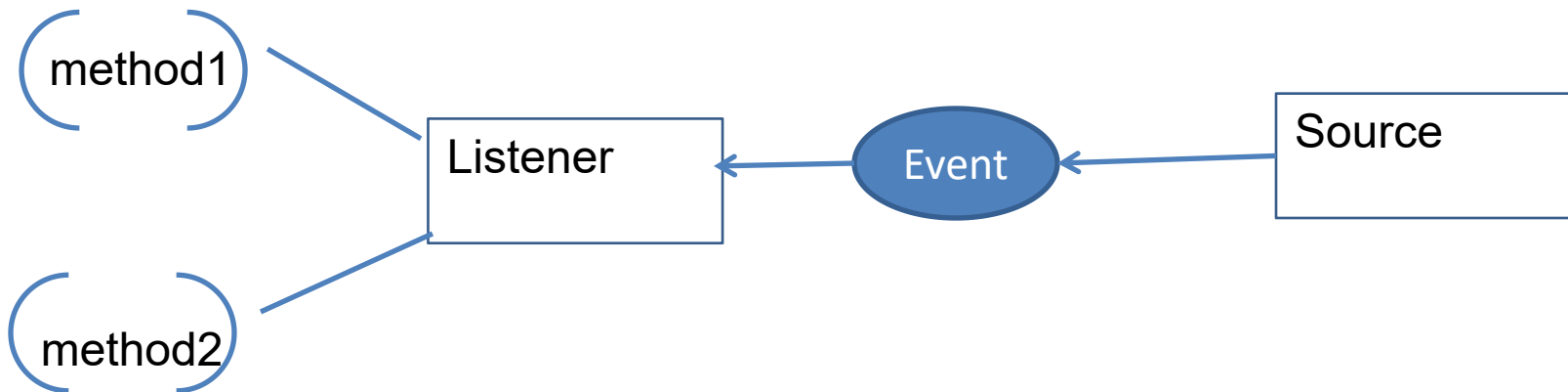
Swing program

- ✓ By creating an object of JFrame class
- ✓ By extending JFrame class

Example - myswing.java

Event Handling

- Approach for handling events is based on Delegation Event Model
- Event - It is an object that describes a state change in a source. It can be generated as a consequence of an user interacting with the elements in a GUI. Ex - Pressing a button .



Delegation Event Model

- ✓ Source - It is an object that generates an event. This occurs when the internal state of that object changes in some way.
 - ✓ A source must register listener in order to receive notification about a specific type of event.
void addTypeListener (Listener el)
- ✓ Listener -It is an object that is notified when an event occurs.
 - ✓ It must be registered with one or more sources to receive notifications.
 - ✓ It must implement methods to receive and process these notifications.

Example - myEventswing.java

Action Event

- ✓ ActionEvent class is defined in java.awt.event package

String getActionCommand ()

To get the command name of the invoking object.

- ✓ Listener for ActionEvent is created by implementing ActionListener interface which has only one method-

void actionPerformed(ActionEvent ae)

MouseEvent

- ✓ This class is defined in java.awt.event package
- ✓ Listener for MouseEvent is created by implementing MouseListener interface which has the following methods-

- void mouseClicked(MouseEvent ae)
 - void mouseEntered(MouseEvent ae)
 - void mouseExited(MouseEvent ae)
 - void mousePressed(MouseEvent ae)
 - void mouseReleased(MouseEvent ae)

MouseMotionListener -

- void mouseDragged(MouseEvent ae)
 - void mouseMoved(MouseEvent ae)



Thank you