ReSwing – A Reactive Interface for Scala Swing

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Java Swing / Scala Swing / ReSwing

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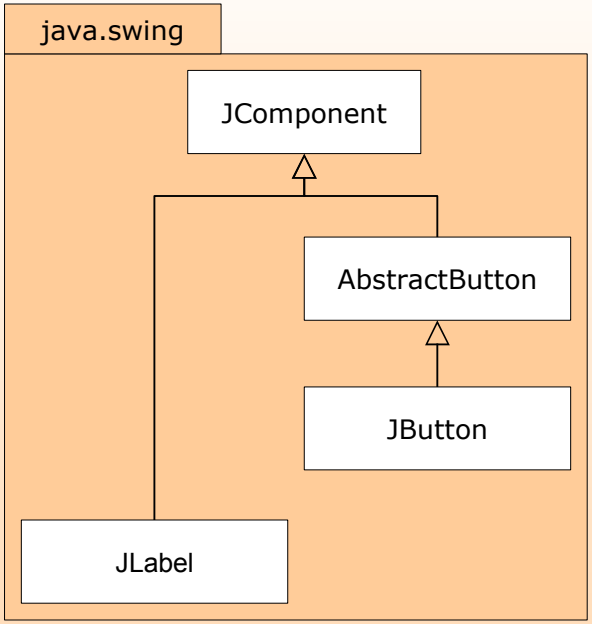

Java Swing / Scala Swing / ReSwing

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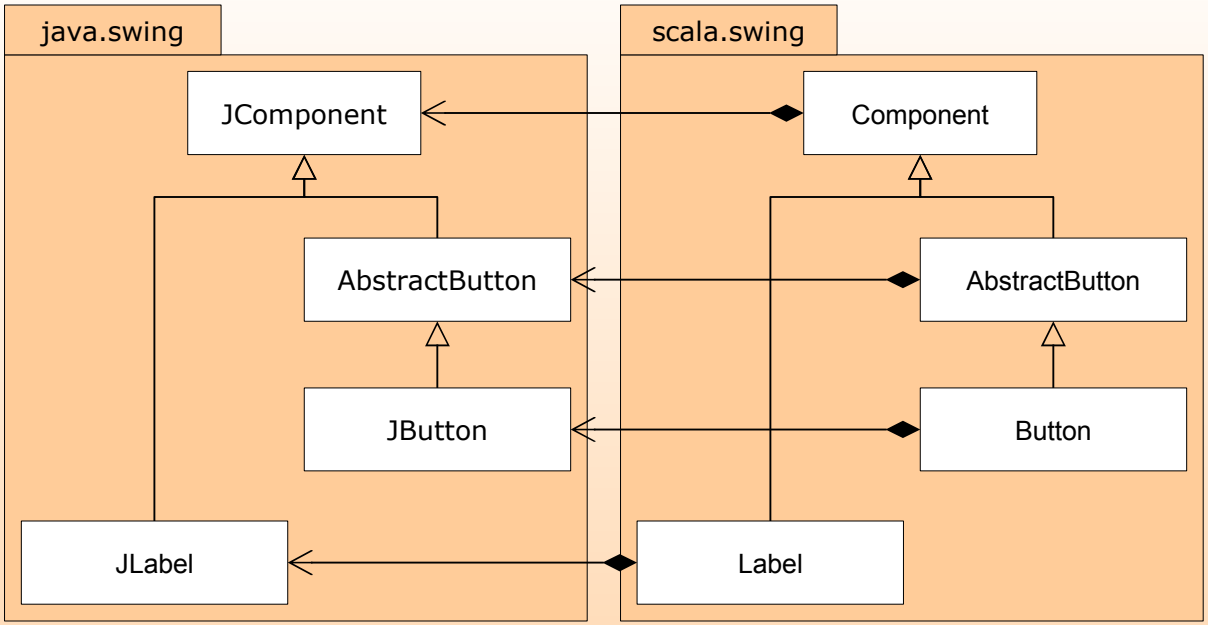

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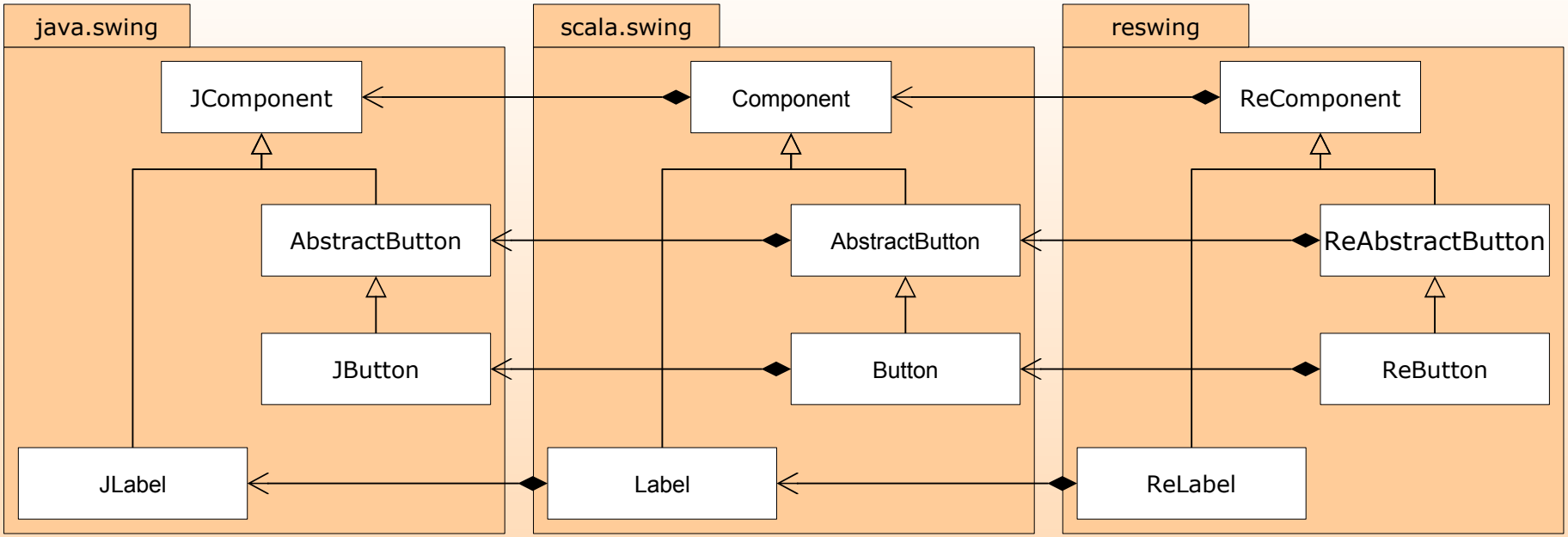

Swing vs ReSwing

Swing

```
val label = new Label
label.text = "foobar"
label.preferredSize = new Dimension(400, 40)
```

Swing vs ReSwing

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Swing

```
val label = new Label
label.text = "foobar"
label.preferredSize = new Dimension(400, 40)
```

ReSwing

```
val label = new ReLabel(
    text = "foobar"
    preferredSize = new Dimension(400, 40)
)
```

ReSwing Reactive Values

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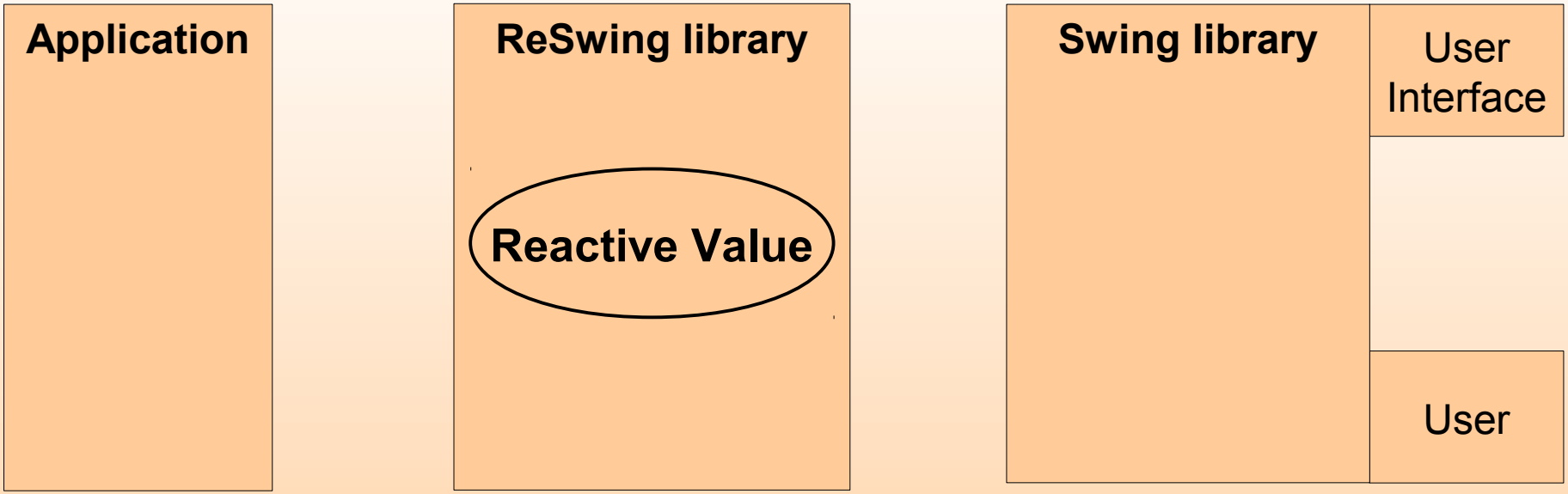

ReSwing Reactive Values

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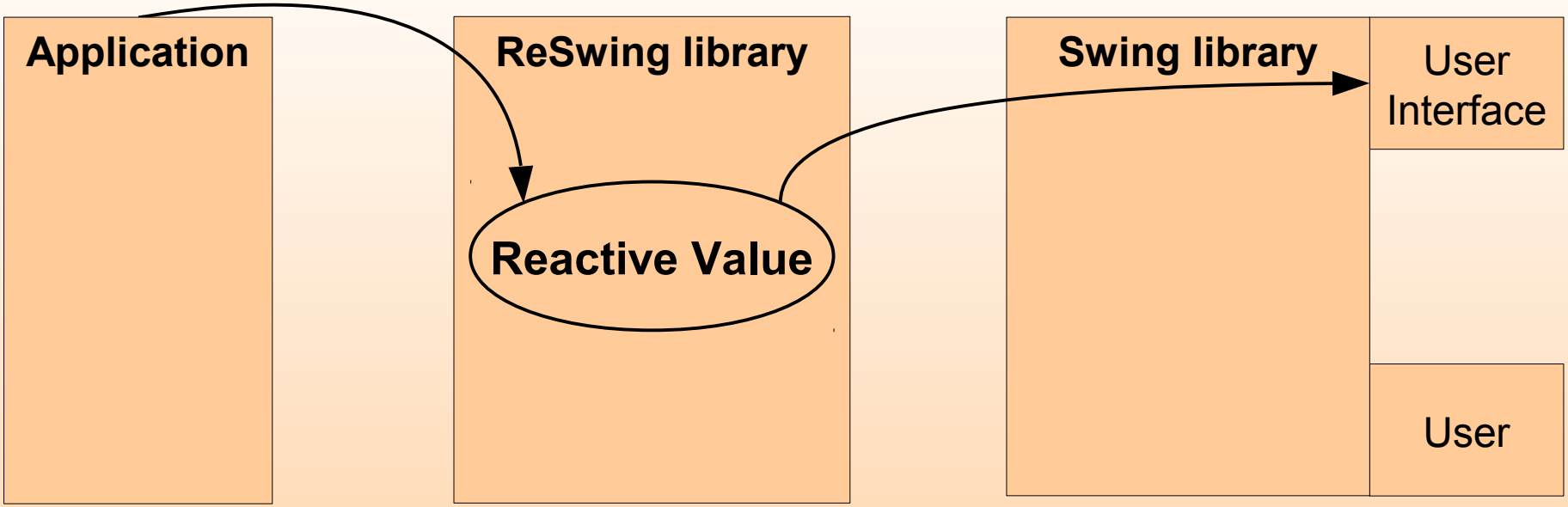

ReSwing Reactive Values

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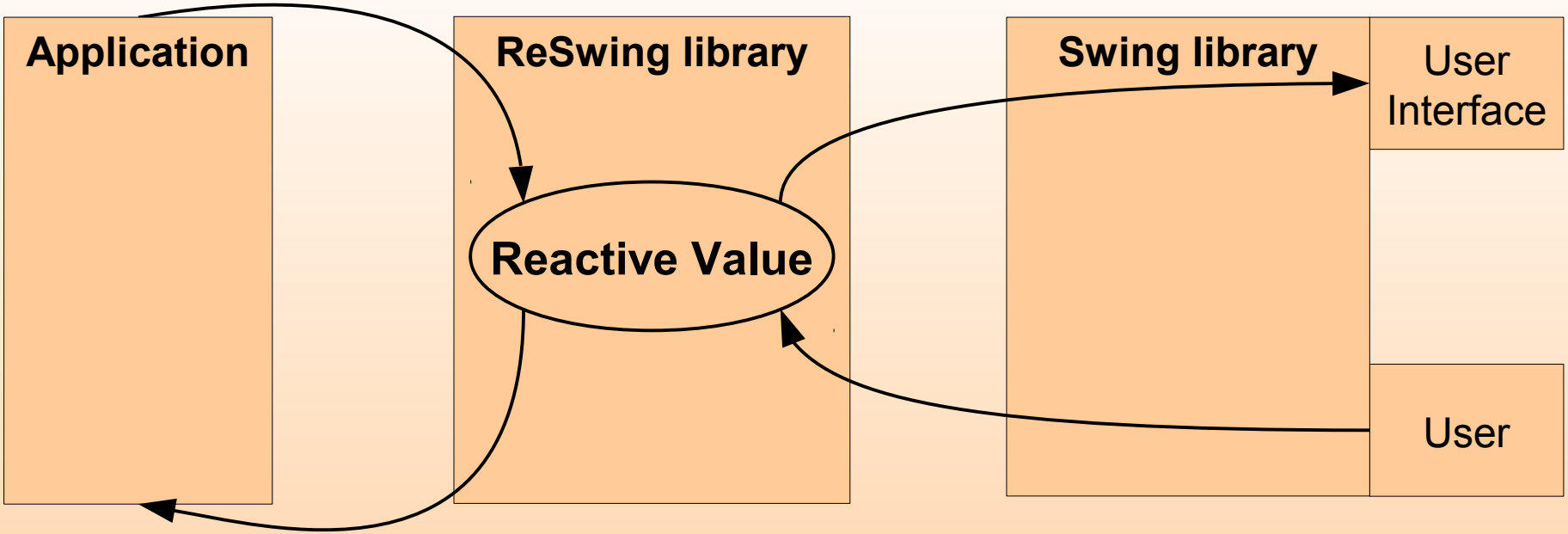

Setting Signals

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```
val value: String
val label = new ReTextArea(
    text = value
)


val event: Event[String]
val label = new ReTextArea(
    text = event
)


val signal: Signal[String]
val label = new ReTextArea(
    text = signal
)
```

Setting Signals

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- initializes the reactive value
- user can change the value

Setting Signals

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val value: String
val label = new ReTextArea(
    text = value
)
```

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- user can change the value

```
val event: Event[String]
val label = new ReTextArea(
    text = event
)
```

- updates the reactive value on each event occurrence
- user can change the value

```
val signal: Signal[String]
val label = new ReTextArea(
    text = signal
)
```

Setting Signals

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```
val value: String
val label = new ReTextArea(
    text = value
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```

- initializes the reactive value
- user can change the value

```
val event: Event[String]
val label = new ReTextArea(
    text = event
)
```

- updates the reactive value on each event occurrence
- user can change the value

```
val signal: Signal[String]
val label = new ReTextArea(
    text = signal
)
```

- the signal defines the reactive value
- user *cannot* change the value

Defining Signals

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```
class ReLabel(val text: ReSwingValue[String] = ())
    extends ReComponent {

}
```

Defining Signals

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```
class ReLabel(val text: ReSwingValue[String] = ())
    extends ReComponent {
  text using (peer.text _, peer.text_= _, "text")
}
```

Defining Signals

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```
class ReLabel(val text: ReSwingValue[String] = ())
    extends ReComponent {
  text using (peer.text _, peer.text_= _, "text")
}


class ReTextComponent(val text: ReSwingValue[String] = ())
    extends ReComponent {
   text using (peer.text _, peer.text_= _, classOf[ValueChanged])

}
```

Defining Signals

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```
class ReLabel(val text: ReSwingValue[String] = ())
    extends ReComponent {
  text using (peer.text _, peer.text_= _, "text")
}


class ReTextComponent(val text: ReSwingValue[String] = ())
    extends ReComponent {
  (text using (peer.text _, peer.text_= _, classOf[ValueChanged])
        force ("editable", peer.editable_= _, false))
}
```

Defining Signals

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```
class ReLabel(val text: ReSwingValue[String] = ())
    extends ReComponent {
  text using (peer.text _, peer.text_= _, "text")
}


class ReTextComponent(val text: ReSwingValue[String] = ())
    extends ReComponent {
  (text using (peer.text _, peer.text_= _, classOf[ValueChanged])
        force ("editable", peer.editable_= _, false))
}


abstract class ReComponent extends ReUIElement {
  val hasFocus = ReSwingValue using (peer.hasFocus _,
                                     classOf[FocusGained],
                                     classOf[FocusLost])
}
```

Use Case

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```
object ApplicationSwingTextArea extends SimpleSwingApplication {
  val textArea = new ReTextArea("Lorem ipsum dolor sit amet")

  val selectionLabel = new ReLabel(
    text = Signal { "Selection Length: " +
                    (if (textArea.selected() != null)
                         textArea.selected().length else 0) })

  val countLabel = new ReLabel(
    text = Signal { "Character Count: " + textArea.text().length })

  def top = new ReMainFrame(
    preferredSize = new Dimension(400, 400),
    contents = new BorderPanel {
      layout(new ScrollPane(textArea)) = Position.Center
      layout(new GridPanel(1, 0) {
        contents += selectionLabel
        contents += countLabel
      }) = Position.South
    }
  )
}
```