

# Building Your Own Components

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# Overview



## Custom Tag Libraries

- Creating custom tags

## Composite Components

- Creating custom components

## The UIComponent Hierarchy

## Advanced Custom Components

## JSF Component Libraries



# Creating Custom Tags

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# Steps to Create a Custom Tag Library

- **Create tag files**
  - Facelets template files with `ui:composition`
- **Create a Facelets tag library descriptor**
  - Describes the tags of the tag library
- **Register the tag library**
  - Add a context parameter to `web.xml`



# Creating Composite Components

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# Creating Composite Components

- **Components are self-contained**
  - Interface and implementation are separated
  - Implementation details are hidden
- **Components are more powerful than tags**
  - A component contains its own data and logic
  - Converters and validators
  - Events



# The UIComponent Hierarchy

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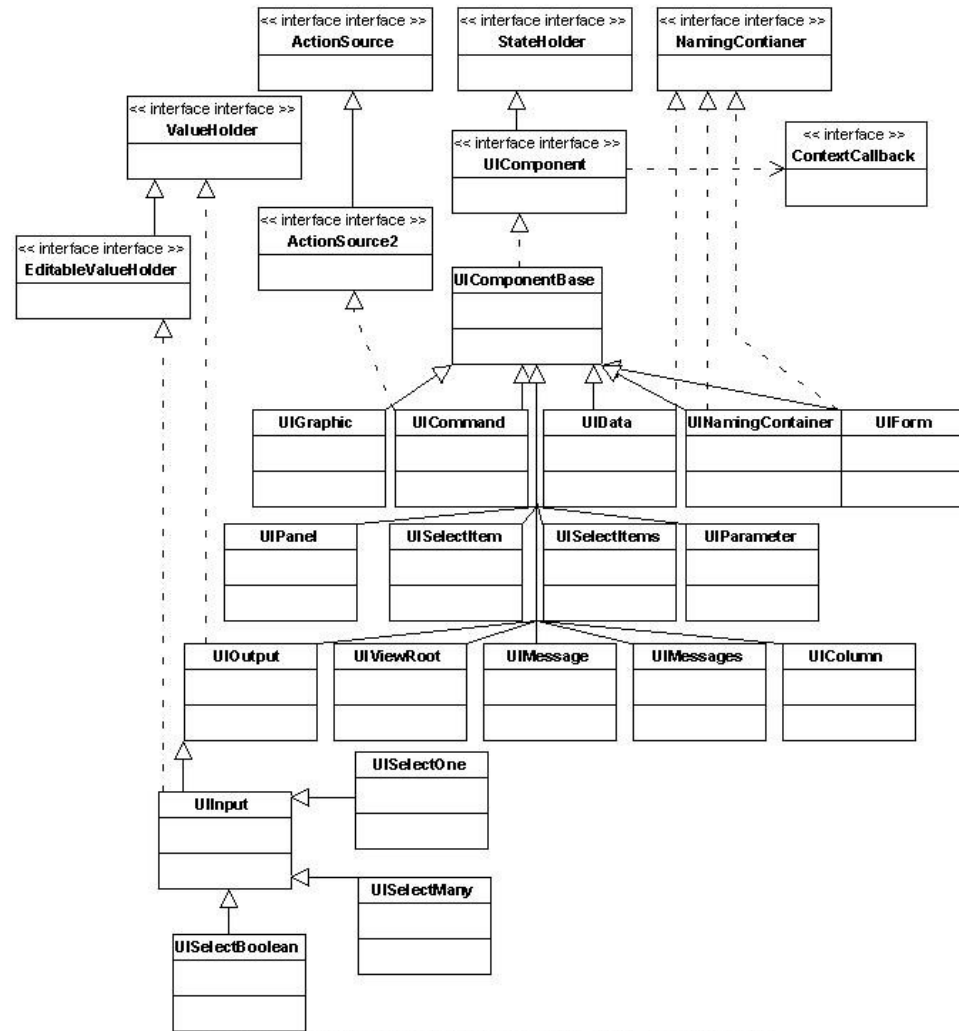
# The UIComponent Hierarchy

- Package `javax.faces.component`
  - Standard component classes
  - Behavioral interfaces





# The UIComponent Hierarchy



# The UIComponent Hierarchy

- Abstract base class: **UIComponent**
- Common functionality: **UIComponentBase**
- Component tree root: **UIViewRoot**
  - Stored in **FacesContext**



# The UIComponent Hierarchy

- Class **UIForm**
  - Represents a form
- Class **UIGraphic**
  - Displays an image
- Class **UIMessages**
  - Shows validation error messages
- Class **UIPanel**
  - Manages the layout of its child components



# The UIComponent Hierarchy

- Class **UIOutput**
  - For components that hold a value to be displayed
- Class **UIInput**
  - For components with an editable value



# Behavioral Interfaces

- Interface **ActionSource2**
  - The component can fire action events
- Interface **ValueHolder**
  - The component holds a local value
  - Allows registering a converter
- Interface **EditableValueHolder**
  - That the component hold an editable value
  - Allows registering a validator
- Interface **StateHolder**
  - The component has state to be saved between requests

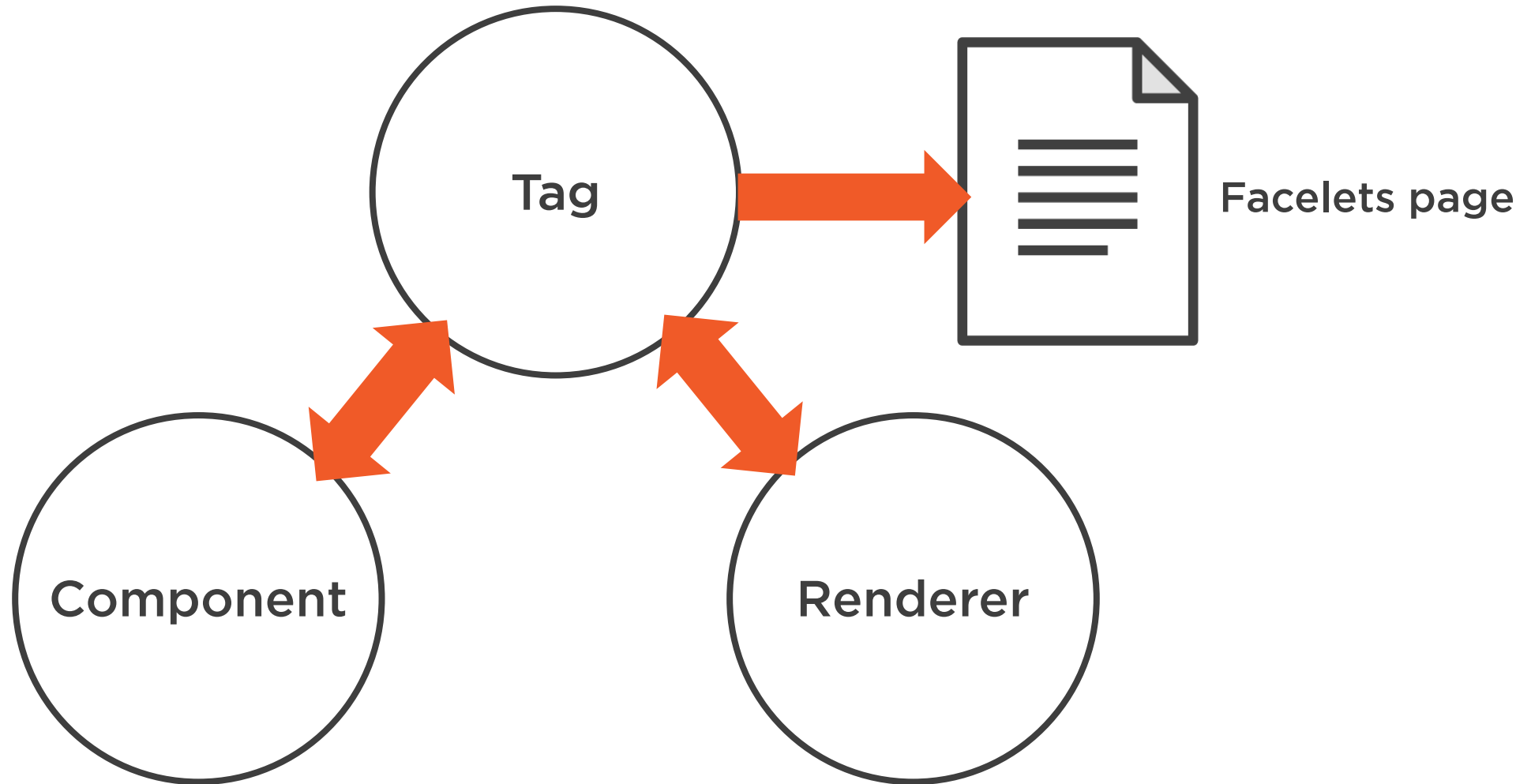


# Advanced Custom Components

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# Advanced Custom Components



# Advanced Custom Components

- **A tag combines a component with a renderer**
  - Multiple combinations are possible





# JSF Component Libraries

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# JSF Component Libraries

- **PrimeFaces**
- **ICEfaces**
- **OmniFaces**
- **OpenFaces**
- **Apache Tomahawk, Trinidad, Tobago**



# Summary



## Custom Tag Libraries

- Extension to the include mechanism

## Composite Components

- Custom components with their own state and behavior

## Custom Components and Renderers

- Advanced customization

## JSF Component Libraries



# Coming Up



## Using AJAX

- Making your web applications more dynamic

