Echo2 Web Development Framework

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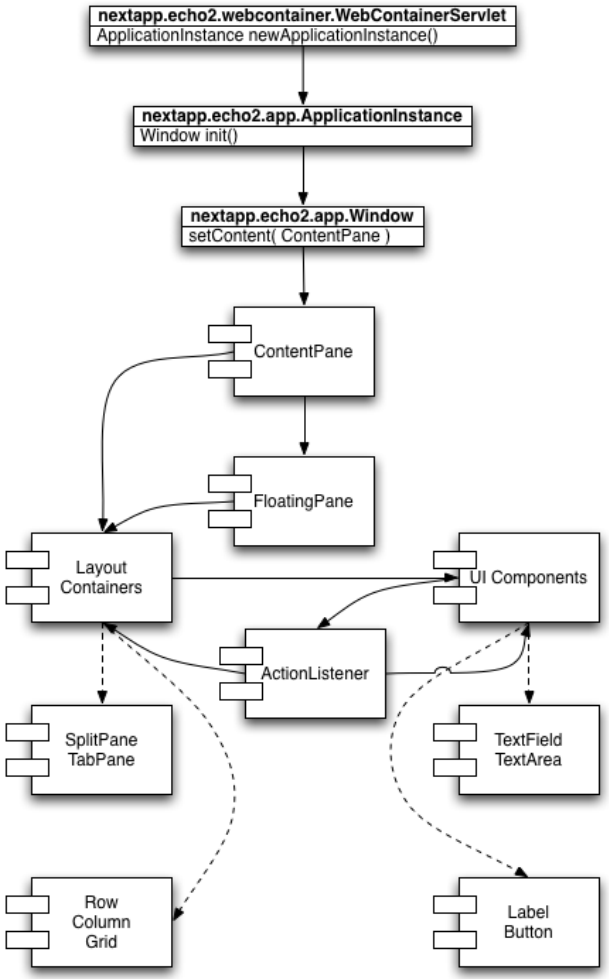
```
Button button = new Button( "Save" );
button.setActionCommand( "save" );
button.addActionListener(
  new ActionListener()
  {
    public void actionPerformed( ActionEvent e )
    { ... }
  });
```

Anatomy of Application



Application framework

Parts of an application.

Servlet A servlet instance that is used to initialise the ApplicationInstance.

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ApplicationInstance The application instance that is used to display a Window.

ContentPane The ContentPane that is used to display the UI Components.

Components The Component objects that are used to build the UI.

ActionListeners The event listeners that are triggered by user interaction with the UI Components displayed in the Window.

Layout Components

WindowPane A floating window component.

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Column A container component used to hold child components stacked vertically.

Row A container component used to hold child components stacked horizontally.

Grid A container component used to hold child components in tabular format.

UI Components

Button Used to trigger action events similar to AWT/Swing.

Label Used to display text.

TextField/TextArea Used to display single or multi-line editable text. PasswordField is available to capture masked input.

SelectField/CheckBox/ListBox Used to display multiple selectable values to user. Backed by their own data model.

Table Used to display tabular data. Backed by data model.

Third Party Components

Some components provided by EchoPointNG:

MenuBar/Menu/MenuItem Used to build menu systems.

DateChooser/DateField Used to display calendar to user.

DirectHtml Used to display raw HTML.

RichTextArea Text area with HTML editor capability.

Tree Used to display objects in a tree.

AutolookupTextField A TextField that supports JavaScript and AJAX lookups to match text input into field.

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Look & Feel

Styles are used to control look and feel for components:

Style Attributes

Color	Foreground and background color properties for components.
Font	Font types and sizes to be applied to components.
Border	Borders to be applied to components.
Size & Postition	Size and position of components.
Image	Fill images for component background.

Look & Feel

Echo2 offers three techniques for applying styles to components.

Style Techniques

Component Style properties can be directly specified for each component.

MutableStyle Custom objects used to capture style properties and applied directly to target component.

StyleSheet A class used to maintain a mapping of style names to style classes. Used to facilitate easy sharing of style objects. A custom StyleSheet loader that initialises itself from an XML file is also provided.

Component styling

```
Button button = new Button( "Save" );
button.setFont( new Font(
  Font.HELVETICA, Font.PLAIN,
  new Extent( 12 ) );
button.setForeground( Color.BLACK );
button.setTextAlignment( Alignment.ALIGN_CENTER );
```

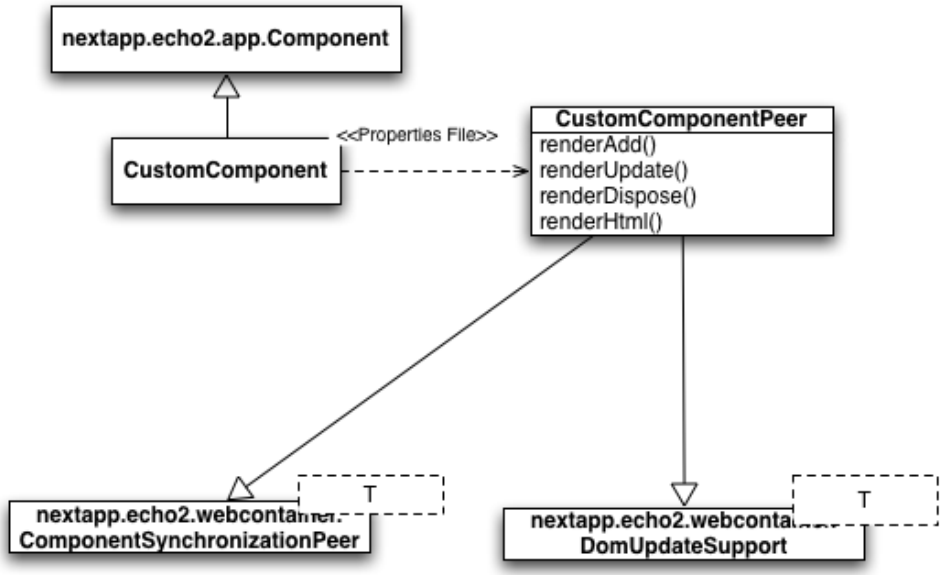
Style Class

```
Button button = new Button( "Save" );
button.setStyle( new ButtonStyle() );

public class ButtonStyle extends MutableStyle
{
   ...
   setProperty( Component.PROPERTY_FONT,
     new Font( Font.HELVETICA, Font.PLAIN,
     new Extent( 12 ) );
   setProperty(
     Component.PROPERTY_FOREGROUND, Color.BLACK );
   setProperty(
     Component.PROPERTY_ALIGNMENT, Alignment.CENTER
}
```

StyleSheet

```
Application.getActive().setStyleSheet(
  new StyleSheet() );
Button button = new Button( "Save" );
button.setStyleName( "General.Button" );

public class StyleSheet extends MutableStyleSheet
{
  ...
  ButtonStyle bs = new ButtonStyle();
  addStyle( Button.class, null, bs );
  addStyle( Button.class, "General.Button", bs );
}
```

Custom Components



CustomComponent Sub-class of Echo2 Component class.

CustomComponentPeer Rendering peer implementation.

CustomComponent.js Client side message processor to notify server of client interactions with components.

Sample Applications

SPTWebMail java.net project to provide webmail access.

Password Simple application to manage UNIX system account passwords.

SPTCMS Work in progress to create a simple Wiki/CMS.

PRS Performance Review System to be released on java.net

RAD A framework for Rapid Application Development through code generators, automatic view initialisation and automatic bi-direction binding.

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API familiarity The API should be familiar to most Java developers.

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IDE plugin EchoStudio Eclipse plugin available for easy interface development.

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No deep linking You cannot bookmark or go directly to a screen within an application.

Echo2 vs GWT

Comparison with another Java based web development framework.

Feature	Echo2	GWT
Java API based	Yes	Yes
Java API	Full	Limited
Easy to modify JavaScript	No	Yes
AJAX abstraction	Yes	No
Server runtime	Heavy	Light
Client runtime	Light	Heavy
Development	Light	Heavy
Company	Small	Huge