SeaBreeze

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Management Summary

With SeaBreeze, you get a graphical editor suite that enables you to setup and maintain a complete Web2.0 Seaside application – from initial setup of the components with the wizard functionality through addition of HTML elements to these pages and positioning the new elements on a page to finally doing the complete CSS layout inside the web browser.

This enables on the one hand the Seaside newcomer to create new applications on the fly, but it also helps the experienced Smalltalk engineer who does not have to know all HTML and CSS parameters by heart.

As the result is a standard Seaside application it is possible to go on developing in the same way one uses the GUI editor inside Visualworks to create the UI for a desktop application.

Features

SeaBreeze consists of a set of editors fully integrated into the existing Seaside toolset so that they can be accessed the same way as the standard configuration editors.

Graphical Web Composer

The SeaBreeze painter is a graphical composer for Seaside web applications. Compose your application by clicking on a palette with web elements, which immediately appears on a preview pane for your application.

The extensible palette offers a complete set of standard and extended HTML elements, which easily integrate into your web page. Move your desired element, e.g. an input field, a text or a button over the page using drag'n drop and place it where you want it to be. Specify the element's properties and fine-tune the position. The property editor let you not only edit standard properties like CLASS or ID but it is also the place for linking the web elements with their model. Define the model aspect for your input fields or buttons even define dynamical text with aspects.
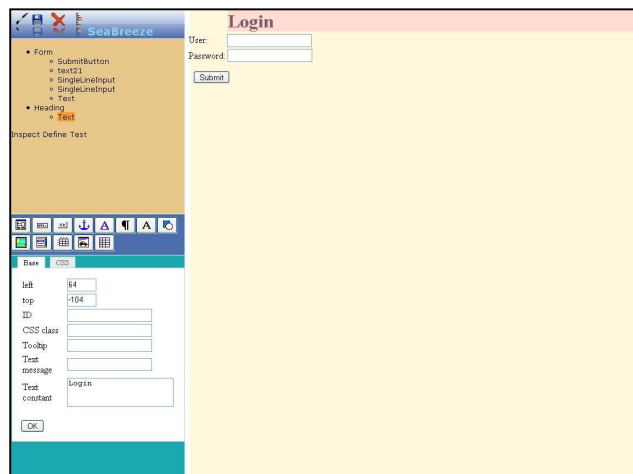
The navigation tree keeps you always informed about the overall page structure, while composing your web application. It shows all elements in your Seaside component in a HTML document related manner and enables you selecting even invisible elements. This is the place for structural operations on your web page.

Finish your work and save it as SeaBreeze XML (Sea*X*pec) specification from the composer into the application class.

Cascading Style Sheet Editor

As it is quite cumbersome to know all CSS options by heart, there exists an easier option by using the integrated CSS editor: This editor makes it possible to edit the style of the current components (once again live) on
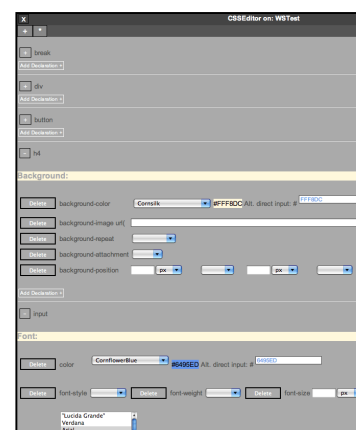
the web page – every addition or change is instantly reflected on the page shown in the background.

When starting without a style for the current page the CSS editor analyzes the page and adds some basic rule sets. This style sheet can then be edited with the editor giving you the possible options, for instance letting you select the known web colors from a list or typing it as HEX string with instant feedback.

The CSS editor also supplies a choice of possible elements for adding new declarations to a rule set and even helps when the current style sheet does not meet the W3C specifications.

Application Wizard

To enable the developer to easily start with Seaside without much typing there exists a wizard functionality that guides the developer through the necessary steps to build a new web application, ensuring that the result will be functional.

Architecture

SeaBreeze architecture is characterized by the idea of what is necessary for immediately implementing advanced web applications in functionality and design without spending much time in learning HTML, Ajax and CSS.

SeaBreeze applications are basing on prepackaged building blocks, which represent elementary HTML structures like text, buttons, input fields, etc. Those elements are first class objects, which know how to render on a HTML context by using the Seaside rendering API. This layer on top off Seaside rendering API allows the usage of tools for graphically composing and designing web applications.

Elements are view like things in a Model-View-Controller architecture, which is the basis for SeaBreeze web applications.

In pure Seaside Smalltalk code written in the <renderContentOn:> method specifies layout and design of web applications. SeaBreeze applications using a XML specification format (sea*X*pec) to describe the structure and the properties of elements, which are resulting from tool-supported composing process.

Seaside Abstraction Layer

The element architecture performs the step from Seaside streaming architecture towards an object-oriented MVC architecture. Building SeaBreeze web applications is a structured process of assembling elementary objects into a desired composition. This architecture separates the design time decision of application composition from the page rendering process.

Elements

Elements are lightweight components capable of rendering themselves on a Seaside rendering context. They are using the composite pattern for representing HTML structures like forms and links. Elements offering a property interface, which enables an easy tool support. Tools simply requesting the elements property specification for accessing the element interface.

Predefines basic HTML elements exists as well as extended elements for dynamical table support or layout elements emulating VisualWorks relative layouts. The layout element allows specifying a posi-

tion in percent or pixel. A special subcomponent element is the key for reusing existing Seaside and SeaBreeze applications.

MVC Architecture

Model-View-Controller architectures have the advantage of distributing responsibilities. SeaBreeze delegates the rendering from application model into view elements, which are showing single aspects of the model. The aspect for an input field defines how to request and set the value in the model. This is a natural example for an HTML element using an aspect. However, even a text element may request its value the text itself from the application model. Adding an aspect to the text property makes the deal. Each element gets its own dynamic by adding aspects to the elements properties.

XML Specification Format

SeaBreeze web applications use elements for rendering their web page. The developer composes a web application at design time with tool-support and finally stores a representation as XML specification (SeaXpec). Storage location may be the class side of the application model or even an external storage medium.

The application model rebuilds all elements from the persistent specification and keeps the elements for the lifetime of the application model.

Advantages

By using Seaside Breeze it is possible to do all positioning, adding of HTML elements and layouting with CSS graphically in the web browser with live feedback.

That makes the whole development process much more Smalltalk-like because you do not have to write the code in your Visualworks browser, save it, open your web browser and check whether the result is what you wanted to accomplish.

Especially for beginners it is much easier to create a working web application (that is not a counter), but it is also easier to integrate a web designer in your development team because apart from changing the created CSS style sheet he can also do small fixes on a web page without having to fear to break the whole application.

Future Enhancements

Import of Existing Seaside Pages

At the moment the main HTML editor functionality only works with elements that were created with this editor – comparable to the UIPainter, which also only works on the existing WindowSpecs. An enhancement will be that you can import an existing Seaside page which is thereby converted into the new form that enables positioning and editing with the HTML editor, thereby making it possible at every stage of the development process to switch to the HTML editor and easily doing the changes in a graphical environment with direct for every change that is done.

Control Flow Editor / Enhanced Wizard Support

The wizard functionality will be enhanced so that it is possible to setup the complete control flow of an application between different components, thereby creating complex web applications and really exploring the powers of Seaside.