Some Common Rules for all Controls

This chapter covers the following topics:

- Name and Text ID

- Table, Row, Column, Control

- Explicit Alignment

- Binding to Adapter Parameters

- Directly Influencing the Control Style

- Dynamically Controlling the Visibility and the Display Status of Controls

- Focus Management

- Flushing of Inputs

- Tab Sequence

- Tooltips

Name and Text ID

Every time a control needs a static text definition (the name of a button or the name of a label), there are always two possibilities to define this text:

- Specify a name directly.

- Specify a text ID. This is a literal replaced with a string that is determined inside the multi language management at runtime.

Table, Row, Column, Control

Most controls that allow dynamic sizing offer the following properties:

- `colspan` - number of columns occupied by the control.

- `rowspan` - number of rows occupied by the control.

- `width` - width.

- `height` - height.

These properties influence the way how controls are placed into container rows.

Explicit Alignment

Controls are put into table columns. If the column is wider or higher than the control itself, then you can explicitly control the vertical and horizontal alignment of the control inside the columns.

Most controls offer two properties:

- **valign**
  Specifies the vertical alignment. Valid values are "top", "middle", "bottom". "middle" is the default value.

- **align**
  Specifies the horizontal alignment. Valid values are "left", "center", "right". The default value depends on the control. For example, labels are aligned "left" by default, the default for radio buttons is "center".

Pay attention: `valign` and `align` only affect the position of the control inside the column in which it is positioned if the column is larger than the control. If the column is exactly as wide and high as the control itself, which is the typical case, then they do not have any visual effects - and also need not be defined.

`align`/`valign` do not affect the control's internal alignment.

Binding to Adapter Parameters

Most controls provide properties to specify the binding to the adapter processing. There is a naming convention, which is:

- The names of the properties which specify the binding to an adapter parameter end with "prop".

- The names of the properties which specify the binding to an event end with "method".

The type of the adapter parameter which is referenced by a control depends on the control itself:

- Most controls directly bind to scalar adapter parameters.

- More complex controls bind to an array of group structures.

The type of adapter parameter is described with each control.

Directly Influencing the Control Style

All controls that incorporate textual information - such as labels, buttons or fields - offer the possibility to influence directly the style that is used for displaying the information.

The normal style is derived from the definition inside a cascading style definition file (file *layout.css* inside the *html/general* directory of the server). Overwrite or enhance this style information for your controls by passing the style information inside the corresponding style properties.

The properties specifying the style information end with the suffix "style", e.g. there is a property `labelstyle` for the label tag. The value of the property can be any kind of a valid HTML style specification. If you want to change the display style of a label to be large and blue, define the label in the following way:

```
<label name="Test" width="150" labelstyle="font-size: 24pt; color: #0000FF">
</label>
```

Dynamically Controlling the Visibility and the Display Status of Controls

It is possible to influence the visibility of all input controls (FIELD, BUTTON, etc.) by adapter parameters.

For some of these controls there is a property visibleprop, specifying an adapter parameter that returns "true" or "false". By this, you can control whether you want to display the control within the client or not.

Input controls support a property statusprop and a property displayprop. Using the corresponding adapter parameters, you can dynamically control the display status of the input control. The adapter parameter for the statusprop can contain the following values:

INVISIBLE
ERROR
ERROR_NO_FOCUS
FOCUS

The adapter parameter for the displayprop specifies whether the control is display-only (TRUE) or whether it can be edited (FALSE). The adapter parameter can contain the values "TRUE" and "FALSE".

The combination of these two parameter values dynamically defines how the controls are rendered at runtime. The following table defines the rendering of the control for the different combinations:

displayprop	statusprop	Control Status
FALSE (default)		EDIT
FALSE (default)	INVISIBLE	INVISIBLE
FALSE (default)	ERROR	ERROR
FALSE (default)	ERROR_NO_FOCUS	ERROR_NO_FOCUS
FALSE (default)	FOCUS	FOCUS
TRUE		DISPLAY
TRUE	INVISIBLE	INVISIBLE
TRUE	ERROR	ERROR_DISPLAY
TRUE	ERROR_NO_FOCUS	ERROR_DISPLAY
TRUE	FOCUS	DISPLAY

For all other controls - and for more complex manipulations of what is visible and not - use the possibility to be able to control the visibility of rows (ITR, TR) or containers (ROWAREA, ROWTABLE0): these controls provide for a visibility parameter and consequently can be switched on and off.

There is an extended management of what the control status "INVISIBLE" means. Most input controls (FIELD, CHECKBOX, etc.) supporting a `statusprop` or a `visibleprop` also support a property `invisiblemode`. The allowed values of `invisiblemode` are:

- **invisible**
  The corresponding control is completely removed. The horizontal space it occupied before is taken out.

- **cleared**
  The corrresponding control is not visible but still occupies its horizontal space.

- **disabled**
  The corresponding control is displayed with a disabled state. This state is only allowed with a certain number of controls (e.g. button and icon).

Focus Management

Sometimes you want to control the keyboard focus inside a page. Here are the internal rules how a page finds out where to put the focus on.

The default reaction is - if a page is displayed for the first time - to put the focus on the first input control (FIELD, CHECKBOX, RADIOBUTTON, etc.) that is available inside a page. After that, you can navigate through the input controls - and the focus is kept stable when interacting with the server.

With `statusprop` - as mentioned in the previous section - you can interrupt this default reaction; there are two possibilities:

- If an input control is set to status "ERROR", it requests the focus automatically. The purpose is to guide the user automatically to those fields that are not correctly entered.

- If an input control is set to status "FOCUS", it is editable - just as normal - and also requests the focus.

If several input controls are requesting the focus at the same time, the focus is put on the first corresponding input control.

Flushing of Inputs

Most input controls (FIELD, CHECKBOX, RADIOBUTTON, COMBOFIX, etc.) support a property named `flush`. This property controls whether data input from a user causes an immediate synchronisation with the server or whehter data input from a user is stored internally within the client and is synchronized with the next flushing event (e.g. when choosing a button).

There are three different values that can be specified with the `flush` property:

- **"" (blank)**
  The data is not synchroized after leaving the control. This is the default.

- **server**
  The data is synchronized with the server immediately when the data has been entered, i.e. when the user has left the corresponding input field.

- **screen**
    The data is synchronized within the controls of the screen. This means - if you have two fields displaying the same property - you can synchronize the fields immediately, without interacting with the server.
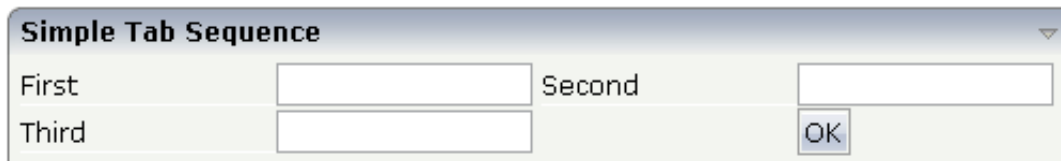
Tip:
On the one hand, it is useful to flush information in a very fine granular way; you can react on wrong entered data immediately - on the other hand, you have to remember that each flush causes network traffic. The screen's data is sent to the server side processing and the screen waits for the response of the server. During this time, the page is blocked for input and the user sees an hour glass popping up in the left top corner of the screen.

Tab Sequence

By default, the tab sequence of the controls of a page is defined by the order of the controls inside the page's XML layout definition. Using the property `tabindex`, this order can be overridden and the order of the tab index can be explicitly defined.

The following example shows a page with three fields and one button with an explicitly defined tab sequence:

The XML layout definition is:

```
<rowarea name="Simple Tab Sequence">
    <itr takefullwidth="true">
        <coltable0 width="50%">
            <itr>
                <label name="First" width="120">
                </label>
                <field valueprop="first" width="120" tabindex="1">
                </field>
            </itr>
            <itr>
                <label name="Third" width="120">
                </label>
                <field valueprop="third" width="120" tabindex="3">
                </field>
            </itr>
        </coltable0>
        <coltable0 width="50%">
            <itr>
                <label name="Second" width="120">
                </label>
                <field valueprop="second" width="120" tabindex="2">
                </field>
            </itr>
            <itr>
                <hdist width="120">
                </hdist>
                <button name="OK" method="onOK" tabindex="4">
                </button>
```

```
            </itr>
        </coltable0>
    </itr>
</rowarea>
```

According to the sequence of controls inside the layout definition, the default tab sequence would be: field **First**, field **Third**, field **Second** and button **OK**.

Due to explicitly defining the `tabindex` property for the fields and the button, the tab sequence is now correct: field **First**, field **Second**, field **Third** and button **OK**.

Pay attention:

- Once having started to explicitly set the tab index in a page, you must consequently continue with all controls of the page. Adding new controls without tab index, is internally interpreted as if these controls were defined with tab index "0".

- Equal tab indices in controls are allowed. In this case, the sequence of the controls inside the layout definition defines the tab sequence among the controls with an equal index.

- Moving controls from one location to the other within a page typically means that you have to adapt the tab sequence accordingly.

The tab index usually is a positive integer value. You may define tab index "-1" for excluding certain controls from the tab sequence at all. In this case, the corresponding controls may only be reached by mouse clicking.

Conclusion:

- In typical pages, you do not have to take care of the tab sequence at all because the default (tab sequence by order of controls in page layout) is adequate to the user's experience.

- Only use the explicit definition of the tab sequence if really it is required - the effort for maintaing each tab index with each control should not be underestimated.

Tooltips

Tooltips can be applied to many controls. If the user hovers with the mouse cursor over a control for some seconds, a small yellow box appears showing some more detailed explanation.

The corresponding controls offer two properties:

- **title**
  Here you can specify a hard-coded text that is used as the tooltip.

- **titletextid**
  Here you specify a text ID that is passed to the multi language management..