Validating SML Dialogs Created in XML

You can create XML specifications for custom SML dialog windows directly in an SML script with the SML editor or create separate dialog specification files with any text editor. But you may find it easier to create your specifications using a specialized XML editor. A number of free, shareware, and commercial XML editors are available for download via the World Wide Web. Nearly all XML editors can check that the XML is *well-formed*, conforming to basic XML syntax rules. Many editors also provide a graphical *Tree View* of the document structure that simplifies editing. Some editors can compare the XML to a document model that specifies the available tags, their allowed attributes, and the relationships permitted between elements (for example, the only allowed child element of a <combobox> is an <item>). An XML file that conforms to its document model is said to be *valid*, and the checking procedure is called *validation*.

```
<!-- SMLFORMS DTD Version 1.0 -->
<!-- For use with SML Dialog Specifications in XML -->
<!-- MicroImages, Inc. -->

<!-- ====================================== -->
<!--              MAIN ELEMENTS             -->
<!-- ====================================== -->

<!ELEMENT root (dialog | script)* >
<!ELEMENT script (#PCDATA)>
<!ELEMENT dialog (book | pane | groupbox | label | pushbutton |
  togglebutton | colorbutton | edittext | editnumber | radiogroup |
  combobox | menubutton | listbox )*>
```

Excerpt showing the beginning lines of the SMLFORMS DTD file, defining the main elements <root>, <script>, and <dialog>.

Xerlin is a free, open-source XML editor that is available for download at www.xerlin.com. It is written in Java and will run on any computer platform that has the Java 2 runtime environment installed (Java SDK 1.2.2 or higher, available for free download from java.sun.com/j2se/). Xerlin allows you to easily create a valid dialog specification using the SML dialog specification DTD. It provides a tree view that allows you to select dialog elements with the mouse and edit or add elements to the selected one using the right mouse button.

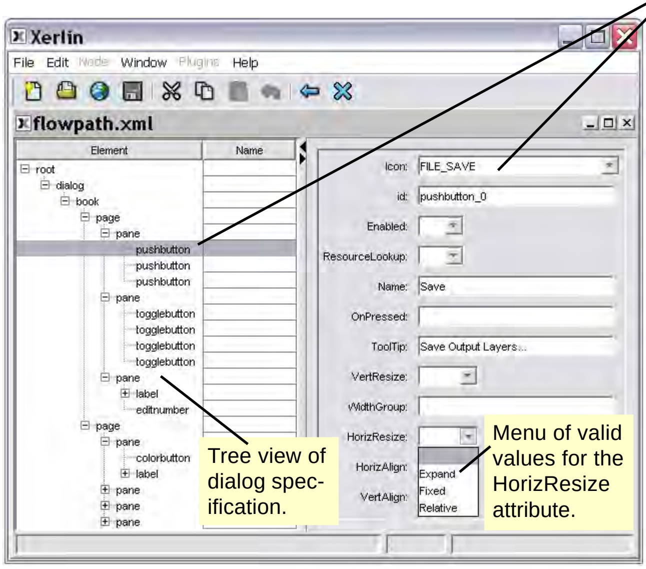
The most widely-supported form of XML document model is a Document Type Definition (DTD). MicroImages has created a DTD for SML dialog specifications (smlforms.dtd) that can be found in the sample data directory SMLDLG that accompanies the Tutorial booklet *Building Dialogs in SML* (available at www.microimages.com/getstart/SMLdlg.htm). An excerpt of this file is shown above. Most validating XML editors read the DTD and provide menus of valid elements that can be inserted into the current element, menus of attributes available to be added for each type of element, and menus of attribute values for those attributes that have a fixed set of valid values.

```
<?xml version="1.0"?>
<!DOCTYPE root SYSTEM "smlforms.dtd">
<root>
  <dialog>
  </dialog>
</root>
```

Dialog Specification Template File (dlgtempl.xml) containing the Document Type Declaration and <root> and <dialog> elements.

MicroImages has also provided a Dialog Specification Template File (dlgtempl.xml, shown to the right) that you can open in a validating XML editor to create your dialog specifications. The template includes the <root> and <dialog> elements preceded by a Document Type Declaration that defines the name of the root element (<root>) and the name of the DTD and its location (in the same directory as the XML file being edited).

Xerlin XML editor with a dialog specification loaded. The left panel shows a tree view, and available attributes are listed for the selected element on the right panel. Attribute values can be filled in as needed or selected from dropdown combobox-style menus.



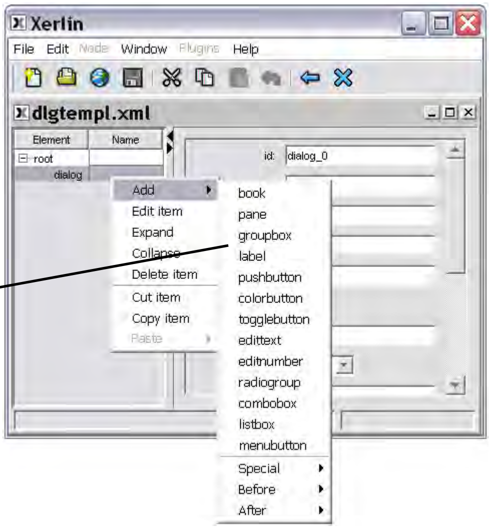
root
  dialog
    book
      page
        pane
          pushbutton
          pushbutton
          pushbutton
        pane
          togglebutton
          togglebutton
          togglebutton
          togglebutton
        pane
          label
          editnumber
      page
        pane
          colorbutton
          label
        pane
        pane
        pane

Icon: FILE_SAVE
id: pushbutton_0
Enabled:
ResourceLookup:
Name: Save
OnPressed:
ToolTip: Save Output Layers...
VertResize:
WidthGroup:
HorizResize:
HorizAlign:
VertAlign:

Tree view of dialog specification.

Menu of valid values for the HorizResize attribute.

Xerlin XML editor with the dialog template file loaded. Dialog elements can be added or edited using right mouse button menus. The Add option provides a submenu showing all dialog elements that are valid as children of the selected element.



id: dialog_0