

## Paper 60-28

## Introduction to the SAS® Custom Tag Library

Robert Girardin, SAS Institute Inc., Cary, NC

**ABSTRACT**

The SAS Custom Tag Library, available in Version 3 of AppDev Studio™, is a collection of custom tags that provide a wide range of functionality, such as the ability to

- view and edit relational data via tables views or custom forms.
- explore multidimensional data stored in OLAP server cubes.
- perform common data management tasks such as sorting, filtering, adding computed items.
- attach JDBC™ data sources to standard HTML form controls via model/view communication.
- develop web applications for both web and wireless.

This paper will provide an introduction to building and deploying JavaServer Pages™ (JSP) with useful examples that illustrate the SAS custom tags mentioned above.

**INTRODUCTION**

JavaServer Pages technology offers a simple and fast way to build dynamically generated web applications that leverage the power of Java server-side processing. The JavaServer Pages specification defines standard tags for the use and modification of JavaBeans™ components. In addition to the standard tags, the JSP specification describes how you can create custom tag libraries, which are collections of reusable components that are to be used from within a JSP page. This paper focuses on the SAS Custom Tag Library, available in Version 3 of AppDev Studio.

One main advantage of using JSP custom tags is that non-Java web developers and programmers can use familiar tag-based libraries to easily create JSP pages. Another advantage is that tag libraries are portable, and can be used within a JSP page in any servlet container. Grouping of similar, reusable components for development are yet another benefit which allows faster and cleaner implementation.

When a JSP page is first accessed by a client, it is parsed, validated, translated into a servlet, and finally executed. During the parse phase, a tag library descriptor file is used to make sure the tag library has proper JSP syntax. If present, validation classes are then used to verify that a particular tag library is being used as intended, such as the correct nesting of tags and the proper use of tag attributes. Translation involves compiling the page into a Java servlet, which includes translating the tags to Java code and setting up scripting variables. Requests made to the JSP page are sent back to the client in the execution step via a response.

The SAS Custom Tag Library is a collection of JSP custom tags that encapsulate the functionality of our specialized Java TransformationBean™ components. The tag library allows you to perform a wide variety of tasks through the adding of tags to your JSP page. The SAS tags are prebuilt and bundled in a jar file, which can be dropped into any web application to aid in speeding up development. Validation classes are also included, which insures that the SAS Custom Tag Library is used properly. Using the webAF Java development environment within AppDev Studio, you can drag and drop many of the tags into a page of your web application and have the tag code automatically generated for you.

The library is made available to the JSP page through a `taglib` directive, which maps a tag prefix to a unique URI identifier and tag library descriptor file. A tag is added to the page by specifying the defined prefix followed by the tag's name in an XML syntax. Attributes and body tags can be added as well, such as in the following example:

```
<%@taglib prefix="sas"
uri="http://www.sas.com/taglib/sas" %>
<sas:TableView id="myTable" cellPadding="2">
  <sas:Columns>
    <sas:Column modelIndex="2" />
  </sas:Columns>
  <sas:Rows>
    <sas:Row />
  </sas:Rows>
</sas:TableView>
```

Below are listed some of the key tags and features of the SAS Custom Tag Library:

- TableView Tags – view and edit relational table data
- OLAPTableView Tags – explore data within OLAP server cubes
- Selector Tags – perform data management tasks such as sorting, filtering, and selecting items
- Form Tags – create customized HTML forms for gathering and validating user input
- Graphics Tags – add graphic elements such as bar charts, pie charts and more
- MenuBar Tags – design menu and submenu structures
- TreeView Tags – display hierarchical lists of items
- JDBC Tags – attach JDBC data sources to standard HTML form controls via model/view communication
- iPage Tags – develop applications for wireless devices, such as mobile phones or PDA's
- Plus many more

**CONCLUSION**

The SAS Custom Tag Library gives you the ability to easily add SAS component functionality to your web applications. Using these tags will decrease the amount of Java code written in your JSP pages, expand the flexibility of your application, and speed up the overall web development process.

A greatly expanded version of this paper will be available on the web by SUGI. It will contain more detail of all the topics listed here, including SAS Custom Tag Library examples. You can find a final version of the paper at the AppDev Studio Developer's Site (<http://www.sas.com/rnd/appdev/>).

**CONTACT INFORMATION**

Your comments and questions are valued and encouraged.

Contact the author at:

Robert Girardin  
SAS Institute, Inc.  
Work Phone: (919) 531-2189  
Email: [Robert.Girardin@sas.com](mailto:Robert.Girardin@sas.com)

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