

# Empowering SAS® Users through a Webpage on Your Intranet

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## Abstract

SAS users in any organization can benefit from a webpage on their Intranet. This paper describes web browsing basics and assists the user in constructing a basic webpage. Internet websites with useful tutorials and tools will be listed for the budding webpage developer. Potential webpage developers will be provided a framework for SAS-related webpage content and given the uniform resource locators (URLs) for a number of recommended SAS-related sites which can be "linked" into their webpages; plus, the presentation will include an on-line demonstration of an actual Intranet webpage for SAS users.

## Introduction

Putting power into the hands of a SAS user at an organization can take many forms. Numerous papers and presentations at past SUGI conferences (see the *References* section of this paper) have addressed various electronic means of empowerment such as the Internet, the World Wide Web, List Servers, Newsgroups (and newsgroup archives), FTP Servers, E-mail, Bulletin Board systems, etc.

In the past couple of years, a new electronic phenomena, the Intranet, has appeared. The Intranet is an internal implementation of the Internet/World Wide Web within an organization. The Intranet differs from the globally accessible Internet/World Wide Web only in that there is a "firewall" between webpages hosted on the Intranet and those hosted on the Internet. However, firewalls do not prevent people within the organization from interacting with sites on the global Internet. The firewall, rather, is to keep individuals who are not a part of your organization from viewing any webpages that are hosted on your Intranet; webpages which, by definition, may contain material that is proprietary to your organization.

If your organization has an Intranet in place, then there is a tremendous resource available which has great potential benefit to SAS users at your site. A major advantage of an Intranet is that it can give your organization access to many of the electronic tools described above. Perhaps just as important to time-stressed SAS users, the Intranet can also provide a convenient "toolbox" where various tools are only a mouse-click away.

If you read the previous SUGI papers which describe available electronic tools, you quickly realize that any single individual has to remember a lot of directions and

protocols to access those tools. This paper will describe an Intranet webpage that ties many of the electronic tools into one place so that SAS users can quickly access information they need. Any reader who has a rudimentary knowledge of web browsers (such as Netscape Navigator or Microsoft Internet Explorer) and common word processing software should be able to return to his/her organization and create a basic webpage for the organization's SAS users after reading this paper.

Author's Note: Unless otherwise specified, all subsequent references to items on browser screens specifically refer to Netscape Navigator.

## Part 1: Explore!

The first step, of course, in any endeavor is to conduct some background research and gain an understanding of your topic. Acquiring and installing web browser software on your desktop is your first order of business. If your organization already has an Intranet in place, then contact the Intranet staff and find out if your organization has a site license for web browser software; if so, then follow the necessary requisition process to get your copy of the software. If your organization does not have a site license, then ask your Intranet staff for recommendations on how to acquire the appropriate software.

Once your browser software is installed, begin exploring! Generally, your Intranet staff will have in place a default "home" page that initially pops up for all users firing up browser software at your site. On this initial page they may have a number of "links" to useful webpages elsewhere on both the Intranet and Internet.

The first step once you fire up the browser software and have an active webpage visible is to understand what you are seeing. Readers are referred to the previous paper in this session "Creating a Homepage on the WWW for Your Local User Group - An Unlimited Resource for Local User Group Recruitment Strategies" by JoAnn Matthews for pointers on how to navigate using your web browser.

Finding relevant information on a topic that interests you can be as quick and easy as using one of the "search engines" on the Web. Try out the search capabilities at some of the following sites:

Excite Netsearch	<a href="http://www.excite.com/">http://www.excite.com/</a>
AltaVista Search	<a href="http://www.altavista.digital.com/">http://www.altavista.digital.com/</a>
Yahoo!	<a href="http://www.yahoo.com/">http://www.yahoo.com/</a>
Lycos	<a href="http://www.lycos.com/">http://www.lycos.com/</a>
Deja News	<a href="http://www.dejanews.com/">http://www.dejanews.com/</a>

There are sites with reference utilities as well. Need to find the phone number of a person or a business somewhere in the U.S.? Try using:

Switchboard <http://www.switchboard.com/>  
GTE SuperPages <http://yp.gte.net/>  
BigYellow <http://s13.bigyellow.com/>

Need to get an online map (which can also be sent to your printer) of a particular location, or need to have directions for traveling by road between two points? Try: MapQuest <http://www.mapquest.com/>

One final word as you explore the web. There is a box at the top of your browser labeled "View". What can you do with this? One handy thing you can do is examine the underlying HTML source code which created any particular webpage you happen to have active in your browser at the moment. If you click on the "View" box, then click on "Document Source" in the dropdown menu, a screen is displayed that contains the text that you see when the webpage is open in the browser, plus any HTML tags that were used to create the webpage. Later on, as you begin developing your own webpages, you may want to use this capability to study how someone else created a webpage, so that you can apply the same or similar techniques to your webpages.

Note to Netscape 3.01 (or later version) users: You will also have a "Frame Source" option that is bolded in the dropdown menu if you are viewing a webpage that uses frames. Clicking on the "Frame Source" will show you the HTML source code for whichever frame you have clicked in just prior to selecting "Frame Source". Clicking on "Document Source" when you have a webpage open that uses frames will show you the HTML code used to set up the frame structure.

## Part 2: Creating Your First Web Page

Taking the leap to create your first web page is really not any harder than creating a short document with your word processor. Hypertext Markup Language (HTML) sounds like a mouthful, but it's a jog in the park compared to the sometimes herculean task of wrestling with SAS programming code!

The first step is to create some text (using your standard word processor), then add "tags" before and after pieces of the text which will generate a desired effect within a web browser. Next, save the document as a standard text file. Finally, you start up your browser software and open the file within your browser.

Below is a very simple document containing some HTML tags. Enter the text (including the HTML tags) into a blank document on your word processor, then save the file as a standard text file (not as, for example, a Microsoft Word<sup>®</sup> 7.0 document) with the name SUGI1.HTM. Note: you will need to save the file with the extension "htm" instead of "txt".

```
<html>
<head>
<title>Example HTML Document</title>
</head>

<center><h2>Example HTML Document</h2></center><p>

<dl>
<dt><h3>Example of a List</h3>
<dd><b>MVS SAS 6.09E</b> - is now up and running at our site
<dd><a href="sugi2.htm">Link to Another Webpage</a>
<dd><b><l>Call 7-6387 to Request Windows SAS</b></l>
</dd>
</dl>

</html>
```

After saving the above file as SUGI1.HTM, create and save another file, containing the text below, as SUGI2.HTM. Be sure and save it in the same directory as SUGI1.HTM.

```
<head>
<title>Another Example HTML Document</title>
</head>

<h1>Another Example HTML Document</h1><p>

<ul>
<li><h3>Other Webpage List of Items</h3>
<ol>
<li><b><l>Do the SAS Data Step!</b></l>
<li><b><l>Call the Local SAS Account Rep Today!</b>
</ol>
</ul>
<p>

Click on the "Back" button at the top of your screen to go back to the first page you created.
</html>
```

After saving both SUGI1.HTM and SUGI2.HTM, start up your browser. Click on "File" at the top of the screen, then click on "Open File..." which appears in the dropdown menu. You will see a standard file directory structure; browse it until you find the SUGI1.HTM file, then double-click on it.

Once it loads into the browser, review what you generated. Next, click on the highlighted and underlined text "Link to Another Webpage" and you will see the information from the SUGI2.HTM text file. Review what the SUGI2.HTM hypertext markup tags generated. You should be able to quickly match the HTML tags to their effect on the browser image. A complete description of the various HTML tags and their effects can be found by checking out the HTML tutorials and reference documents listed in the next section of this paper. Note: you may find it helpful to review the adjoining paper (in this Proceedings) by JoAnn Matthews, which also has information on creating webpages.

Various means of authoring webpages now exist. The above description shows how to create webpages using only a text editor and then checking the result through a

browser. Webpage creation tools/capabilities are beginning to appear in word processors, spreadsheets, and other software which will make the generation of HTML-coded documents quite easy (see the HTML Authoring Tools list in the next part of this paper).

Once you begin creating webpages to place on your organization's Intranet, you will need to contact your Intranet staff to get your pages "linked" into the Intranet. They will assign a directory for your files on the webserver, and you will copy your files to that location. Another item to keep in mind is that once they assign you a directory, the file DEFAULT.HTM (in the assigned directory) is the one that will automatically load from that directory whenever a user accesses the directory via his browser. Thus, your first page, to which all your other pages should be linked, should be saved as a file named DEFAULT.HTM.

Now, let's assume the information in the following box has been saved as your DEFAULT.HTM file. What calls (links) other pages to this page?

```
<html>
<head>
<title>The First WebPage</title>
</head>

<center><h2>Example First Webpage</h2></center><p>

<h3>Example Links</h3><p>
<a href="staff.htm">Meet your SAS Support Staff</a><p>
<a href="http://www.sas.com">SAS Institute</a><p>
<a href="http://www.pharmasug.org">PharmaSUG</a><p>

</html>
```

In the code above, the line containing the phrase "Meet your SAS Support Staff" will be highlighted and underlined when this file is opened in the browser. When you click on the phrase, your browser will open the file "staff.htm" in the directory on your webserver (if you've already created the "staff.htm" file). Likewise, once you have the above DEFAULT.HTM file saved on an actual webserver machine, clicking on the phrase "SAS Institute" will link you to SAS Institute's website in North Carolina. Finally, the last link, "PharmaSUG", will link you to the Pharmaceutical Industry SAS Users Group webpage when you click on it.

Note the common features of each of the three lines referenced above; in the HTML code, there is an "<a href=" preceding the address of the linked file; a ">" follows the linked file address; then there is some text describing the file, which is the text that will be highlighted when the file is opened in the browser; and last, there is an "</a>" to close the tag.

This completes a quick summary of how to create some basic webpages. For more detailed information, please check out the references in the following section.

## Part 3: Webpage Developer Tools

This paper will not attempt to be a complete tutorial on webpage development, since there are many excellent webpages with tutorials and other resources which you will find useful as you enhance your knowledge of HTML coding and webpage construction.

Some recommended webpages (at the time of writing this paper) include the following links:

### Copyright Considerations for Your Web Page

<http://scilib.ucsd.edu/electclass/CopyrightTips.html>

### HTML Reference Guides

WebReference.Com  
<http://webreference.com/>

HTML Specification, Version 3.2 (CERN, Switzerland)  
<http://www.w3.org/pub/WWW/MarkUp/Wilbur/>

All about URL's (CERN, Switzerland)  
<http://www.w3.org/pub/WWW/Addressing/Addressing.html>

Numerous books – including: *Special Edition Using Microsoft FrontPage 97 - Online Version*; *HTML Quick Reference*; *Special Edition Using HTML, Second Edition*; and *Special Edition Using Java, Second Edition* are available (full text) online as part of Que's Digital Bookshelf Home Page  
<http://www.mcp.com/que/bookshelf/>

Netscape Navigator Handbook -- including a Tutorial, JavaScript Guide, and Plug-in Guide  
<http://home.netscape.com/eng/mozilla/3.0/handbook/>

### HTML Tutorial

WRITING HTML - a tutorial for creating World Wide Web pages  
<http://www.mcli.dist.maricopa.edu/tut/index.html>  
by Alan Levine at Maricopa Community Colleges

### HTML Authoring Tools

HTML Editors (Yahoo)  
[http://www.yahoo.com/Computers/World\\_Wide\\_Web/HTML\\_Editors/](http://www.yahoo.com/Computers/World_Wide_Web/HTML_Editors/)

Microsoft Internet Assistants for Word, Excel and PowerPoint  
[http://www.microsoft.com/MSOffice/MSOfc/it\\_ofc.htm](http://www.microsoft.com/MSOffice/MSOfc/it_ofc.htm)

HTML Converters (Yahoo)  
[http://www.yahoo.com/Computers/World\\_Wide\\_Web/HTML\\_Converters/](http://www.yahoo.com/Computers/World_Wide_Web/HTML_Converters/)

## HTML Authoring and Style Guides

Web Style Manual by Patrick J. Lynch (Yale Center for Advanced Instructional Media)  
[http://info.med.yale.edu/caim/StyleManual\\_Top.HTML](http://info.med.yale.edu/caim/StyleManual_Top.HTML)

A Style Guide on Online Hypertext by Tim Berners-Lee (CERN, Switzerland)  
<http://www.w3.org/pub/WWW/Provider/Style/Overview.html>

NCSA HTML Style Sheet by Ken Chang (NCSA, Illinois)  
<http://www.ncsa.uiuc.edu/Pubs/StyleSheet/NCSAStyleSheet.html>

Composing Good HTML by James "Eric" Tilton (Carnegie Mellon University)  
<http://www.cs.cmu.edu/~tilt/cgh/>

## Frames

Framing the Web (by Dan Brown)  
<http://webreference.com/dev/frames/>

## Graphics Resources

Image Libraries  
<http://www.lookup.com/image/SMARTlib/>  
[http://www.yahoo.com/Computers\\_and\\_Internet/Multimedia/Pictures/Clip\\_Art/](http://www.yahoo.com/Computers_and_Internet/Multimedia/Pictures/Clip_Art/)

PixelSite (Interactive Visual Design tool)  
<http://www.pixelSight.com:80/PS/pixelSite/pixelSite.html>

GIF Animation  
<http://members.aol.com/royalef/gifanim.htm>  
<http://www.mindworkshop.com/alchemy/alchemy.html> (check out the downloadable "GIF Construction Set")  
[http://www.yahoo.com/Computers\\_and\\_Internet/Graphics/Computer\\_Animation/Animated\\_GIFs/](http://www.yahoo.com/Computers_and_Internet/Graphics/Computer_Animation/Animated_GIFs/)

Background Colors (RGB Hex Triplets) - Doug Jacobson  
<http://www.phoenix.net/~jacobson/rgb.html>

Background Images  
[http://home.netscape.com/assist/net\\_sites/bg/backgrounds.html](http://home.netscape.com/assist/net_sites/bg/backgrounds.html)

Transparent Background Images  
<http://www2.ncsu.edu/bae/people/faculty/walker/hotlist/transpar.html>

Imagemap Editing Tools  
<http://www.boutell.com/mapedit/>

## Java

<http://java.sun.com/>

## SAS Web Tools

<http://www.sas.com/rnd/web/sitemap.html>

## Part 4: SAS-specific Intranet Webpage Content

While going through the steps in Parts 1-3, spend some time thinking about the needs of SAS users at your site. In fact, since the webpage will likely be viewed by non-SAS users in the organization, you should consider including a section that tells those individuals about SAS products. SAS Institute's website has many excellent webpages, geared toward informing the non-SAS user about SAS products, which can be linked to from your webpage.

In our organization, the webpage our team placed on the Intranet is called the "SAS and JMP Users Homepage". JMP information is included for two reasons: it is a SAS Institute product which our particular team supports, and it is a very popular piece of software (our organization is, at this writing, the largest single client site for the JMP software, according to SAS Institute).

On the "SAS and JMP Users Homepage", we have settled on the categories of News, Events, Training, Troubleshooting Tools, Reference Information, Computing Platforms, and a final category called "What Are SAS & JMP?" for our main page. The "Homepage" uses frames; one small framed area has links to current "hot topics", a second frame has a "toolbar" of quick links to the categories listed above, and a third frame has a quick link to information about the next demo or tutorial session that will be taking place at our organization. The frames have been coded so that the smaller frames remain on-screen (giving users access at any time to key links), while the information on largest frame changes. Some simple Java scripting code also plugs scrolling information into the small horizontal bar at the bottom of the browser screen.

Within the News category of our "Homepage", some examples of recent listings include:

- Rollout of new versions and/or retirement of old versions of SAS or JMP within the company
- Changes to our site license agreements
- Availability of SAS or JMP beta versions for testing by users
- Information about performance improvements that are underway or completed (author's note: see a paper by Fred Forst in this Proceedings which elaborates on performance gains realized from the implementation of SAS hiperspaces in MVS SAS)
- Special announcements from SAS Institute about new products/capabilities

Information listed under the Events category on the "Homepage" include:

- Upcoming SUGI, SEUGI, PharmaSUG, and regional/local users group meetings

- Special seminars sponsored by SAS Institute in the local area (such as their recent series on “Data Warehousing”, “Data Mining”, etc.)
- Hands-on demo/tutorial sessions being held in our training rooms to familiarize our users with new SAS or JMP capabilities

Items in the Training category on our “Homepage” include:

- SAS and JMP training courses offered through our company, including dates, times, locations, costs, and enrollment information
- How to access online SAS tutorials on our platforms
- Any special offers or discounts offered by SAS Institute on their training courses/materials
- Direct links to SAS Institute webpages which show their courses offered at all their locations (separate links by courses or by locations are listed)
- Information (via a link direct to the appropriate SAS Institute webpage) on how to order a free subscription to their training catalog

The Troubleshooting Tools section on the “Homepage” accesses:

- The SAS-L Newsgroup
- The SAS-L (searchable) Archives
- SAS Institute’s (searchable) SAS Version 6 Usage Notes (at SAS Institute; thus this is assumed more current compared to the Notes shipped with maintenance releases of SAS software)
- SAS Institute’s Technical Notes
- Frequently asked questions and answers (we have a link to both the SAS Institute webpage on this topic, and a link to our own page which covers questions and answers we have handled in our company)
- A series of pages that takes users through an online “problem resolution process” (presently this takes them through a search of the SAS Version 6 Usage Notes, then a search of the SAS-L Archives, and finally a search of the SAS Technical Notes). Of course, if they still can’t find a resolution, they call or email us!
- SAS tips accessible at a variety of worldwide websites
- Frequently Asked Questions (FAQ) about SAS at several universities
- Information on how our users can join the JMP-L Listserv using Internet email
- A direct link to SAS Institute’s “JMP Patches” webpage so that our JMP users can download and install the latest JMP patches through the webpage

Our “Homepage” Reference Information category includes:

- Direct links to the main SAS Institute webpage, and all known webpages maintained by SAS Users groups

- Links to the SAS Sample Library File Contribution Server and the JSE SAS program archive
- Quick links to SAS Institute webpages for the online SAS Publications catalog, and subscription information for these periodicals published by SAS Institute: *SAS Communications*, *Observations*, *Authorline*, and *Inform*.
- Links to the SUGI 19 - SUGI 22 list of papers and abstracts (we also have the text of the SUGI 21 Proceedings papers accessible via an online CD)
- A set of links to information on the Year 2000 problem
- A link to population and demographic resources on the web

The “Homepage” Computing Platforms category has two main parts:

- A link to SAS Institute webpages which detail all the possible platforms for the SAS system
- A listing of platforms on which our company has licensed either the SAS system or the JMP product, the specific versions and modules available, and a listing of the system requirements for each product on the desktop platforms

Finally, the “What Are SAS and JMP?” category on the “Homepage” has:

- Links to SAS Institute webpages which describe the SAS system and each individual module
- A link to SAS Institute’s JMP page, which has a good description of JMP, plus a downloadable demo version of JMP
- A webpage that details current and recent usage levels (or number of desktop installations) of the SAS and JMP products at our company

Author’s Note: Listings of URLs for many SAS-related webpages on the general Internet, which we link to from our “Homepage”, will be made available during the SUGI conference, and by mail or email after the conference. Space limitations preclude listing the SAS-related URLs in this paper; also, providing the listings during the conference or afterwards will increase the likelihood that URLs provided are “active” links.

## Part 5: Some Final Do’s and Don’ts

DO take advantage of freeware and shareware resources and online tools as appropriate; you can do a lot of webpage development using inexpensive software tools plus the software you probably already have available on your system.

DO make sure all browsers in use on your Intranet can support frames, OR that you have a <noframes> tag in place to warn those with browsers that are incapable of viewing your framed webpages (see box below for example code to generate a noframes warning – and be

sure, within the code, to provide users with a link to a webpage where they can download a newer browser version if it is possible to do so on your organization's intranet)

```
<NOFRAMES>
<h1 align=center><blink>Frame ALERT!</h1>
<h3 align=center>
<p>
The <|>SAS and JMP Users Homepage</|> is now designed to be
viewed using <b>Netscape version 2.0 (or higher)</b>, which
supports the Frame features. If you are seeing this message, you
are using a browser incapable of displaying the Frame features,
i.e., you are using a version of Netscape lower than 2.0.
</p>
<p>
Information on how to upgrade your browser to Netscape 2.02
(which is <b>Frame-capable</b>) is located on the
<a href="newvers.htm"> Netscape Navigator 2.02 Now Available!
</a>page of the Lilly Internet Services Group.
</h3>
</p>
</NOFRAMES>
```

DON'T key-in a page when you could simply link to the information somewhere else on your Intranet or the Internet.

DO be wary of boundaries – keep in mind the maximum pixel height/width viewable on smallest screen in your organization when creating your webpages. Another user with a different monitor and different video driver probably won't see the same thing you do. Check with your Intranet staff for recommended maximums.

DON'T get carried away creating or using excess graphics in your webpage; users will get frustrated if your webpages take a long time for their systems to load onto their browsers.

DO increase the value of your site by linking to useful data resources, not just SAS-related sites.

DO monitor your webpage, checking links from time to time, as links (especially those you've linked to on the world wide web that are outside your Intranet) may move or be deactivated; you will need to update or eliminate your links appropriately.

DO spread the word about your website to SAS users; many may find that the availability of useful information on their Intranet gives them a business reason to use their browser software. Other ways to spread the word include: informing new users at the time they install desktop versions of SAS; sending email to users; visiting in-house SAS and JMP training classes to mention the webpage and other SAS support services that are available at your site; inserting a note that appears at the top of the Log file in SAS jobs on mainframe platforms; having other groups with webpages build links to your webpage (for example, have your computing support center and/or statistics department add a link on their webpages to your webpage).

## References

Creating a Homepage on the WWW for Your Local User Group - An Unlimited Resource for Local User Group Recruitment Strategies, JoAnn Matthews, SUGI 22.

An Electronic Roadmap to SAS Discussion and Support, Rick Nocola, SUGI 21.

How SAS Software Users Can Benefit from the Internet, Helen Carey and Ginger Carey, SUGI 21.

SAS Tools and Internet, Charles E. Shipp, Kirk Paul Lafler, and Sunil K. Gupta, SUGI 21.

Don't Be Roadkill on the Information Superhighway: Using the Internet to Support SAS Software, Nancy J. Hill, SUGI 20.

The Lazy Man's Guide to SAS Software, Ginger Carey and Helen Carey, SUGI 19.

The One-Eyed Guide to INTERNET, E-MAIL, LISTSERV, and SAS-L, Michael Davis, SUGI 18.

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