

Version 8 ODS (Output Delivery System)

Prepared by



International SAS® Training and Consulting
A SAS Institute Quality Partner™

100 Great Meadow Rd, Suite 601
Wethersfield, CT 06109-2379
Phone: (860) 721-1684 1-800-7TRAINING
Fax: (860) 721-9784

Web: www.destinycorp.com Email: info@destinycorp.com

This presentation is designed to demonstrate the different possibilities we use when we build web based applications for clients and teach them the web publishing techniques we use with SAS Software. Actual examples are available on our web site.

Basic HTML Publishing

The most basic form is brute force HTML generation using the traditional data step. This tends to be the most flexible, but the most time consuming and requires complete knowledge of how HTML works. FILE and PUT statements are used extensively.

```

Command SAS
00001 libname saved 'c:\sas';
00002 data _null_;
00003 set saved.demograf end=x;
00004 file 'c:\datenull.html';
00005 if _n_ = 1 then do;
00006 put '<h3>SAS Data Set Demograf</h3>';
00007 / '<h2>from the Saved library</h2>';
00008 / '<ol>';
00009 end;
00010 put '1. F 0 0 $0';
00011 if x then put '';
00012 run;
00013 x 'c:\program\intern\intern\explorer.exe c:\datenull.html';
00014

```

SAS Data Set Demograf

from the Saved library

1. F 0 0 \$0
2. F 0 0 \$0
3. F 0 0 \$0
4. F 0 1 \$13,000
5. F 1 1 \$5,600
6. F 2 1 \$8,000

Data Set Publishing with DS2HTM

SAS offers a macro that allows one to take a SAS data file and present it in an HTML form.

```

Command SAS
00001 libname saved 'c:\sas';
00002 data work.demograf;
00003 set saved.demograf;
00004 format salary dollar10.;
00005 run;
00006
00007 title1 'Data Set Table';
00008
00009 ods2html(data =work.demograf,
00010 where =status = 'SEP',
00011 var =gender status children salary,
00012 htmlfile=c:\test1.html,
00013 runmode =b);
00014
00015 x 'c:\program\intern\intern\explorer.exe c:\test1.html';
00016

```

Data Set Table

GENDER	STATUS	CHILDREN	SALARY
F	S	0	\$0
F	S	0	\$0
F	S	0	\$0
F	S	0	\$13,000
F	M	1	\$5,600

SAS Output Publishing with OUT2HTM

Any procedure's output can be captured and published with the OUT2HTM macro.

```

Command SAS
00001 libname saved 'c:\sas';
00002 %out2html(capture=on);
00003
00004 title1 'Proc Report Output';
00005 options nodate formchar='---|---|---|---|';
00006 proc report data=saved.demograf list= P1=15 SPLIT= CENTER NOWINDOWS;
00007 column gender status age salary children cars;
00008 define gender / group format= $8. width=8 spacing=2 left "GENDER";
00009 define status / group format= $8. width=8 spacing=2 left "STATUS";
00010 define age / sum format= 3. width=8 spacing=2 right "AGE";
00011 define salary / sum format= BEST8. width=8 spacing=2 right "SALARY";
00012 define children / sum format= BEST8. width=8 spacing=2 right "CHILDREN";
00013 define cars / sum format= BEST8. width=8 spacing=2 right "CARS";
00014 break after gender / OL SKIP SUMMARIZE;
00015 run;
00016
00017 title1 'Proc Tabulate Output';
00018 proc tabulate data=saved.demograf;
00019 class status gender;
00020 var salary;
00021 table status,gender*salary;
00022 run;
00023
00024 title1 'Proc Tabulate Output';
00025 proc tabulate data=saved.demograf;
00026 class status gender;
00027 var salary;
00028 table status,gender*salary;
00029 run;
00030
00031 %out2html(capture=off,
00032 runmode=b,
00033 htmlfile=c:\test1.html,
00034 textfile=,
00035 testfile=);
00036 x 'c:\program\intern\intern\explorer.exe c:\test1.html';
00037

```

Proc Report Output

GENDER	STATUS	AGE	SALARY	CHILDREN	CARS
F	D	23	8000	2	1
F	M	41	131800	31	20
F	S	17	43000	0	2
F	SEP	23	18000	1	1
F	M	45	10000	3	1
F		35	230600	37	25
F	D	35	20000	5	2
F	M	37	118300	18	9
F	S	17	17800	0	2
F	SEP	55	12000	2	1
F		31	168100	25	14

TABLE OF STATUS BY GENDER					
STATUS	GENDER	Frequency			
		Percent	Row Pct.	Col Pct	Total
F	M	1	2	1	3
		2.86	5.71	0.57	
		59.59	66.07		
		4.76	10.29		
		F	F		
37.14	27.24			54.29	
68.42	51.05				
61.90	42.86				
S	M				1
		14.29	14.29	28.57	
		50.00	50.00		
		23.61	35.71		
		SEP	M		1
2.86	2.86			5.71	
20.00	20.00				

FROG TABULATE OUTPUT		
STATUS	GENDER	
	F	M
	SALARY	SALARY
	SUM	SUM
1	8000.00	20000.00
2	151600.00	118900.00
3	43000.00	17800.00
REP	18000.00	12000.00
TOTAL	30000.00	

Tabulate Publishing with TAB2HTML

A special macro has been designed to capture the output of a PROC TABULATE and create an HTML table. This is a better presentation for a PROC TABULATE than using OUT2HTM.

```

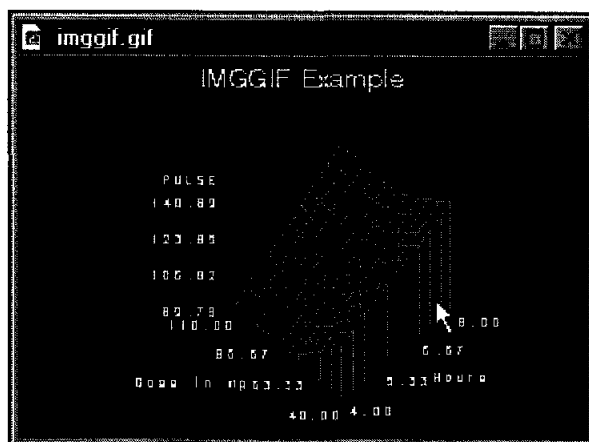
C:\Users\james>cd %~dp0
Command (s):
00001 |!browser saved 'crash'; &
00002 |!browser(captureasn);
00003
00004 title: 'Proc Tabulate Output';
00005 options: node;
00006
00007 proc tabulate state=saved.demograf fromwhere='00002|00003|00004|00005'x format=,
00008   state status gender;
00009   table state*gender;
00010 run;
00011
00012 |!browser(captureasnoff,
00013   runmode=,
00014   html|!proc test1.html,
00015   state=tbl,
00016   color=green);
00017 x 'x:progres\intern\implora.exe s:\test1.html';
00018

```

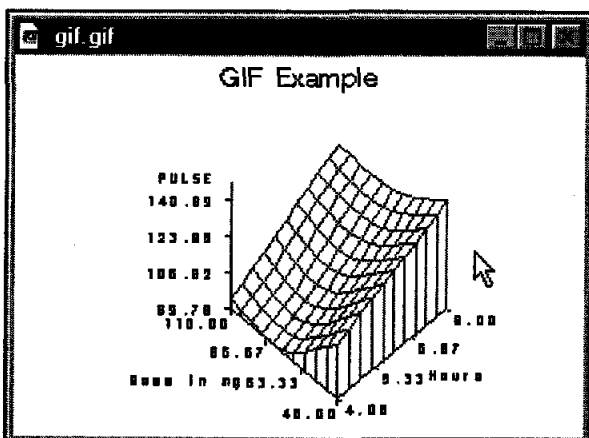
STATUS									
D		M		S		SEP		W	
GENDER		GENDER		GENDER		GENDER		GENDER	
F	M	F	M	F	M	F	M	F	
N	N	N	N	N	N	N	N	N	
1	2	13	6	5	5	1	1	1	

The following drivers are designed to create graphical output used on the web with SAS/Graph software.

Graphical Publishing with GIFs 6.09

[illegible]

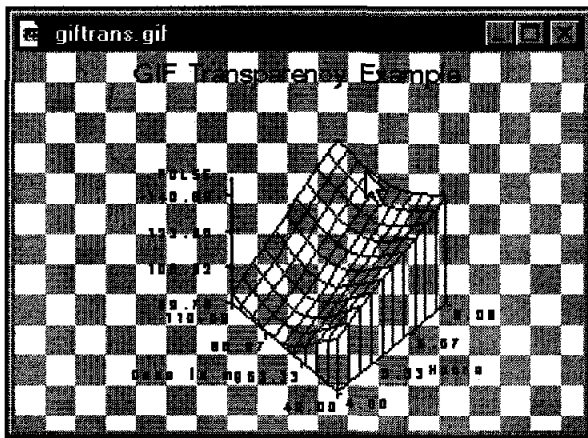
Graphical Publishing with GIFs 6.09e and 6.12

[illegible]

Graphical Publishing with GIFs 6.09e and 6.12 Transparency

```

Command: echo |
00001 %%% The HP device driver is available in releases 0.900 and 0.12 of the software.
00002 %%% Transparency Example.
00003
00004 %%% Internal devices "c:\temp".
00005 %%% Print device environment.device names:
00006 %%% only if transparency.device name=trans:
00007 %%% not if trans.name!="trans"
00008 quit;
00009
00010 %%% User: label=(unit0,unit2,opt0,opt2,trans0,trans2);
00011 %%% If opt0 is then opt0 must be greater than zero.;
00012 %%% Note:
00013 %%% options helixkeyevent(helxopt) in helixkeyevent(helxopt);in
00014 %%%
00015 %%%
00016 %%%
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```

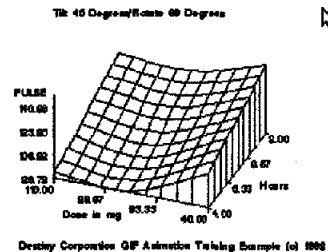


Animation with GIFs

[illegible]

Animated GIF HTML Example

(Look Mom, see what I can do!)



Version 8 and the Output Delivery System

When ODS was introduced in Version 8 of SAS software, a whole new way of publishing was created.

The simplest form of output can be seen by the following example.

First, notice the typical style of using ODS.

1. The ODS 'capture style' utility is turned on.
2. The process executes.
3. The ODS utility is turned off.

The general ODS syntax can look like the following.

```

Program Editor (Untitled)
Command ==>
00001 ods html body='c:\body.html'
00002 contents='c:\contents.html'
00003 page='c:\page.html'
00004 frame='c:\frame.html';
00005
00006 proc freq data=saved.demograf;
00007 table status*gender;
00008 run;
00009 ods html close;
00010
00011

```

This syntax routes HTML output anywhere you desire. It creates four files. The FRAME.HTML file pulls them all together.



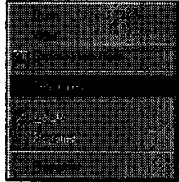
HANDS ON WORKSHOPS

Styles in HTML

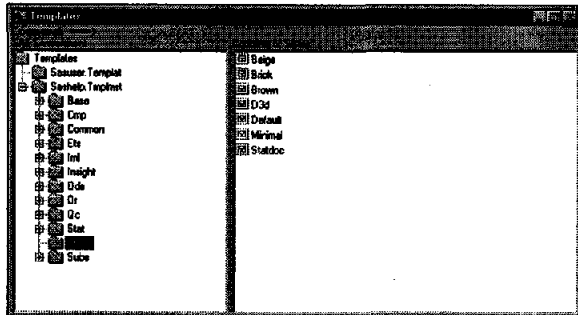
There are several HTML styles that come with SAS. They are designed to allow the user to create an HTML standard of colors, fonts and more across all HTML output. Any of the default ones can be used, or they can be modified to suit your needs. To see the existing styles, go to the Results window and select.



Right click and select Templates.



Select SASHELP.TMPLMST, Styles to see the available styles.



To examine a style, execute Proc Template with the Style name. Default is the default style used.



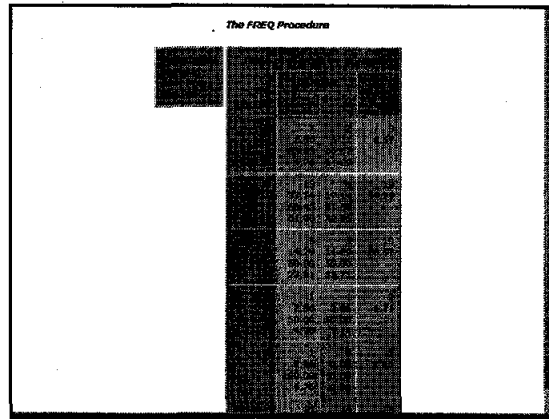
```
Command --->
254 proc template;
255   source styles.default;
define style Styles.Default;
  style fonts /
    'TitleFont2' = ('Arial, Helvetica, Helv',4,Bold Italic)
    'TitleFont' = ('Arial, Helvetica, Helv',5,Bold Italic)
    'StrongFont' = ('Arial, Helvetica, Helv',4,Bold)
    'EmphasisFont' = ('Arial, Helvetica, Helv',3,Italic)
    'FixedEmphasisFont' = (Courier,3,Italic)
    'FixedStrongFont' = (Courier,4,Bold)
    'FixedHeadingFont' = (Courier,4)
    'FixedFont' = (Courier,4)
    'HeadingEmphasisFont' = ('Arial, Helvetica, Helv',4,Bold Italic)
    'HeadingFont' = ('Arial, Helvetica, Helv',4,Bold)
    'docFont' = ('Arial, Helvetica, Helv',3);
  style color list /
    'fgB2' = cx0055AA
    'fgB1' = cx004400
    'fgA' = cx00FF00
    'bgA' = cx880000
    'bgB' = cx000000
    'fgI2' = cx0033AA
    'fgI' = cx000000
    'fgA1' = cx000000
    'fgB1' = cx000000
    'fgI' = cx000000
    'bgA' = cx000000;
  style colors /
    'headerfemph' = color-list('fgI2')
    'headerbgemph' = color-list('bgA')
    'headerfstrong' = color-list('fgB2')
    'headerbgstrong' = color-list('bgB');
```

Cut and paste the code for modification. Rerun it with a new name and your own style can be created.

To select a style, use the ODS statement



It produces the following HTML. (Looks different than styles.default)



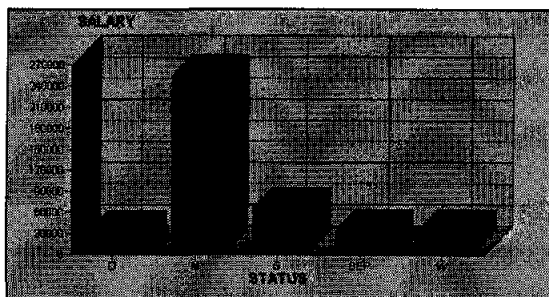
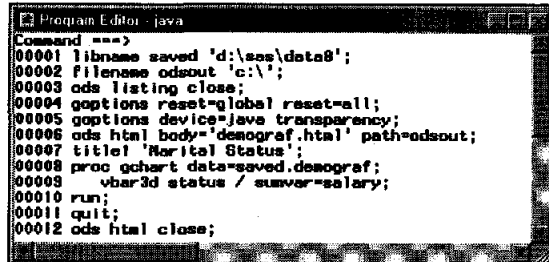
See the online help to learn more about changing styles and what the values mean.

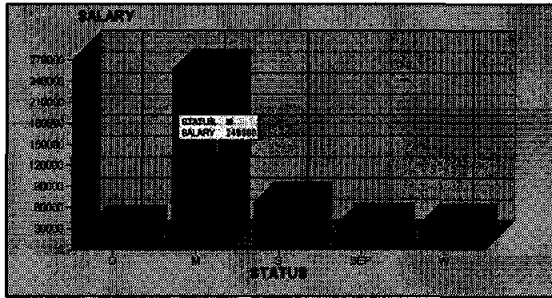
Graphical Support

There are several other drivers available for outputting graphical objects. Consider the following.

Java Support

There is Java support. Consider the following driver.





There are several menus available from the right click of a mouse.



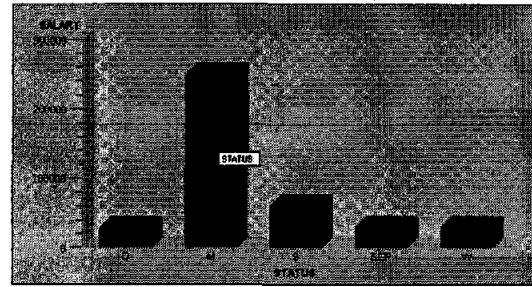
Experiment with each to understand the capabilities.

Active X Support

SAS now supports Active X controls. Consider the following code with the Active X Driver.

```

Program Editor - active2
Command ==>
00001 libname saved 'd:\sas\data0';
00002 filename odsout 'c:\';
00003 ods listing close;
00004 options reset-global reset-all;
00005 options device=activex transparency;
00006 ods html body='demograf.html' path=odsout;
00007 title 'Marital Status';
00008 proc gchart data=saved.demograf;
00009   vbar3d status / suvar=salary;
00010 run;
00011 quit;
00012 ods html close;
  
```



A right click yields many possibilities.



Consider testing out the different options.

HANDS ON WORKSHOPS

Using Styles in Procedures

Style options are available in SAS. Their syntax is added to procedures when formatting them for output. This is available on the procedure level in the following way. Use the syntax

`S={foreground=blue}`

At various locations to specify colors.

Current supported Procedures are Tabulate and Report.

Styles in Proc Tabulate

```
Program Editor - tabcolor
Command ==>
00001 libname saved 'd:\sas\data9';
00002
00003 ods html body="c:\tabcolor.html";
00004 ods listing close;
00005
00006 title 'Tabulate Color Example using styles';
00007 footnote;
00008 proc tabulate data=saved.demograf;
00009   class status gender / s={foreground=blue};
00010   classlev status gender / s={foreground=yellow};
00011   var salary age / s={foreground=white};
00012   keyword all sum / s={foreground=white};
00013   label all="Total";
00014   table status,gender*{s={foreground=orange}}*salary;
00015 run;
00016
00017 ods html close;
00018 ods listing;
00019
```

Tabulate Color Example using styles

Status		Total	
Gender	Salary	Age	Total
F	1500	25	1500
F	2000	30	2000
F	2500	35	2500
F	3000	40	3000
F	3500	45	3500
F	4000	50	4000
F	4500	55	4500
F	5000	60	5000
F	5500	65	5500
F	6000	70	6000
F	6500	75	6500
F	7000	80	7000
F	7500	85	7500
F	8000	90	8000
F	8500	95	8500
F	9000	100	9000
F	9500	105	9500
F	10000	110	10000
F	10500	115	10500
F	11000	120	11000
F	11500	125	11500
F	12000	130	12000
F	12500	135	12500
F	13000	140	13000
F	13500	145	13500
F	14000	150	14000
F	14500	155	14500
F	15000	160	15000
F	15500	165	15500
F	16000	170	16000
F	16500	175	16500
F	17000	180	17000
F	17500	185	17500
F	18000	190	18000
F	18500	195	18500
F	19000	200	19000
F	19500	205	19500
F	20000	210	20000
F	20500	215	20500
F	21000	220	21000
F	21500	225	21500
F	22000	230	22000
F	22500	235	22500
F	23000	240	23000
F	23500	245	23500
F	24000	250	24000
F	24500	255	24500
F	25000	260	25000
F	25500	265	25500
F	26000	270	26000
F	26500	275	26500
F	27000	280	27000
F	27500	285	27500
F	28000	290	28000
F	28500	295	28500
F	29000	300	29000
F	29500	305	29500
F	30000	310	30000
F	30500	315	30500
F	31000	320	31000
F	31500	325	31500
F	32000	330	32000
F	32500	335	32500
F	33000	340	33000
F	33500	345	33500
F	34000	350	34000
F	34500	355	34500
F	35000	360	35000
F	35500	365	35500
F	36000	370	36000
F	36500	375	36500
F	37000	380	37000
F	37500	385	37500
F	38000	390	38000
F	38500	395	38500
F	39000	400	39000
F	39500	405	39500
F	40000	410	40000
F	40500	415	40500
F	41000	420	41000
F	41500	425	41500
F	42000	430	42000
F	42500	435	42500
F	43000	440	43000
F	43500	445	43500
F	44000	450	44000
F	44500	455	44500
F	45000	460	45000
F	45500	465	45500
F	46000	470	46000
F	46500	475	46500
F	47000	480	47000
F	47500	485	47500
F	48000	490	48000
F	48500	495	48500
F	49000	500	49000
F	49500	505	49500
F	50000	510	50000
F	50500	515	50500
F	51000	520	51000
F	51500	525	51500
F	52000	530	52000
F	52500	535	52500
F	53000	540	53000
F	53500	545	53500
F	54000	550	54000
F	54500	555	54500
F	55000	560	55000
F	55500	565	55500
F	56000	570	56000
F	56500	575	56500
F	57000	580	57000
F	57500	585	57500
F	58000	590	58000
F	58500	595	58500
F	59000	600	59000
F	59500	605	59500
F	60000	610	60000
F	60500	615	60500
F	61000	620	61000
F	61500	625	61500
F	62000	630	62000
F	62500	635	62500
F	63000	640	63000
F	63500	645	63500
F	64000	650	64000
F	64500	655	64500
F	65000	660	65000
F	65500	665	65500
F	66000	670	66000
F	66500	675	66500
F	67000	680	67000
F	67500	685	67500
F	68000	690	68000
F	68500	695	68500
F	69000	700	69000
F	69500	705	69500
F	70000	710	70000
F	70500	715	70500
F	71000	720	71000
F	71500	725	71500
F	72000	730	72000
F	72500	735	72500
F	73000	740	73000
F	73500	745	73500
F	74000	750	74000
F	74500	755	74500
F	75000	760	75000
F	75500	765	75500
F	76000	770	76000
F	76500	775	76500
F	77000	780	77000
F	77500	785	77500
F	78000	790	78000
F	78500	795	78500
F	79000	800	79000
F	79500	805	79500
F	80000	810	80000
F	80500	815	80500
F	81000	820	81000
F	81500	825	81500
F	82000	830	82000
F	82500	835	82500
F	83000	840	83000
F	83500	845	83500
F	84000	850	84000
F	84500	855	84500
F	85000	860	85000
F	85500	865	85500
F	86000	870	86000
F	86500	875	86500
F	87000	880	87000
F	87500	885	87500
F	88000	890	88000
F	88500	895	88500
F	89000	900	89000
F	89500	905	89500
F	90000	910	90000
F	90500	915	90500
F	91000	920	91000
F	91500	925	91500
F	92000	930	92000
F	92500	935	92500
F	93000	940	93000
F	93500	945	93500
F	94000	950	94000
F	94500	955	94500
F	95000	960	95000
F	95500	965	95500
F	96000	970	96000
F	96500	975	96500
F	97000	980	97000
F	97500	985	97500
F	98000	990	98000
F	98500	995	98500
F	99000	1000	99000
F	99500	1005	99500
F	100000	1010	100000
F	100500	1015	100500
F	101000	1020	101000
F	101500	1025	101500
F	102000	1030	102000
F	102500	1035	102500
F	103000	1040	103000
F	103500	1045	103500
F	104000	1050	104000
F	104500	1055	104500
F	105000	1060	105000
F	105500	1065	105500
F	106000	1070	106000
F	106500	1075	106500
F	107000	1080	107000
F	107500	1085	107500
F	108000	1090	108000
F	108500	1095	108500
F	109000	1100	109000
F	109500	1105	109500
F	110000	1110	110000
F	110500	1115	110500
F	111000	1120	111000
F	111500	1125	111500
F	112000	1130	112000
F	112500	1135	112500
F	113000	1140	113000
F	113500	1145	113500
F	114000	1150	114000
F	114500	1155	114500
F	115000	1160	115000
F	115500	1165	115500
F	116000	1170	116000
F	116500	1175	116500
F	117000	1180	117000
F	117500	1185	117500
F	118000	1190	118000
F	118500	1195	118500
F	119000	1200	119000
F	119500	1205	119500
F	120000	1210	120000
F	120500	1215	120500
F	121000	1220	121000
F	121500	1225	121500
F	122000	1230	122000
F	122500	1235	122500
F	123000	1240	123000
F	123500	1245	123500
F	124000	1250	124000
F	124500	1255	124500
F	125000	1260	125000
F	125500	1265	125500
F	126000	1270	126000
F	126500	1275	126500
F	127000	1280	127000
F	127500	1285	127500
F	128000	1290	128000
F	128500	1295	128500
F	129000	1300	129000
F	129500	1305	129500
F	130000	1310	130000
F	130500	1315	130500
F	131000	1320	131000
F	131500	1325	131500
F	132000	1330	132000
F	132500	1335	132500
F	133000	1340	133000
F	133500	1345	133500
F	134000	1350	134000
F	134500	1355	134500
F	135000	1360	135000
F	135500	1365	135500
F	136000	1370	136000
F	136500	1375	136500
F	137000	1380	137000
F	137500	1385	137500
F	138000	1390	138000
F	138500	1395	138500
F	139000	1400	139000
F	139500	1405	139500
F	140000	1410	140000
F	140500	1415	140500
F	141000	1420	141000
F	141500	1425	141500
F	142000	1430	142000
F	142500	1435	142500
F	143000	1440	143000
F	143500	1445	143500
F	144000	1450	144000
F	144500	1455	144500
F	145000	1460	145000
F	145500	1465	145500
F	146000	1470	146000
F	146500	1475	146500
F	147000	1480	147000
F	147500	1485	147500
F	148000	1490	148000
F	148500	1495	148500
F	149000	1500	149000
F	149500	1505	149500
F	150000	1510	150000
F	150500	1515	150500
F	151000	1520	151000
F	151500	1525	151500
F	152000	1530	152000
F	152500	1535	152500
F	153000	1540	153000
F	153500	1545	153500
F	154000	1550	154000
F	154500	1555	154500
F	155000	1560	155000
F	155500	1565	155500
F	156000	1570	156000
F	156500	1575	156500
F	157000	1580	157000
F	157500	1585	157500
F	158000	1590	158000
F	158500	1595	158500
F	159000	1600	159000
F	159500	1605	159500
F	160000	1610	160000
F	160500	1615	160500
F	161000	1620	161000
F	161500	1625	161500
F	162000	1630	162000
F	162500	1635	162500
F	163000	1640	163000

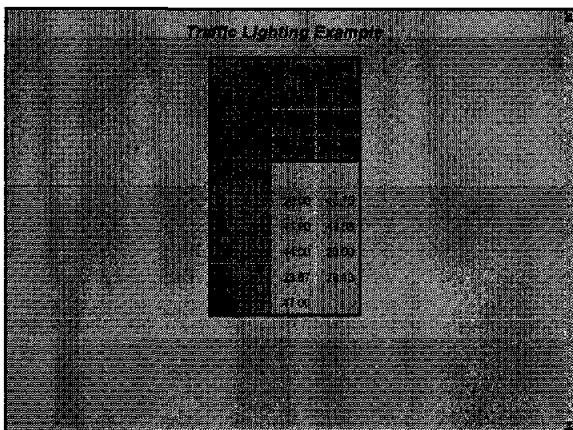
Traffic Lighting

This is a technique that employs styles with formatted values to allow changing the color and presentation of cells as the value changes. Examine the following code.

```

Program Editor  traffic
Command ==>
00001 ods html body="c:\traffic";
00002 ods listing close;
00003
00004 title 'Traffic Lighting Example';
00005 proc format;
00006 value agefat
00007 1-18 = 'xx4DNESE'
00008 19-30 = 'Blue'
00009 31-45 = 'Green'
00010 46-65 = 'Red'
00011 other = 'Gray';
00012 run;
00013
00014 proc tabulate data=sasdemo.sasdemo style={foreground=agefat.};
00015 class status gender / s={foreground=black};
00016 classvar status gender / s={foreground=red};
00017 var age;
00018 table status,gender*age*mean;
00019 run;
00020
00021 ods html close;
00022 ods listing;

```



Hyperlinks in Graphs and Reports

Hyperlinks In Graphs

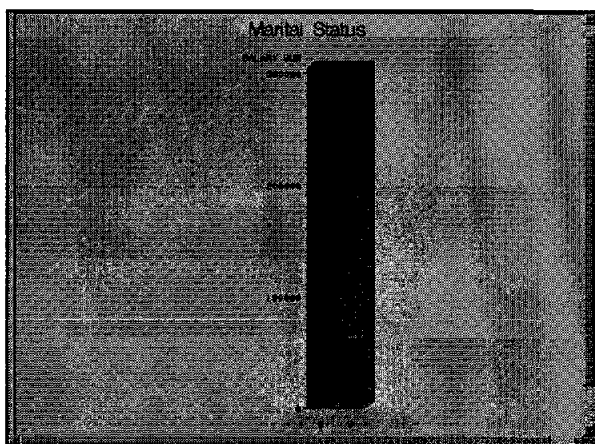
In Version 8 of SAS Software, HTML examples that link to each other are possible. Wouldn't it be great to create a graph and then be able to click on the items in the graph to branch to appropriate detail about those items?

The following code could create that result.

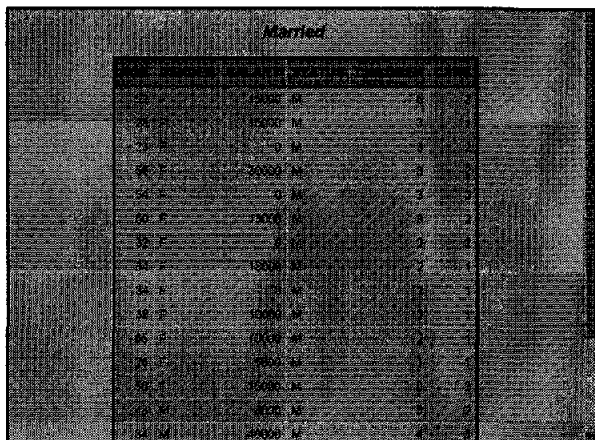
```

Program Editor  graphhtml
Command ==>
00001 libname saved 'd:\sas\data8';
00002 filename odsout 'c:\';
00003 ods listing close;
00004 options reset=global;
00005 data work.demograp;
00006 length linkme $ 40;
00007 set saved.demograp;
00008 if status='S' then linkme = 'href="single.html"';
00009 else if status='M' then linkme = 'href="married.html"';
00010 run;
00011 options device=gif transparency;
00012 ods html body="demograp.html" path=odsout;
00013 title 'Marital Status';
00014 proc gchart data=work.demograp;
00015 vbar3d status / sumvar=salary;
00016 html=linkme;
00017 where status in ('S','M');
00018 run;
00019 quit;
00020
00021 ods html body="single.html" path=odsout;
00022 title 'Singles';
00023 proc print data=work.demograp(drop=linkme) noobs;
00024 where status='S';
00025 run;
00026
00027 ods html body="married.html" path=odsout;
00028 title 'Married';
00029 proc print data=work.demograp(drop=linkme) noobs;
00030 where status='M';
00031 run;
00032 ods html close;
00033 ods listing;
00034

```



Click on the appropriate bars to see the detail.



Singles

AGE	STATUS	SEX	AGE	STATUS	SEX
18-24	D	F	25-34	D	F
25-34	D	M	35-44	D	M
35-44	D	F	45-54	D	F
45-54	D	M	55-64	D	M
55-64	D	F	65-74	D	F
65-74	D	M	75-84	D	M
75-84	D	F	85-94	D	F
85-94	D	M	95-104	D	M
95-104	D	F	105-114	D	F
105-114	D	M	115-124	D	M
115-124	D	F	125-134	D	F
125-134	D	M	135-144	D	M
135-144	D	F	145-154	D	F
145-154	D	M	155-164	D	M
155-164	D	F	165-174	D	F
165-174	D	M	175-184	D	M
175-184	D	F	185-194	D	F
185-194	D	M	195-204	D	M
195-204	D	F	205-214	D	F
205-214	D	M	215-224	D	M
215-224	D	F	225-234	D	F
225-234	D	M	235-244	D	M
235-244	D	F	245-254	D	F
245-254	D	M	255-264	D	M
255-264	D	F	265-274	D	F
265-274	D	M	275-284	D	M
275-284	D	F	285-294	D	F
285-294	D	M	295-304	D	M
295-304	D	F	305-314	D	F
305-314	D	M	315-324	D	M
315-324	D	F	325-334	D	F
325-334	D	M	335-344	D	M
335-344	D	F	345-354	D	F
345-354	D	M	355-364	D	M
355-364	D	F	365-374	D	F
365-374	D	M	375-384	D	M
375-384	D	F	385-394	D	F
385-394	D	M	395-404	D	M
395-404	D	F	405-414	D	F
405-414	D	M	415-424	D	M
415-424	D	F	425-434	D	F
425-434	D	M	435-444	D	M
435-444	D	F	445-454	D	F
445-454	D	M	455-464	D	M
455-464	D	F	465-474	D	F
465-474	D	M	475-484	D	M
475-484	D	F	485-494	D	F
485-494	D	M	495-504	D	M
495-504	D	F	505-514	D	F
505-514	D	M	515-524	D	M
515-524	D	F	525-534	D	F
525-534	D	M	535-544	D	M
535-544	D	F	545-554	D	F
545-554	D	M	555-564	D	M
555-564	D	F	565-574	D	F
565-574	D	M	575-584	D	M
575-584	D	F	585-594	D	F
585-594	D	M	595-604	D	M
595-604	D	F	605-614	D	F
605-614	D	M	615-624	D	M
615-624	D	F	625-634	D	F
625-634	D	M	635-644	D	M
635-644	D	F	645-654	D	F
645-654	D	M	655-664	D	M
655-664	D	F	665-674	D	F
665-674	D	M	675-684	D	M
675-684	D	F	685-694	D	F
685-694	D	M	695-704	D	M
695-704	D	F	705-714	D	F
705-714	D	M	715-724	D	M
715-724	D	F	725-734	D	F
725-734	D	M	735-744	D	M
735-744	D	F	745-754	D	F
745-754	D	M	755-764	D	M
755-764	D	F	765-774	D	F
765-774	D	M	775-784	D	M
775-784	D	F	785-794	D	F
785-794	D	M	795-804	D	M
795-804	D	F	805-814	D	F
805-814	D	M	815-824	D	M
815-824	D	F	825-834	D	F
825-834	D	M	835-844	D	M
835-844	D	F	845-854	D	F
845-854	D	M	855-864	D	M
855-864	D	F	865-874	D	F
865-874	D	M	875-884	D	M
875-884	D	F	885-894	D	F
885-894	D	M	895-904	D	M
895-904	D	F	905-914	D	F
905-914	D	M	915-924	D	M
915-924	D	F	925-934	D	F
925-934	D	M	935-944	D	M
935-944	D	F	945-954	D	F
945-954	D	M	955-964	D	M
955-964	D	F	965-974	D	F
965-974	D	M	975-984	D	M
975-984	D	F	985-994	D	F
985-994	D	M	995-1004	D	M
995-1004	D	F	1005-1014	D	F
1005-1014	D	M	1015-1024	D	M
1015-1024	D	F	1025-1034	D	F
1025-1034	D	M	1035-1044	D	M
1035-1044	D	F	1045-1054	D	F
1045-1054	D	M	1055-1064	D	M
1055-1064	D	F	1065-1074	D	F
1065-1074	D	M	1075-1084	D	M
1075-1084	D	F	1085-1094	D	F
1085-1094	D	M	1095-1104	D	M
1095-1104	D	F	1105-1114	D	F
1105-1114	D	M	1115-1124	D	M
1115-1124	D	F	1125-1134	D	F
1125-1134	D	M	1135-1144	D	M
1135-1144	D	F	1145-1154	D	F
1145-1154	D	M	1155-1164	D	M
1155-1164	D	F	1165-1174	D	F
1165-1174	D	M	1175-1184	D	M
1175-1184	D	F	1185-1194	D	F
1185-1194	D	M	1195-1204	D	M
1195-1204	D	F	1205-1214	D	F
1205-1214	D	M	1215-1224	D	M
1215-1224	D	F	1225-1234	D	F
1225-1234	D	M	1235-1244	D	M
1235-1244	D	F	1245-1254	D	F
1245-1254	D	M	1255-1264	D	M
1255-1264	D	F	1265-1274	D	F
1265-1274	D	M	1275-1284	D	M
1275-1284	D	F	1285-1294	D	F
1285-1294	D	M	1295-1304	D	M
1295-1304	D	F	1305-1314	D	F
1305-1314	D	M	1315-1324	D	M
1315-1324	D	F	1325-1334	D	F
1325-1334	D	M	1335-1344	D	M
1335-1344	D	F	1345-1354	D	F
1345-1354	D	M	1355-1364	D	M
1355-1364	D	F	1365-1374	D	F
1365-1374	D	M	1375-1384	D	M
1375-1384	D	F	1385-1394	D	F
1385-1394	D	M	1395-1404	D	M
1395-1404	D	F	1405-1414	D	F
1405-1414	D	M	1415-1424	D	M
1415-1424	D	F	1425-1434	D	F
1425-1434	D	M	1435-1444	D	M
1435-1444	D	F	1445-1454	D	F
1445-1454	D	M	1455-1464	D	M
1455-1464	D	F	1465-1474	D	F
1465-1474	D	M	1475-1484	D	M
1475-1484	D	F	1485-1494	D	F
1485-1494	D	M	1495-1504	D	M
1495-1504	D	F	1505-1514	D	F
1505-1514	D	M	1515-1524	D	M
1515-1524	D	F	1525-1534	D	F
1525-1534	D	M	1535-1544	D	M
1535-1544	D	F	1545-1554	D	F
1545-1554	D	M	1555-1564	D	M
1555-1564	D	F	1565-1574	D	F
1565-1574	D	M	1575-1584	D	M
1575-1584	D	F	1585-1594	D	F
1585-1594	D	M	1595-1604	D	M
1595-1604	D	F	1605-1614	D	F
1605-1614	D	M	1615-1624	D	M
1615-1624	D	F	1625-1634	D	F
1625-1634	D	M	1635-1644	D	M
1635-1644	D	F	1645-1654	D	F
1645-1654	D	M	1655-1664	D	M
1655-1664	D	F	1665-1674	D	F
1665-1674	D	M	1675-1684	D	M
1675-1684	D	F	1685-1694	D	F
1685-1694	D	M	1695-1704	D	M
1695-1704	D	F	1705-1714	D	F
1705-1714	D	M	1715-1724	D	M
1715-1724	D	F	1725-1734	D	F
1725-1734	D	M	1735-1744	D	M
1735-1744	D	F	1745-1754	D	F
1745-1754	D	M	1755-1764	D	M
1755-1764	D	F	1765-1774	D	F
1765-1774	D	M	1775-1784	D	M
1775-1784	D	F	1785-1794	D	F
1785-1794	D	M	1795-1804	D	M
1795-1804	D	F	1805-1814	D	F
1805-1814	D	M	1815-1824	D	M
1815-1824	D	F	1825-1834	D	F
1825-1834	D	M	1835-1844	D	M
1835-1844	D	F	1845-1854	D	F
1845-1854	D	M	1855-1864	D	M
1855-1864	D	F	1865-1874	D	F
1865-1874	D	M	1875-1884	D	M
1875-1884	D	F	1885-1894	D	F
1885-1894	D	M	1895-1904	D	M
1895-1904	D	F	1905-1914	D	F
1905-1914	D	M	1915-1924	D	M
1915-1924	D	F	1925-1934	D	F
1925-1934	D	M	1935-1944	D	M
1935-1944	D	F	1945-1954	D	F
1945-1954	D	M	1955-1964	D	M
1955-1964	D	F	1965-1974	D	F
1965-1974	D	M	1975-1984	D	M
1975-1984	D	F	1985-1994	D	F
1985-1994	D	M	1995-2004	D	M
1995-2004	D	F	2005-2014	D	F
2005-2014	D	M	2015-2024	D	M
2015-2024	D	F	2025-2034	D	F
2025-2034	D	M	2035-2044	D	M
2035-2044	D	F	2045-2054	D	F
2045-2054	D	M	2055-2064	D	M
2055-2064	D	F	2065-2074	D	F
2065-2074	D	M	2075-2084	D	M
2075-2084	D	F	2085-2094	D	F
2085-2094	D	M	2095-2104	D	M
2095-2104	D	F	2105-2114	D	F
2105-2114	D	M	2115-2124	D	M
2115-2124	D	F	2125-2134	D	F
2125-2134	D	M	2135-2144	D	M
2135-2144	D	F	2145-2154	D	F
2145-2154	D	M	2155-2164	D	M
2155-2164	D	F	2165-2174	D	F
2165-2174	D	M	2175-2184	D	M
2175-2184	D	F	2185-2194	D	F
2185-2194	D	M	2195-2204	D	M
2195-2204	D	F	2205-2214	D	F
2205-2214	D	M	2215-2224	D	M
2215-2224	D	F	2225-2234	D	F
2225-2234	D	M	2235-2244	D	M
2235-2244	D	F	2245-2254	D	F
2245-2254	D	M	2255-2264	D	M
2255-2264	D	F	2265-2274	D	F
2265-2274	D	M	2275-2284	D	M
2275-2284	D	F	2285-2294	D	F
2285-2294	D	M	2295-2304	D	M
2295-2304	D	F	2305-2314	D	F
2305-2314	D	M	2315-2324	D	M
2315-2324	D	F	2325-2334	D	F
2325-2334	D	M	2335-2344	D	M
2335-2344	D	F	2345-2354	D	F
2345-2354	D	M	2355-2364	D	M
2355-2364	D	F	2365-2374		