

Paper 063-2011

Using ODS TAGSETS.HTMLPANEL to Create Quick Dashboards

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ABSTRACT

I like GREPLAY and ANNOTATE... I really do. But there are times when you need to quickly share a draft of your output with a colleague or a client. One quick and fast way to do this is to write your listing or graphics output to an ODS document such as RTF, PDF, HTML etc. But what if you are creating a complex report such as a dashboard? This gets a little more complicated since graphs and tables need to be placed in specific locations. This presentation will show ways to send your dashboard to an ODS conduit called TAGSETS.HTMLPANEL. This ODS option allows you to quickly create compartmentalized output without having to define or manage the details of your dashboard.

GREPLAY AND ANNOTATE

GREPLAY

GREPLAY is a SAS® mechanism which can be used to collect graph IDs. The programmer must define a pixel grid. Then the programmer can assign the graphs, by their ID, into the pixel grid for display.

ANNOTATE

ANNOTATE is a SAS tool which allows you to write graphic output with a variety of attributes. It can be used in a variety of ways depending on your needs and preferences. ANNOTATE allows you to draw figures, control text type, size, strength, colors, location and many other attributes associated with your output.

This is an example of the power of ANNOTATE. In figure 1 ANNOTATE is used to write the counts above each bar.

Figure 1.

Counts by: Q3C_R

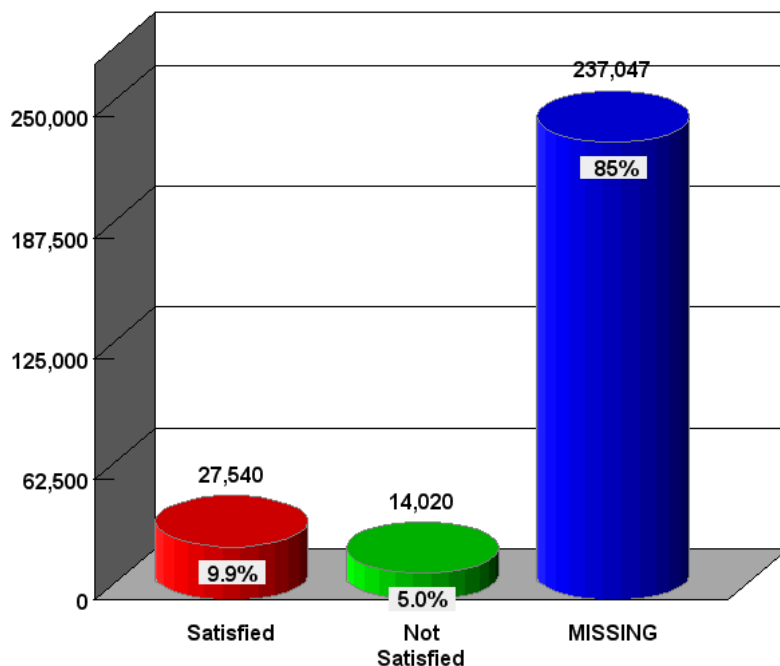


Figure 1. An Example of Using ANNOTATE

Here is SAS code to create an ANNOTATE dataset to print the counts for each bar in figure 1.

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```

/*****
/* Create an ANNOTATE dataset for data Table */
*****/
data ANNO_DATA1; /* <- your ANNOTATE dataset creation */
  set out_file1;
  length function text $12 midpoint 8. ;
  retain xsys ysys '2'
         when 'a'
         position '8';
  size=1.2;
  function='label';
  cbox='grayee';
  midpoint=&in_var1.;
  y=count;
  text=put(percent,percent6.3);
run;

/*****
/* Graph display for the data */
*****/
%let max_val1=%get_max_ubd(&temp_max_dat1.);
%put max_val1 = &max_val1.;
%let max_int1=%sysevalf(&max_val1./4,integer);
title1 j=1 "Counts by: %upcase(&in_var1.)" ;
axis1 label=none
      order=(0 to &max_val1. by &max_int1.)
      major=(h=-2 cells) minor=none;
axis2 label=none split=' ';

proc gchart data=out_file1 ;
  vbar3d &in_var1. /
    anno=ANNO_DATA1 /* use the ANNOTATE dataset in your graph */
    discrete
    type=sum
    outside=sum
    sumvar=count
    subgroup=&in_var1.
    shape=cylinder
    autoref
    raxis=axis1
    maxis=axis2
    coutline=gray
    nolegend
    name='vbar_d';
run;

```

COMBINING GREPLAY AND ANNOTATE

The following example shows how to combine GREPLAY and ANNOTATE to create a simple dashboard.

Figure 2.

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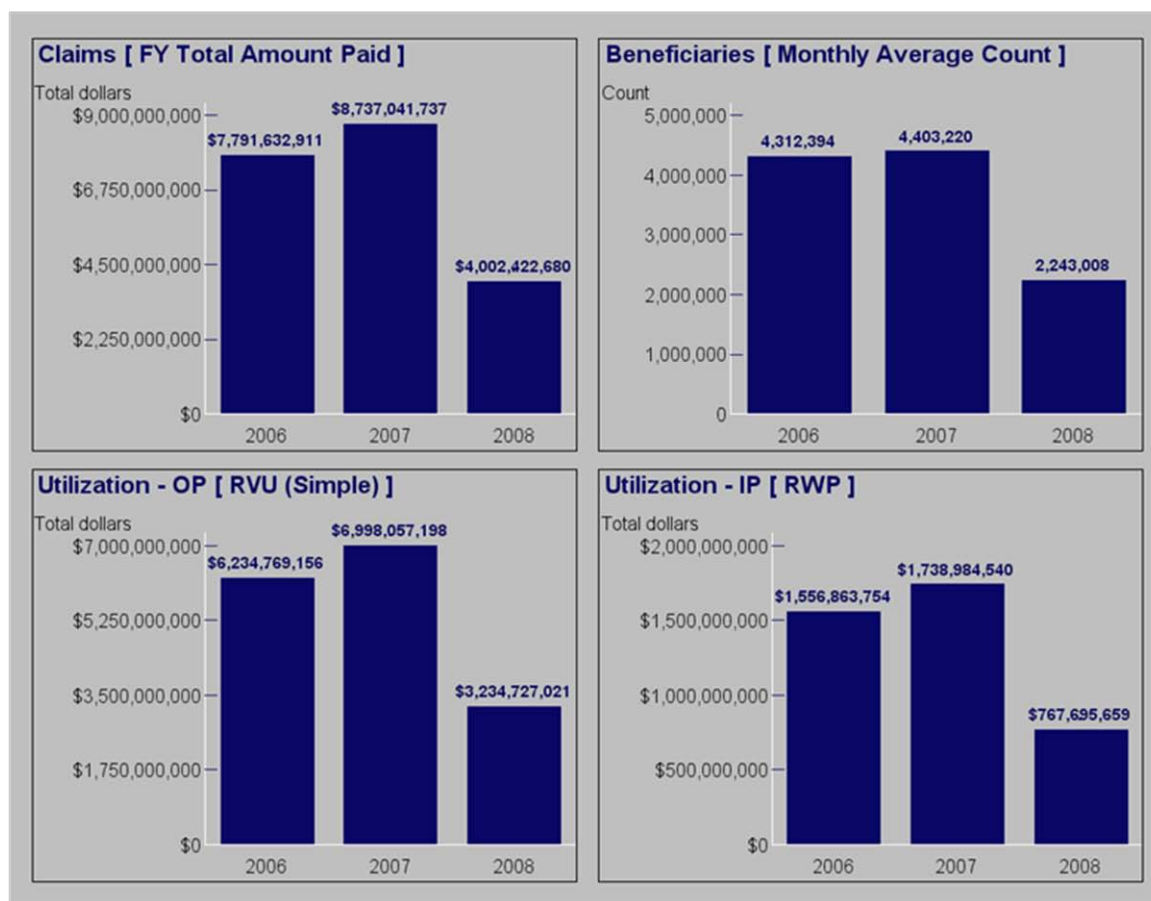


Figure 2. An Example of Combining GREPLAY and ANNOTATE

Here is the main code used to create the ANNOTATE dataset and the GREPLAY mechanism used to output the chart.

```

/* ANNOTATE the value labels on the bars. */
proc sort data=&dsn. out=a_anno_temp;
by &regvar. &byvar.;
run;

data A_ANNO_&REGION.;
set a_anno_temp;
by &regvar. &byvar.;
length function color midpoint $8 text $30;
retain xsys ysys '2' when 'a';
function='label'; size=1.5; color='VIB'; position='2'; style='"arial/bold"';
text=trim(left(put(&var.,&varfmt..)));
midpoint=&byvar.; y=&var.; output;
run;

ODS LISTING CLOSE;
ODS HTML path=odsout body="&top_name..htm" (title="System Entry Dashboard")
style=sysentry;

goptions xpixels=1000 ypixels=775 gunit=pct htitle=5.5 ftitle="arial/bold"
htext=3.2 ftext="arial";
goptions nodisplay;
goptions cback=LIGGR;
GOPTIONS DEVICE=gif;
goptions noborder;

```

Using ODS TAGSETS.HTMLPANEL to Create Quick Dashboards

```

ODS LISTING CLOSE;
ODS HTML path=odsout body="&top_name..htm"
(title="System Entry Graphics")
style=minimal
gtitle nogfootnote
;
goptions cback=grayfe;
goptions ctext=black;

pattern1 v=s color=VIB;
axis1 c=white value=(c=black h=4.5) label=(h=4.5 j=1 c=black
"&reg_y_text_&region..")
order=(0 to &&max_val_&region... by &&max_int_val_&region..) minor=none
major=(c=stb height=-2 cells) offset=(0,3);
axis2 c=white label=none value=(c=black h=4.5) ;

proc gchart data=&dsn. ;
vbar &byvar. /
anno=A ANNO
discrete
type=sum
sumvar=&var.
outline=same
noframe
width=40
space=10
raxis=axis1
maxis=axis2
des=""
name="&name"
;
run;

%end; /* end region loop */

goptions display;

proc GREPLAY tc=tempcat nofs igout=gseg;
tdef sysentry des='System_Entry'

1/llx = 2 llx = 51
ulx = 2 uly = 97
urx =49 ury = 97
lrx =49 lry = 51
color=black

2/llx =51 llx = 51
ulx =51 uly = 97
urx =98 ury = 97
lrx =98 lry = 51
color=black

3/llx = 2 llx = 3
ulx = 2 uly = 49
urx =49 ury = 49
lrx =49 lry = 3
color=black

4/llx =51 llx = 3
ulx =51 uly = 49
urx =98 ury = 49
lrx =98 lry = 3

```

Using ODS TAGSETS.HTMLPANEL to Create Quick Dashboards

```

        color=black
    ;

    template=sysentry;
    treplay
    1:%scan(&names.,1)
    2:%scan(&names.,2)
    3:%scan(&names.,3)
    4:%scan(&names.,4)
    des="" name="&top_name" ;
run; quit;

ODS HTML CLOSE;
ODS LISTING;

```

MORE ON GREPLAY AND ANNOTATE

It goes without saying that when you combine GREPLAY and ANNOTATE you can create camera-ready, publishable results. The effort to render such a product can take a considerable investment in resources, i.e., time for research, finding the right utility (if it exists), presentation organization, etc. Many times programmers can quickly and easily produce simple graphs and reports. But to produce a dashboard of information for clients or business users can be quite an undertaking. The final code can become complex to say the least. Again, I'm not against GREPLAY and ANNOTATE.

But... what if there was a utility available to you that could produce a trivial semblance of your dashboard? And what if it only took a few minutes to construct your dashboard?

Well, there's ODS TAGSETS.HTMLPANEL.

ODS TAGSETS.HTMLPANEL

EXAMPLE

Suppose we want to produce a set of graphs by plotting the following points from the origin.

Figure 3.

```

Chart: (X, Y)

1: (0, 0)
2: (1, 0)
3: (1, 0.2)
4: (1, 0.4)
5: (1, 0.6)
6: (1, 0.8)
7: (1, 1)
8: (0.8, 1)
9: (0.6, 1)
10: (0.4, 1)
11: (0.2, 1)
12: (0, 1)

```

Figure 3. The Data to be Plotted

The plotted points on a Cartesian plane would look as follows:

Figure 4.

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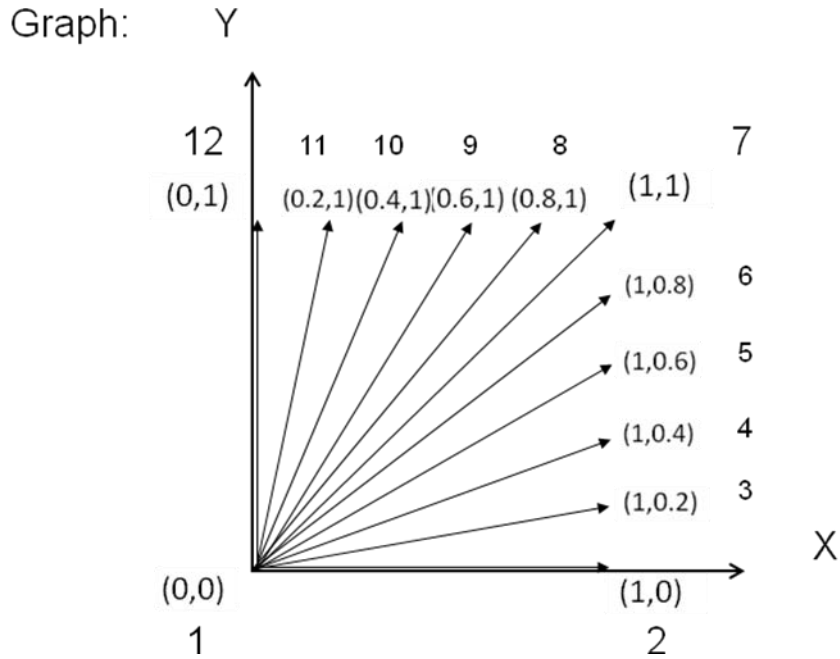
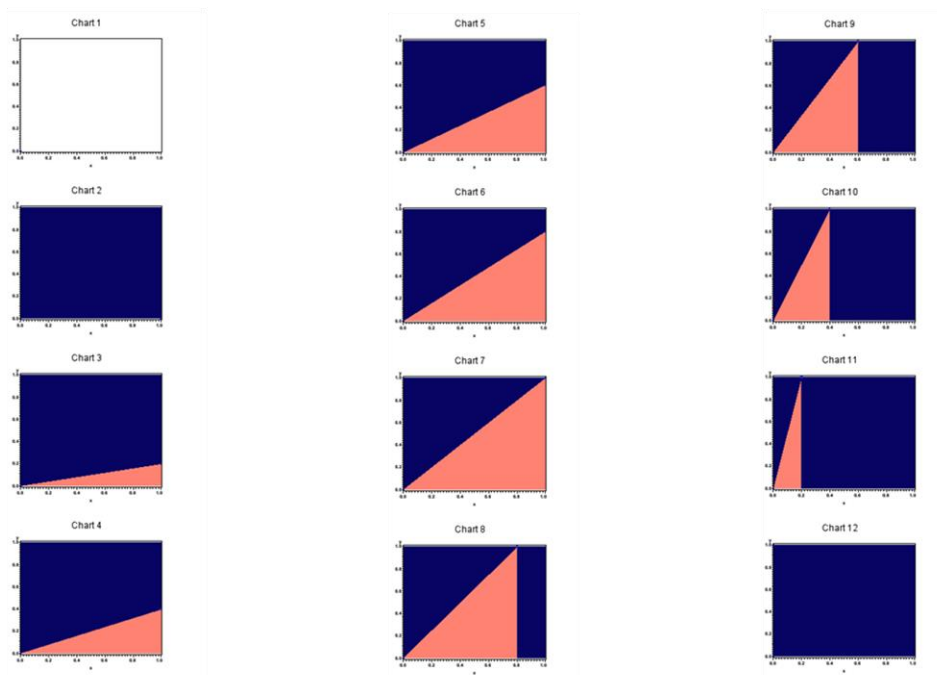


Figure 4. The Data Plotted

Plotting these points with PROC PLOT would look similar to Display 1. Using ODS HTML we would get the following output in a single stream column format in an HTML file. This is shown in 3 columns in for convenience and space. Blue shading is used as a background. Pink shading is used to show the area under the graph.

Display 1.



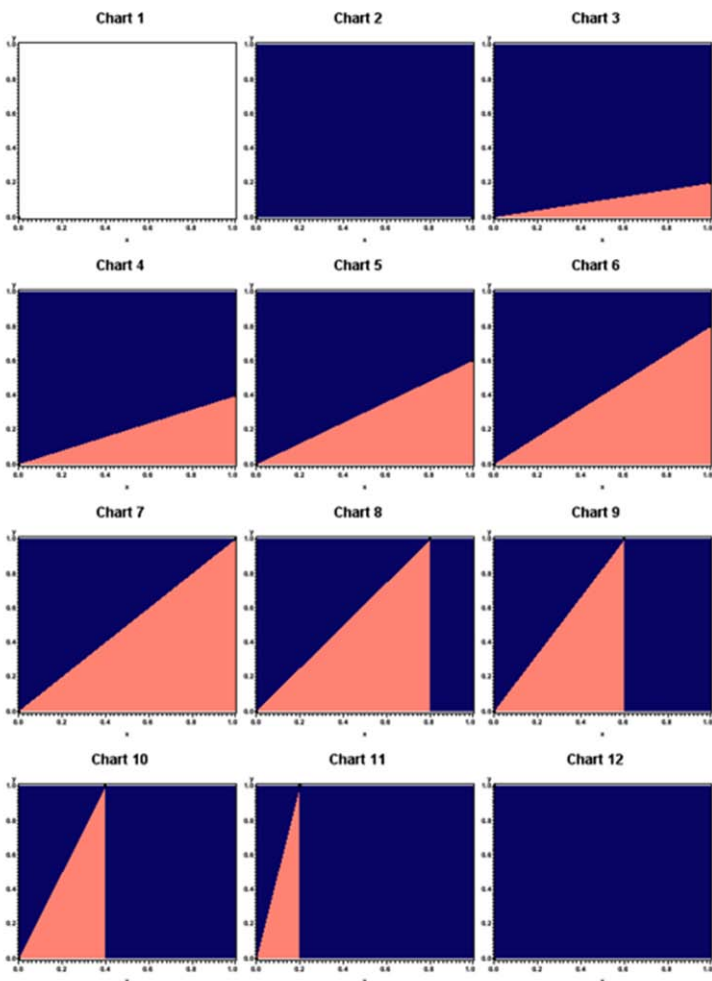
Display 1. The Output Generated from ODS HTML

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USING ODS TAGSETS.HTMLPANEL – ROW MAJOR OUTPUT

What if the order of the output mattered? Suppose we want the output to be in row major order with 4 rows by 3 columns? The code for this mechanism can be found in the Source Code appendix. The output would look like the following:

Display 2.



Display 2. Output Generated from ODS TAGSETS.HTMLPANEL in Row Major Order

USING ODS TAGSETS.HTMLPANEL – COLUMN MAJOR OUTPUT

By simply flip-flopping row_panel for column_panel in the code we get column major output. This code modification from the source code is shown as follows:

```
/* Open the row panel */
ods tagsets.htmlpanel event=row_panel(start);
/* Open the column panel */
ods tagsets.htmlpanel event=column_panel(start);

%do i = 1 %to 12;

  %if &i=4 or &i=7 or &i=10 %then
  %do;
    ods tagsets.htmlpanel event=column_panel(finish);
    ods tagsets.htmlpanel event=column_panel(start);
  %end;
```

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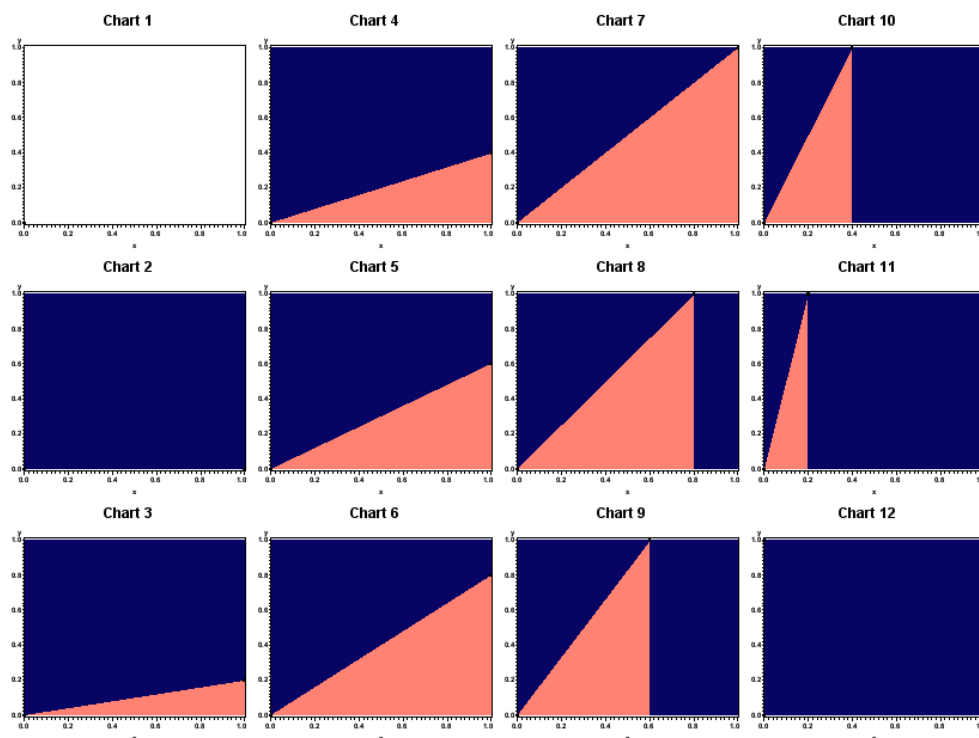
```
proc gplot data=test&i;
  Title "Chart &i.";
  plot y*x/ vaxis=axis1 haxis=axis1 %if &i ne 1 %then %do; areas=3 %end;;
run;
quit;

%end; /* i */

/* Close the panels */
ods tagsets.htmlpanel event=column_panel(finish);
ods tagsets.htmlpanel event=row_panel(finish);
```

The output for this code modification follows here:

Display 3.



Display 3. Output Generated from ODS TAGSETS.HTMLPANEL in Column Major Order

ADVANTAGES AND DISADVANTAGES OF USING ODS TAGSETS.HTMLPANEL

Some disadvantages are that ...

- (1) ... you do not have pinpoint control over output location as you do with GREPLAY,
- (2) ... you do not have control over text styles and fonts, i.e., you will still need to set up your style template or an ANNOTATE if you want specific fonts, styles, etc.
- (3) ... the ODS TAGSET.HTMLPANEL is not meant for enterprise level dashboards.

Big advantages are that ...

- (1) ... you can quickly produce nice readable HTML which contains combinations of graphs, reports, and printed tables of any kind or as complicated as you want them.
- (2) ... you do not need to manage any PROCs for output, i.e., keeping track of aliases for collecting into GREPLAY.
- (3) ... if you need to go back to trivial stream output just comment out your ODS TAGSETS.HTMLPANEL statement. This mechanism does not lock you in structurally, programmatically or graphically (whereas GREPLAY does).

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MORE EXAMPLES OF ODS TAGSETS.HTMLPANEL

Here is an example of output generated from ODS TAGSETS.HTMLPANEL mixing PROC GCHART with PROC PRINT.

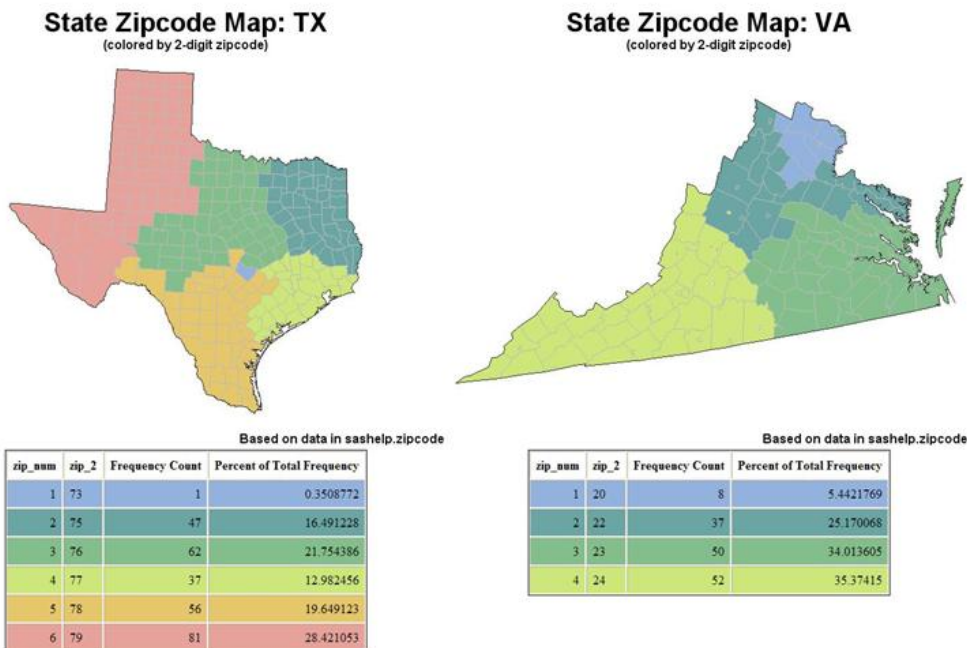
Display 4.



Display 4. Output Mixing PROC GCHART and PROC PRINT

Here is another example of output generated from ODS TAGSETS.HTMLPANEL mixing PROC GMAP with PROC PRINT.

Display 5.



Display 5. Output Mixing PROC GMAP and PROC PRINT

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CONCLUSION

In the end you may have to use GREPLAY and/or ANNOTATE for final publishable drafts. But as a developer you now have a way to quickly mock-up a version of a dashboard report. Even if the dashboard concept is complex in nature ODS TAGSETS.HTMLPANEL allows you the flexibility to throw together a quick mock-up for your clients or colleagues. And in the end that's what everybody wants first... a quick mock-up.

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

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Source Code Sample

```
/* Example Code - Row Major Graph Output */
options nocenter;

%macro stream_graphs;
  data test1;
    retain x y 0;
    output;
    output;
  run;

  data test2;
    retain x y 0;
    output;
    x = 1;
    y = 0;
    output;
  run;

  data test3;
    retain x y 0;
    output;
    x = 1;
    y = .2;
    output;
  run;

  data test4;
    retain x y 0;
    output;
    x = 1;
    y = .4;
    output;
  run;

  data test5;
    retain x y 0;
    output;
    x = 1;
    y = .6;
    output;
  run;

  data test6;
    retain x y 0;
    output;
    x = 1;
    y = .8;
    output;
  run;

  data test7;
    retain x y 0;
    output;
    x = 1;
    y = 1;
    output;
  run;

  data test8;
    retain x y 0;
```

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```

output;
x = .8;
y = 1;
output;
run;

data test9;
retain x y 0;
output;
x = .6;
y = 1;
output;
run;

data test10;
retain x y 0;
output;
x = .4;
y = 1;
output;
run;

data test11;
retain x y 0;
output;
x = .2;
y = 1;
output;
run;

data test12;
retain x y 0;
output;
x = 0;
y = 1;
output;
run;

ods listing close;
ods html path="." gpath="." file="stream_graphs.html";
goptions xpixels=200 ypixels=200;
GOPTIONS ftitle="arial/bold" ftext="arial/bold" gunit=pct htitle=6.0 htext=3 ;

ods tagsets.htmlpanel path="." (url=none) file="Stream_Row_4x3.htm" (title="Stream
Graphs Row Major (4 x 3)") style=minimal;
ods usegopt;

axis1 order=(0 to 1 by .2);
symbol1 interpol=join value=dot;
pattern1 v=solid color=salmon;
pattern2 v=solid color=vib;

/* Open the column panel */
ods tagsets.htmlpanel event=column_panel(start);
/* Open the row panel */
ods tagsets.htmlpanel event=row_panel(start);

%do i = 1 %to 12;

  %if &i=4 or &i=7 or &i=10 %then
  %do;
    ods tagsets.htmlpanel event=row_panel(finish);
    ods tagsets.htmlpanel event=row_panel(start);
  %end;
%end;

```

Using ODS TAGSETS.HTMLPANEL to Create Quick Dashboards

```
%end;

proc gplot data=test&i;
  Title "Chart &i.";
  plot y*x/ vaxis=axis1 haxis=axis1 %if &i ne 1 %then %do; areas=3 %end;;
run;
quit;

%end; /* i */

/* Close the panels */
ods tagsets.htmlpanel event=row_panel(finish);
ods tagsets.htmlpanel event=column_panel(finish);

/* close HTML */
ods html close;
ods listing;

%mend stream_graphs;

%stream_graphs;
```