

Combining Reports with Graphs using ODS

Sanjay Sathyanarayan
Consulting
SAS Institute (Canada) Inc.
April 2, 2004

Challenges

- How to simultaneously create Reports and Graphs
- How to render content via html, PDF
- How to work with graph complexities, such as Overlays, Annotation
- How to reduce manual intervention

Approach

- Report creation – Selecting the right procedure (Report, Tabulate)
- Graph – Selecting the right procedure (Gchart, Gplot, Annotate)
- Transform Data into a structure that is suitable for reports and graphs.
- Document Framework – A design that is flexible, re-useable, automated
- Publishing – Content delivery (Information Portal)
 - Web - html
 - Paper - PDF

Using Templates

- Consistent look and feel
- Define document layout

```
proc template;
```

```
    /* The new style is named MYSTYLE */
```

```
    define style mystyle / store=graph.template;
```

```
    /* It is based upon the existing style PRINTER */
```

```
    parent=styles.printer;
```

```
    /* The RIGHTMARGIN is set to 5inches to make room for the graph */
```

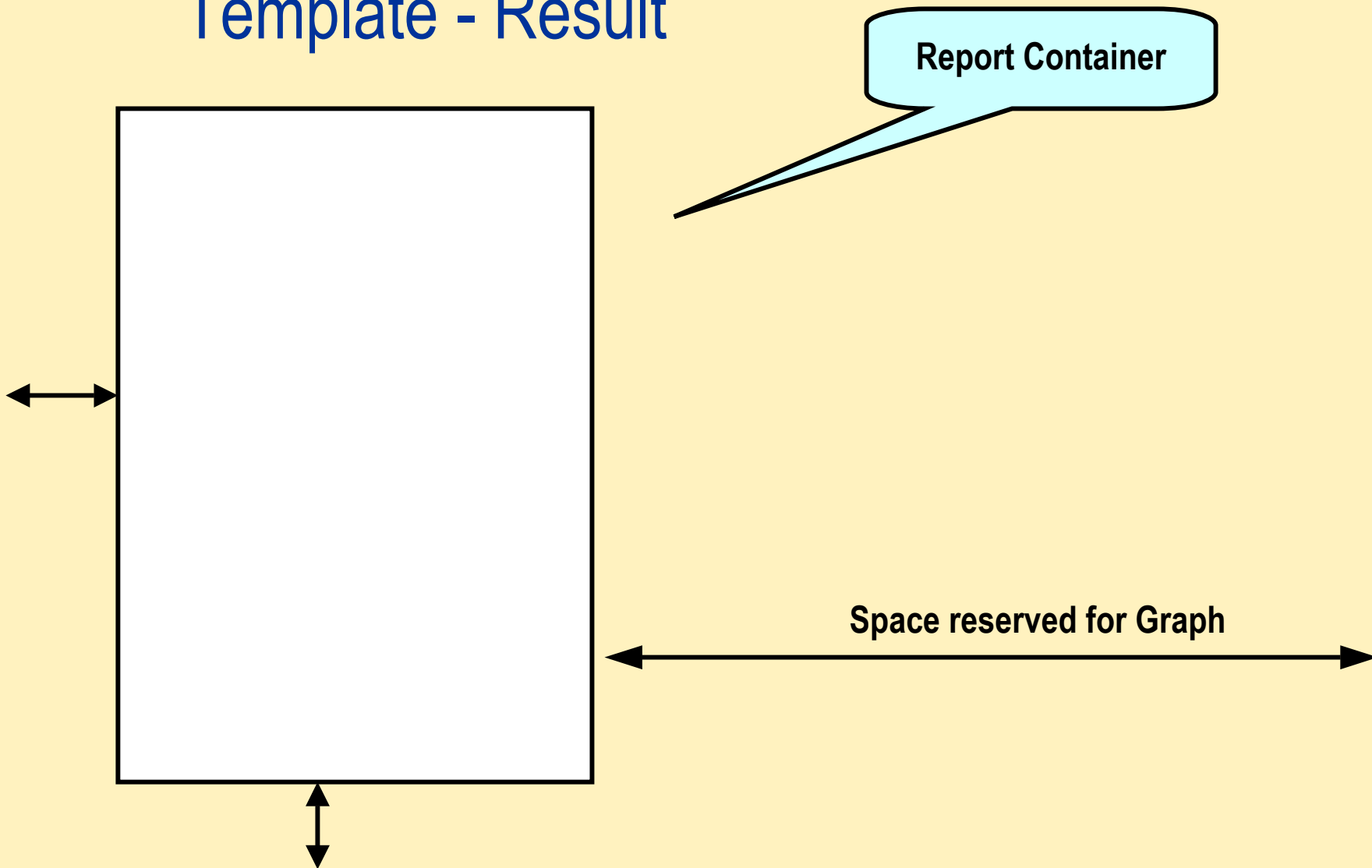
```
    style body from container / topmargin=0.50 IN leftmargin=0.25 IN
```

```
        bottommargin=0.05 IN          rightmargin=5 IN;
```

```
    style table / frame=box;
```

```
end;  
run;
```

Template - Result



Report Creation

```
/* Macro for ODS pdf */
```

```
%ods_document_open(docType=PDF, style=mystyle,  
outFile="C:\temp\myODSOut.pdf");
```

```
proc report data=sashelp.prdsale nowd ;  
  where country='CANADA' and region='EAST' and product='TABLE' and  
  actual > 450;
```

```
  columns product prodtype actual;
```

```
run;
```

ODS – Encapsulate default settings

```
%macro ods_document_open(  
docType = PDF      /* document type */  
style      =      /* style template */  
outFile    =      /* output file */  
odsOpt     =      /* ODS options */  
toc        = Y     /* TOC Y|A */  
);
```

```
ods listing close;  
ods &docType file=&outFile style=&style  
%if %upcase(&toc) EQ N %then %do;  
notoc;  
%end ;
```

```
%if %sysfunc(dequote(&odsOpt)) NE %str() %then %do;  
ods &docType %sysfunc(dequote(&odsOpt));  
%end;
```

```
/* PDF color device for chart rendering */  
goptions device = pdfc;  
%mend ods_document_open;
```

Report Creation - Result

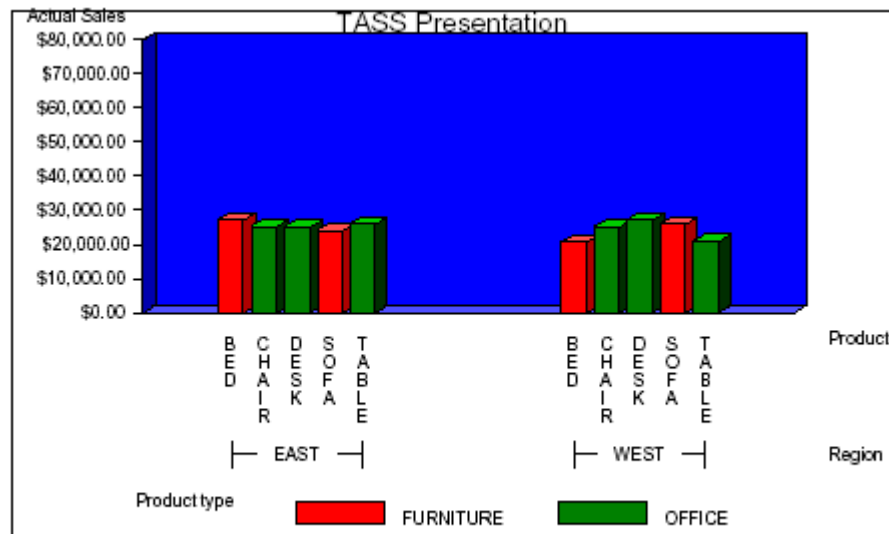
Product	Product type	Actual Sales
TABLE	OFFICE	\$688.00
TABLE	OFFICE	\$544.00
TABLE	OFFICE	\$954.00
TABLE	OFFICE	\$829.00
TABLE	OFFICE	\$464.00
TABLE	OFFICE	\$968.00
TABLE	OFFICE	\$842.00
TABLE	OFFICE	\$721.00
TABLE	OFFICE	\$966.00
TABLE	OFFICE	\$506.00
TABLE	OFFICE	\$585.00
TABLE	OFFICE	\$634.00
TABLE	OFFICE	\$662.00
TABLE	OFFICE	\$783.00
TABLE	OFFICE	\$786.00
TABLE	OFFICE	\$710.00
TABLE	OFFICE	\$950.00
TABLE	OFFICE	\$515.00
TABLE	OFFICE	\$570.00
TABLE	OFFICE	\$524.00
TABLE	OFFICE	\$789.00
TABLE	OFFICE	\$551.00
TABLE	OFFICE	\$554.00
TABLE	OFFICE	\$585.00
TABLE	OFFICE	\$629.00
TABLE	OFFICE	\$533.00
TABLE	OFFICE	\$882.00
TABLE	OFFICE	\$790.00
TABLE	OFFICE	\$600.00
TABLE	OFFICE	\$488.00
TABLE	OFFICE	\$457.00

Graph Creation

```
%ginit;  
/* Axis definition */  
axis1 offset=(5) major=none LABEL=(angle=0 "Product");  
axis2 order=0 to 80000 by 10000 offset=(0,0) minor=none  
label=(angle=90 "Actual Sales" h=3);  
  
/* Coordinates - Graph */  
goptions htext=.10 IN  
        hsize= 5 IN vsize = 3 IN  
        horigin = 5 IN vorigin = 1.0 IN  
        cback=white gunit=border;  
  
proc gchart data=sashelp.prdsale (where=(country='CANADA'));  
note h=1 lspace=.05 j=center "TASS Presentation";  
VBAR3D product/ GROUP=region SUBGROUP=prodtype  
SUMVAR=actual discrete  
maxis=axis1 raxis=axis2 width=3 space=0 legend=legend1  
cframe=blue;  
run;  
quit;  
/* Close ODS */  
%ods_document_close;
```

Result - Combined

Product	Product type	Actual Sales
TABLE	OFFICE	\$688.00
TABLE	OFFICE	\$544.00
TABLE	OFFICE	\$954.00
TABLE	OFFICE	\$829.00
TABLE	OFFICE	\$464.00
TABLE	OFFICE	\$968.00
TABLE	OFFICE	\$842.00
TABLE	OFFICE	\$721.00
TABLE	OFFICE	\$966.00
TABLE	OFFICE	\$506.00
TABLE	OFFICE	\$585.00
TABLE	OFFICE	\$634.00
TABLE	OFFICE	\$662.00
TABLE	OFFICE	\$783.00
TABLE	OFFICE	\$786.00
TABLE	OFFICE	\$710.00
TABLE	OFFICE	\$950.00
TABLE	OFFICE	\$515.00
TABLE	OFFICE	\$570.00
TABLE	OFFICE	\$524.00
TABLE	OFFICE	\$789.00
TABLE	OFFICE	\$551.00
TABLE	OFFICE	\$554.00
TABLE	OFFICE	\$585.00
TABLE	OFFICE	\$629.00
TABLE	OFFICE	\$533.00
TABLE	OFFICE	\$882.00
TABLE	OFFICE	\$790.00
TABLE	OFFICE	\$600.00
TABLE	OFFICE	\$488.00
TABLE	OFFICE	\$457.00



Key points

- Combining graphs and reports is possible with the ODS framework.
- Ensure consistent content delivery by using templates, global settings ([goptions](#)).
- Design a document framework that is flexible and re-useable.
- Leverage ODS functionality to deliver content.

How to learn more

- Instructor based training
<http://support.sas.com/training/canada/>

- Upcoming Courses - Toronto
 1. 21 Apr 2004 - Advanced Output Delivery System Topics (One day)
 2. 27 Apr 2004 - SAS Color Graphics (3 days) Toronto

Live Web Courses

- Information -
<http://www.sas.com/apps/wtraining2/trainsched.jsp?sort=date&oc=lw&ctry=us>
- Upcoming Courses
 1. Advanced ODS: Customizing Style Templates (1:00 PM - 4:30 PM EDT) 05 Apr 2004
 2. Customizing Output from the REPORT Procedure with ODS (1:00 PM - 4:00 PM EDT) 18 May 2004