

COMBINING ODS GRAPHICS OUTPUT

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ODS GRAPHICS

1980s: SAS/Graph

- PROC GPLOT, PROC GCHART

2008: ODS Graphics

- PROC SGPLOT, PROC SGPANEL

ODS Graphics

- Better looking
- New capabilities
- Included in BASE SAS



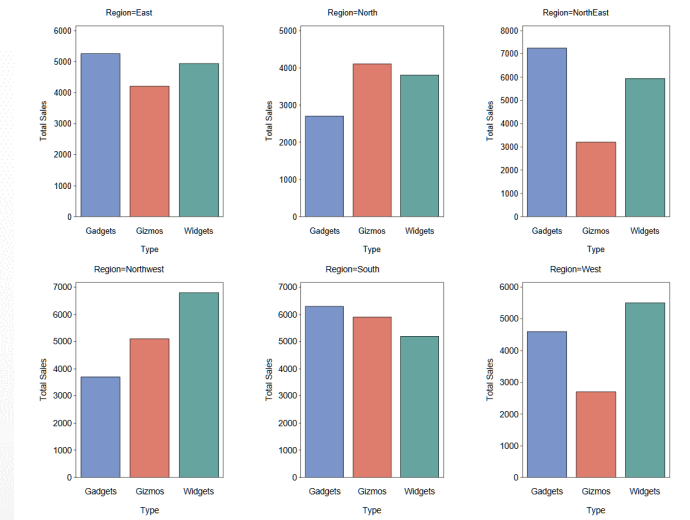
ODS GRAPHICS DOWNSIDES

No equivalent to PROC GREPLAY

- PROC SGPANEL: limited to same chart type
- ODS LAYOUT: limited to PDF

This paper has a workaround!

- Two, actually



COMBINING ODS GRAPHICS

Create graphics image files



Use PROC REPORT to display the graphic images



GRAPHIC IMAGE FILES

Step 1: Use the GPATH option of the ODS LISTING statement:

```
/*Use ODS LISTING to create graphic output files*/  
ods listing gpath("&png_dest" style=Pearl dpi=300;
```

Step 2: Use the OUTPUTFMT option of the ODS GRAPHICS statement

```
ods graphics on / reset=index width=8.5cm  
outputfmt=png imagename='img1';
```



GRAPHIC IMAGE FILES



Step 3: Create the graphics!

```
title 'Distribution of Blood Pressure';  
proc sgplot data=sashelp.heart;  
...  
run;
```

- Step 3a: Use a new imagename to distinguish subsequent graphics

```
ods graphics on / reset=index imagename='img2';
```

```
title1 "Treatment Time Line by Patient";  
proc sgplot data=trt;  
...  
run;
```

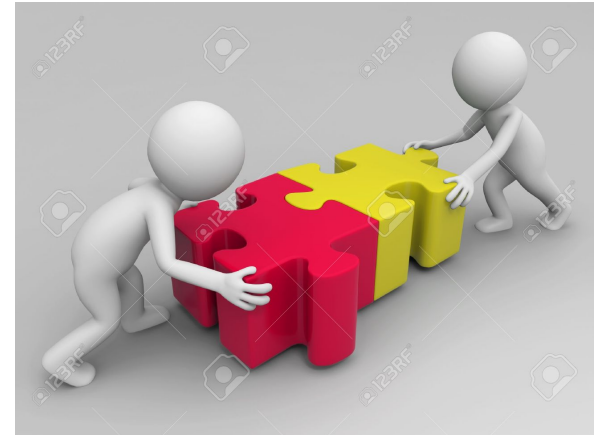
COMBINING IMAGES

Have: 4 graphic image files

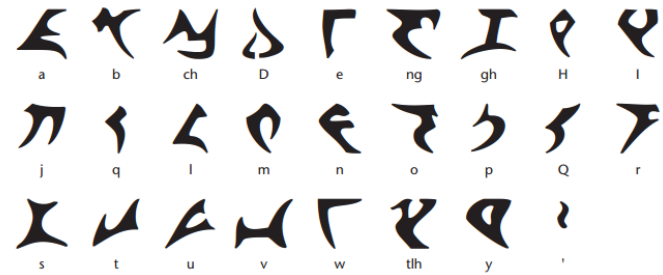
Want: A single image composed of all 4

Doable with some ODS wizardry

- PREIMAGE option in an ODS inline formatting statement



COMBINING IMAGES



Step 1: Create a dataset with ODS inline formatting statements

- Variables correspond with columns in the combined output
- Records correspond with rows

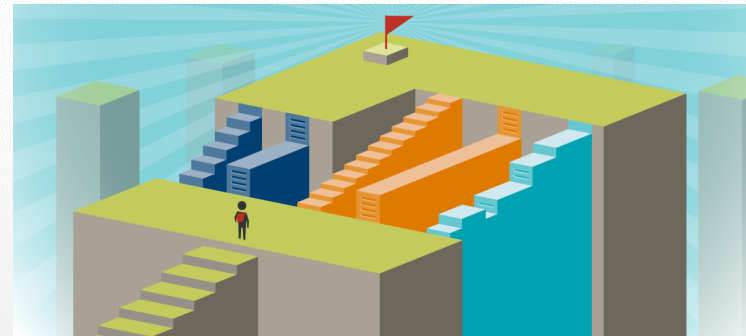
```
data combine;  
  length c1 c2 $200;  
  c1='^S={width=8.5cm just=center preimage="&png_dest\img1.png"}';  
  c2='^S={width=8.5cm just=center preimage="&png_dest\img2.png"}';  
  output;  
  c1='^S={width=8.5cm just=center preimage="&png_dest\img3.png"}';  
  c2='^S={width=8.5cm just=center preimage="&png_dest\img4.png"}';  
  output;  
run;
```

COMBINING IMAGES

Step 2: Use the data in PROC REPORT

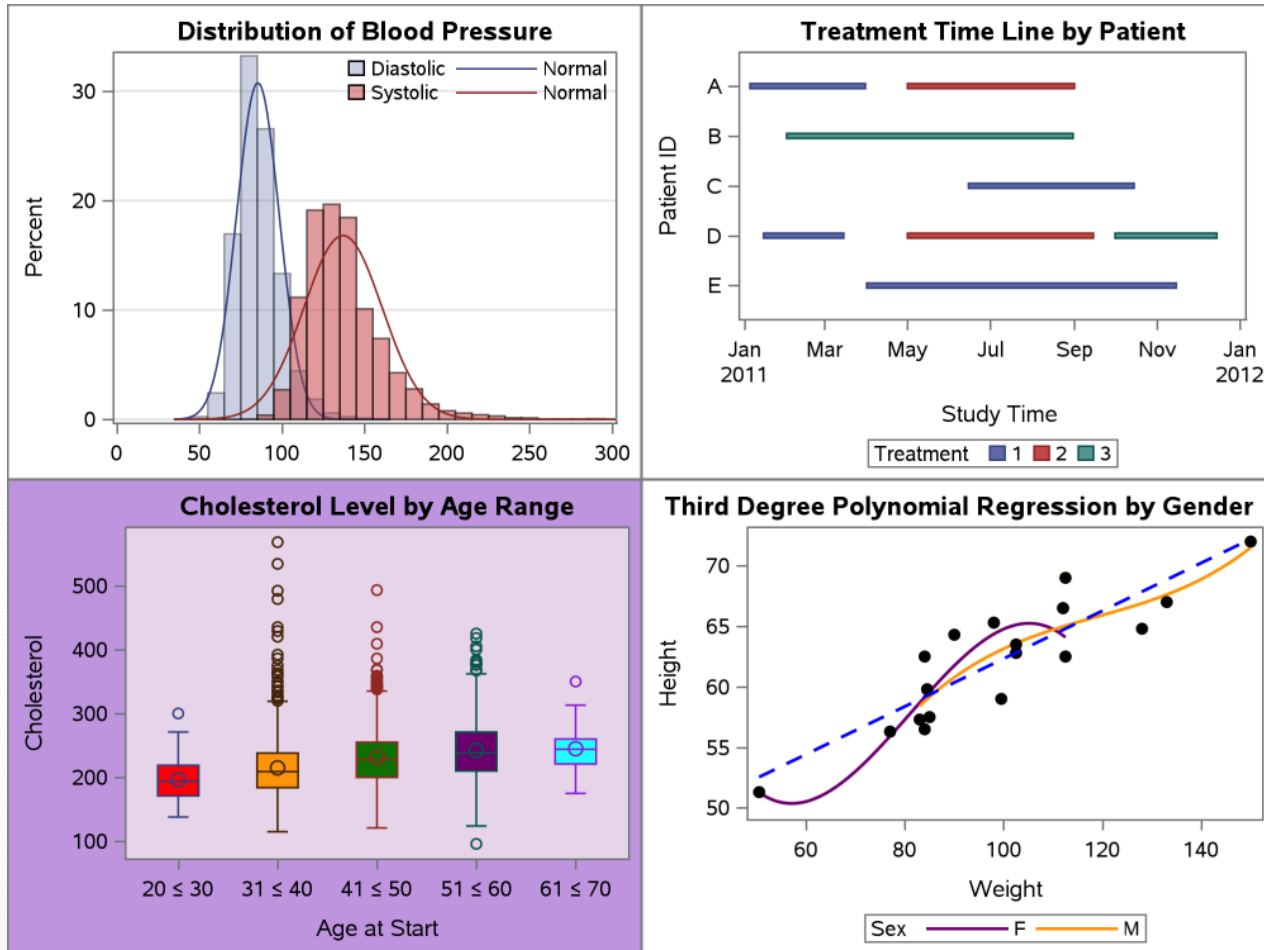
- Include ODS options for no borders, no spacing between cells
- No column headings

```
proc report data=combine nowindows  
  style=[rules=none frame=void cellpadding=0];  
  columns c1 c2;  
  define c1-c2 / display ' ';  
run;
```



RESULT:

Four Charts Combined Using PROC REPORT



Programs for individual charts available from:

https://support.sas.com/sassamples/graphgallery/PROC_SGPlot.html

PROS AND CONS



Pros

- Easily extendible to more rows, columns
- Works with Graphic Output Files from SAS/Graph, other sources
- Fairly simple

Compared to PROC GREPLAY!

Cons

- Images must be PNG, GIF or JPEG
- Columns must be the same size

ALTERNATIVE



Use INCLUDEPICTURE fields in Word

Pros

- Also works with vector graphics (EMF)
- More flexible, e.g. merge cells

Cons

- Restricted to RTF output
- Requires post-processing
- Complicated specification

COMBINING GRAPHS

PNG files, POSTIMAGE formatting

- Relatively simple, usually adequate

INCLUDEPICTURE fields

- Somewhat more complicated
- Somewhat more flexible

PROC GREPLAY

- Most complicated
- Most flexible
- Requires SAS/Graph license



THANK YOU FOR YOUR ATTENTION!

Questions?

