SAS® ODS Graphics Designer – The Next Step in Amazing Data Visualization

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Introduction

As part of my job at the Hospital for Sick Children, I am required to regularly generate a variety of high-quality graphs for a wide variety of users based on any number of variables, data types, and file types. I need something within SAS® that will allow me flexibility to customise the graph(s) but at the same time allow me to maximise my efficiency; this is where ODS Graphics Designer comes into play. ODS Graphics Designer is more flexible and allows more complexities than Graph'n'Go, but is not nearly as complicated (and therefore less powerful) as JMP or Enterprise Guide.

Accessing ODS Graphics Designer

ODS Graphics designer can be accessed either by typing *%SGDESIGN;* in the base SAS Editor, or by selecting it in the TOOLS menu
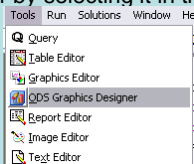
Once the designer is open you will see three different "sections" – PLOT LAYERS, INSETS and the GRAPH GALLERY
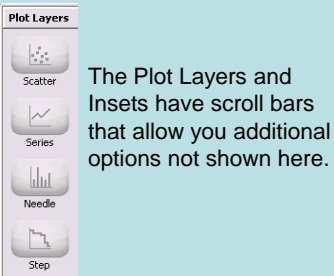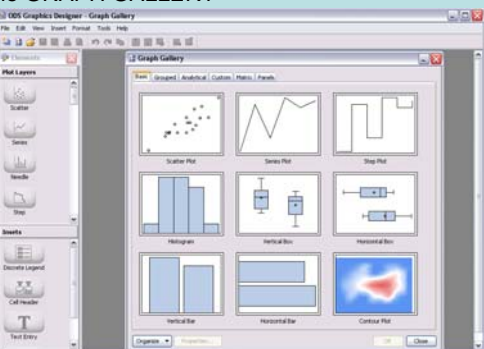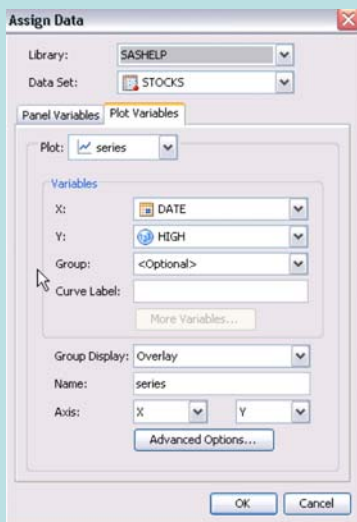

The Plot Layers and Insets have scroll bars that allow you additional options not shown here.
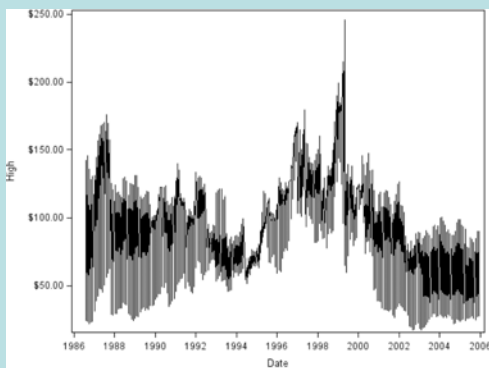
Basic Graphs

There are 37 different types of graphs available in ODS Graphics Designer; a few are reviewed in my paper. Here however I'd like to focus on some key features and showcase the power of this little-known SAS® feature.

By filling in the options as I have done above and clicking OK, the graph shown below is created.


Talk about easy, and a great time-saver – you can now generate multiple graphs just by a few simple mouse clicks!
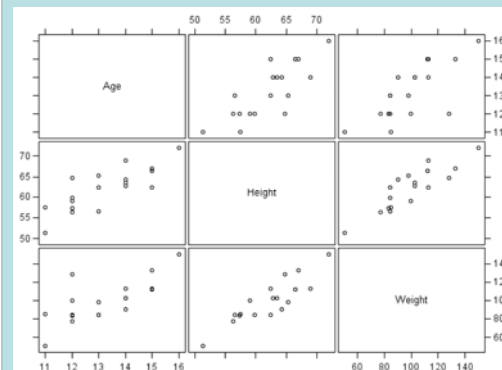
Although there are many other graphs types you can create, I wanted to highlight a couple of really cool advanced graphs. As with the series plot, it takes no more than a few mouse clicks to generate these plots, freeing up more of your time.
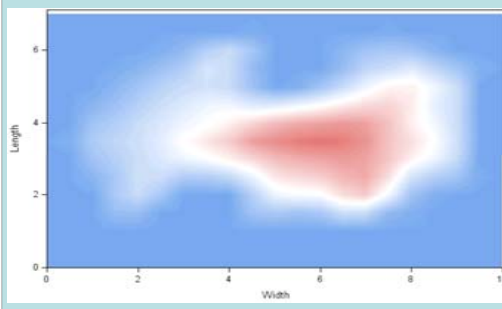
Advanced Graphs

Using the same basic steps as with the Series Plot I can have ODS output:
Survival Analyses:
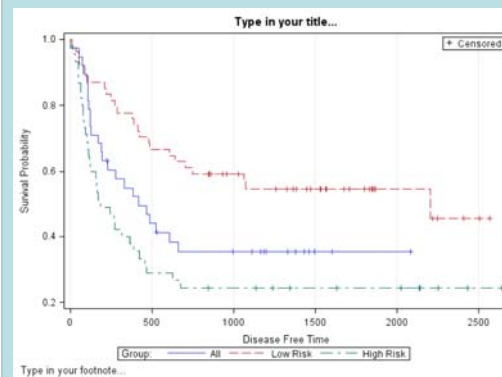
Matrices:

Even Contour Plots:

BUT BEFORE YOU GO…

```
Code - Graph

proc template;
define statgraph sgdesign;
dynamic _SEX _HEIGHT _AGE;
begingraph / designwidth=729 designheight=504;
  entrytitle halign=center 'Another Example Bar Chart';
  layout lattice / rowdatarange=data columndatarange=data rowgutter=10 columngutter=10;
    layout overlay;
      barchart x=_SEX y=_HEIGHT / group=_AGE name='bar' datatransparency=0.6 clusterwidth=1.0;
      discretelegend 'bar' 'href' / opaque=false border=true halign=right valign=top displayclipped=true down=1
order=columnmajor location=inside;
      referenceline y=390.0 / name='href' yaxis=Y curvelabelposition=max lineattrs=(thickness=4 );
    endlayout;
  endlayout;
endgraph;
end;
run;

proc sgrender data=SASHELP.CLASS template=sgdesign;
dynamic _SEX="SEX" _HEIGHT="HEIGHT" _AGE="AGE";
run;
```

That's right ladies and gentlemen – ODS Graphics Designer automatically generates PROC TEMPLATE and GTL for you in the background!

CONCLUSIONS

The abundance of options, features and other "extras" that can be used were barely scratched in this paper. Because ODS Graphics Designer uses default data sets, you are able to go in and experiment with the various graph types without worrying about creating a dummy data set. ODS Graphics Designer is not as easy to use as Graph'n'Go, but with that added level of complexity comes a wider range of visualisations, better outputs, and brings us into the new version of SAS. As well, the PROC TEMPLATE and SG functions that are created in the background allow for easy reproducibility, learning new ways to generate graphs, and exploring these new features of the SAS® Language.

RECOMMENDED READING

If interested in learning more I cannot recommend highly enough the SAS documentation *SAS 9.3 ODS GRAPHICS DESIGNER: USER'S GUIDE* for an extremely thorough review of the different features and graphs.

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