



»» TRANSFORMING PROMISING IDEAS INTO COMMERCIAL REALITY

Multi Panel Graphs using SAS® Greplay

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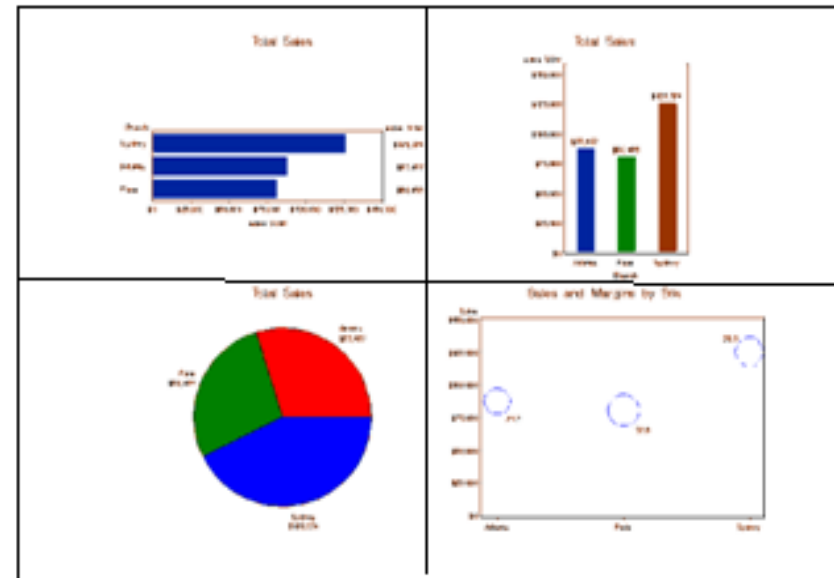
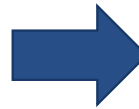
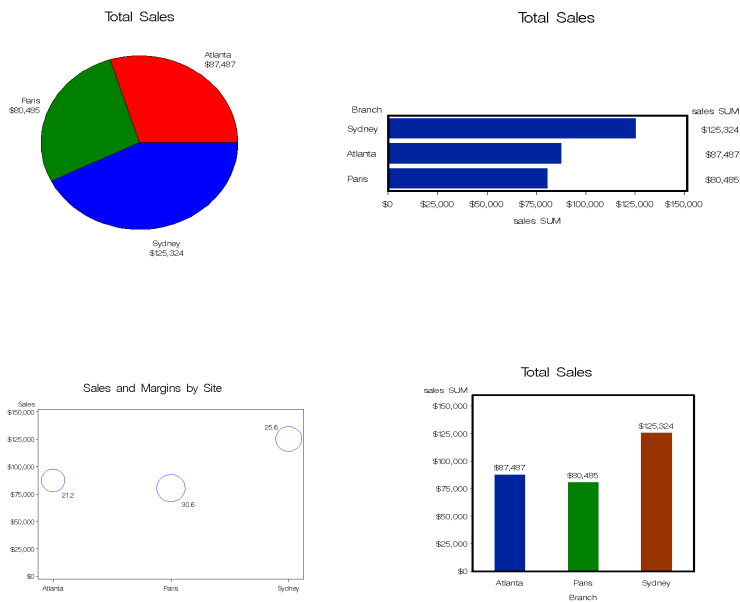
Agenda

- Overview
- Common titles and footnotes using PROC GSLIDE
- To create a template
- Default templates
- To create desired figure
- Examples
- Caution before defining a Panel



Overview

➤ Multiple graphs on single page.





Overview (cont.)

- Easy interpretation of analysis
- Graphs are created first and stored in a SAS graphics catalog. Default graphics catalog is work.gseg.

e.g.

```
proc gchart data = test gout = work.chart;  
  hbar center/frame sumvar = sale name = 'sale';  
run;  
quit;
```



Overview (cont.)

Create graphs
in a catalog
Eg. work.chart

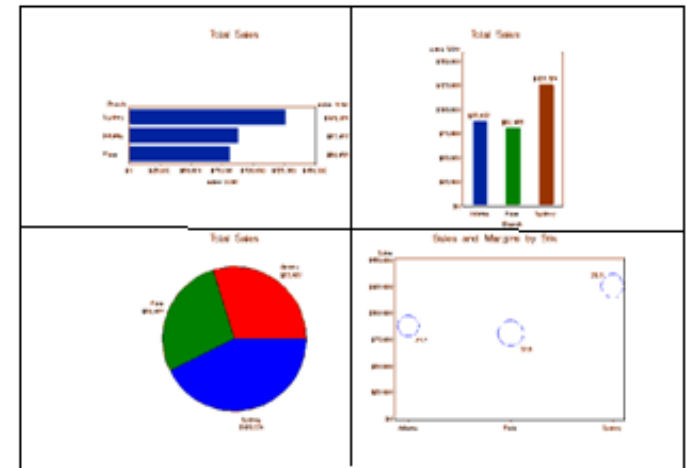
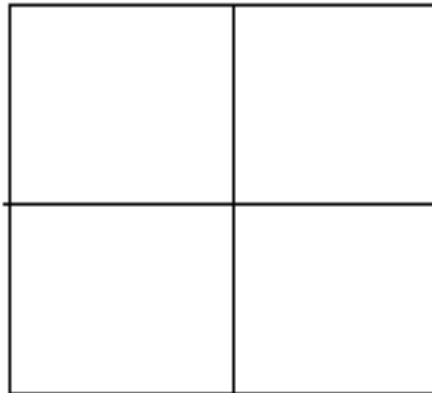
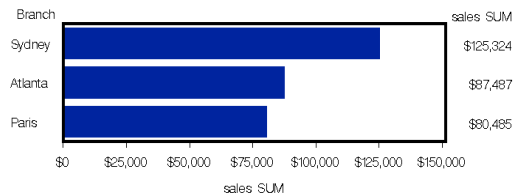


Create panel
template



Multiple graphs on
one page

Total Sales





Common titles and footnotes using PROC GSLIDE

- Span across the whole of the graph area
- NAME='gslide' provide you to name the catalog entry
- GOUT=<libref.>output-catalog provide where to save catalog entry

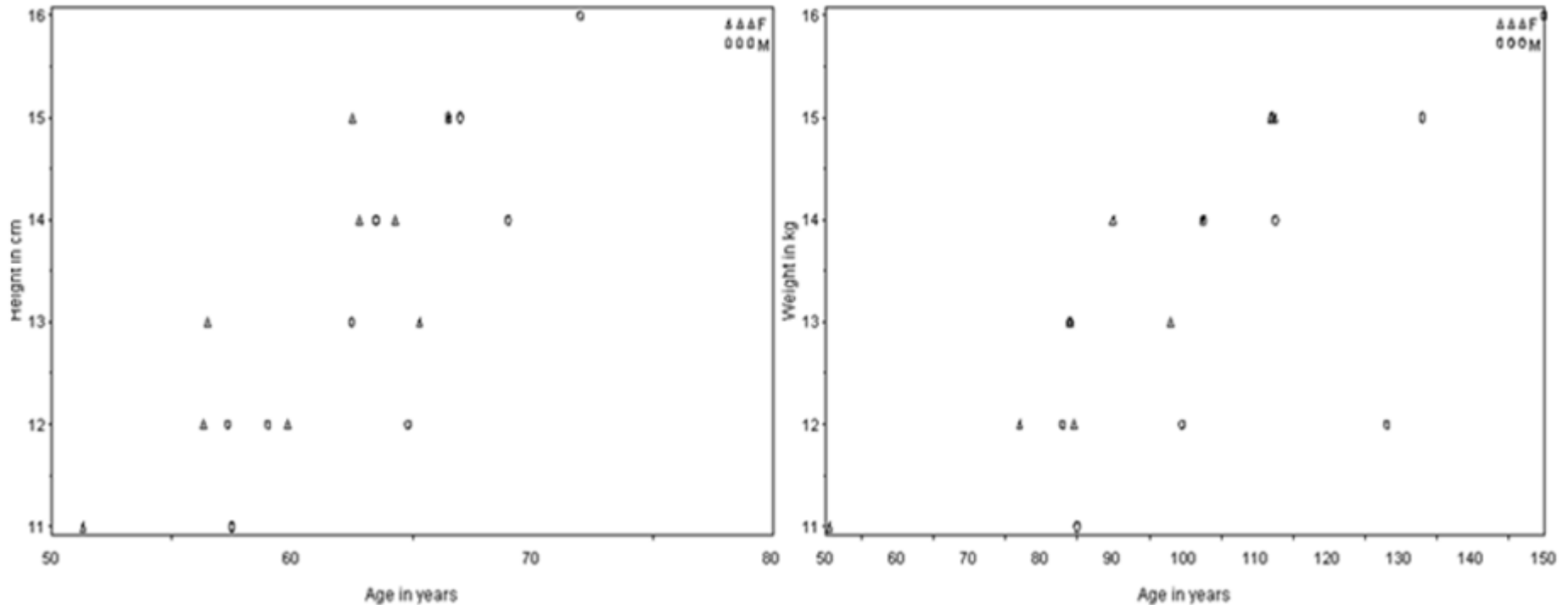
```
proc gslide name='GSLIDE' gout=work.gseg,  
  title1 j=1 h=0.9 "PhUSE 2014";  
  title2 j=1 "Plot of height vs age and weight vs age by gender";  
  footnote1 j=1 "Author: ABC";  
  footnote2 j=1 "Date: 19Jul2014";  
  
run;  
quit;
```



Common titles and footnotes using PROC GSLIDE (cont.)

PhUSE 2014

Plot of height vs age and weight vs age by gender



Author: ABC

Date: 19Jul2014



To create a template

- The syntax to create our two panel template is as follows:

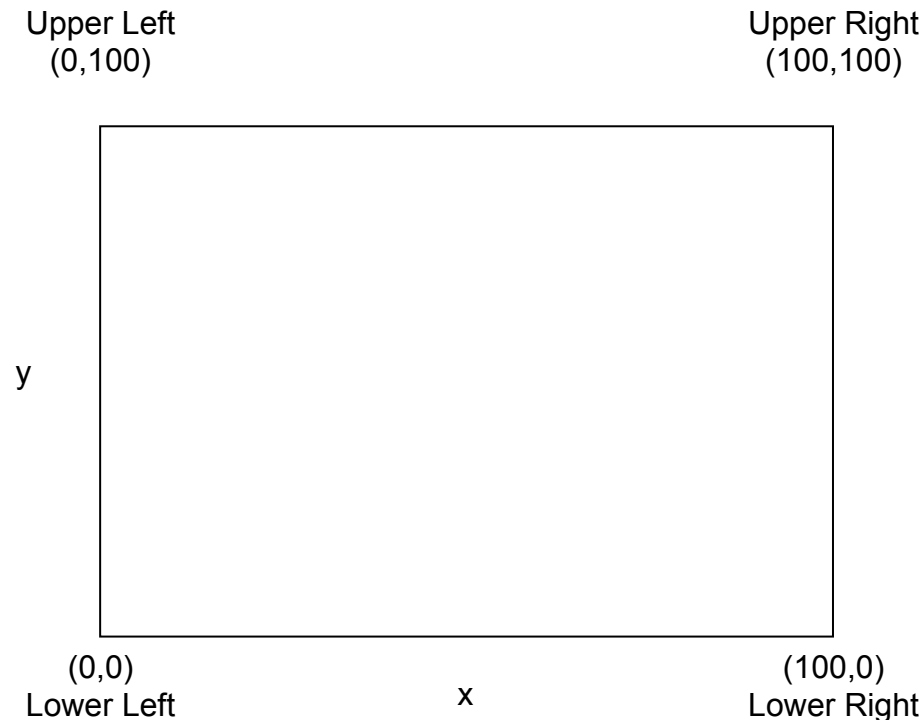
```
proc greplay tc= work.gseg nofs;  
  tdef two des='Two panel template'
```

- The **tc=** option defines the template catalog where the template will be stored.
- The **nofs** option stops windows being used in interactive SAS.
- The **tdef** statement is used to define the new template which is called two in our example.
- The **des=** option associates a description with the template.



To create a template (cont.)

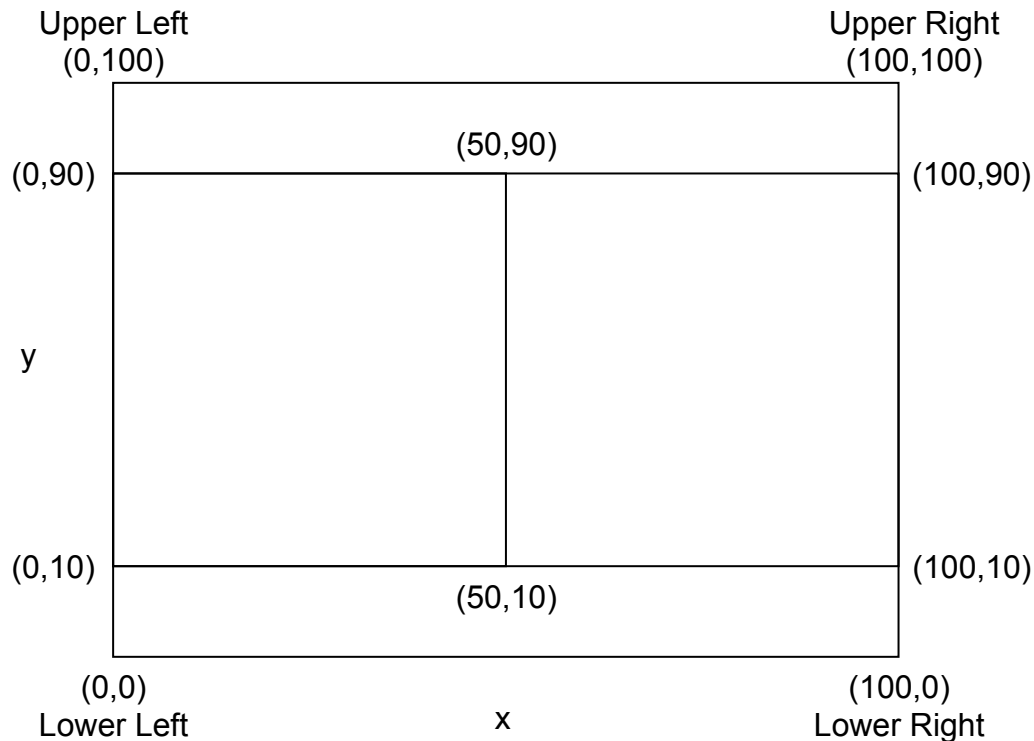
- Creating main panel by defining the coordinates of the 4 corners
- Defining page using an (X,Y) coordinate system with values in percentage of the page
- Same Coordinates for both portrait and landscape orientation





To create a template (cont.)

- Example to create the template for the gslide and gplot



```
proc greplay tc= work.gseg nofs;  
  tdef two  
  des='Two panel template'  
  /* Full panel */  
  1/llx=0    lly=0  
    lrx=100  lry=0  
    ulx=0    uly=100  
    urx=100  ury=100  
  /* Left panel */  
  2/llx=0    lly=10  
    lrx=50   lry=10  
    ulx=0    uly=90  
    urx=50   ury=90  
  /* Right panel */  
  3/llx=50   lly=10  
    lrx=100  lry=10  
    ulx=50   uly=90  
    urx=100  ury=90;
```



Default templates

- Default set of templates in sashelp.templt

```
proc greplay tc=sashelp.templt nofs;  
  template l2r2s;  
  list template;  
  preview l2r2s;  
  
run;  
quit;
```

L2R2S 2 BOXES LEFT, 2 BOXES RIGHT (WITH SPACE)

Pan	Clp	Color	L1-x	L1-y	U1-x	U1-y	Ur-x	Ur-y	Lr-x	Lr-y
1		BLACK	0.0	52.0	0.0	100.0	48.0	100.0	48.0	52.0
2		BLACK	0.0	0.0	0.0	48.0	48.0	48.0	48.0	0.0
3		BLACK	52.0	52.0	52.0	100.0	100.0	100.0	100.0	52.0
4		BLACK	52.0	0.0	52.0	48.0	100.0	48.0	100.0	0.0

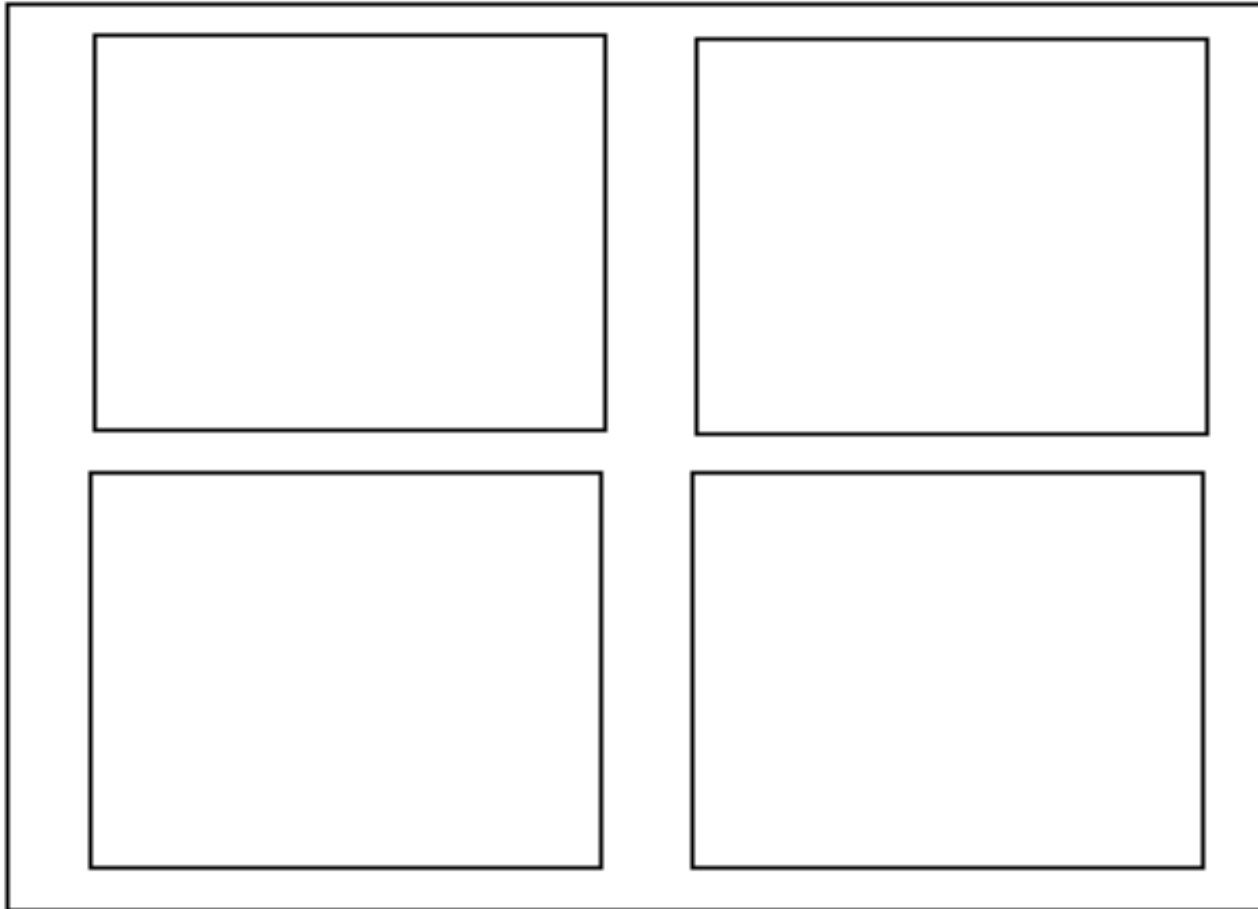
Contents of 'Sashelp.Templt'

- H2
- H2s
- H3
- H3s
- H4
- H4s
- L1r2
- L1r2s
- L2r1
- L2r1s
- L2r2
- L2r2s
- U1d2
- U1d2s
- U2d1
- U2d1s
- V2
- V2s
- V3
- V3s
- Whole



Default templates (cont.)

Preview example of l2r2s template





To create desired figure

- We use `proc greplay` again and specify the same template catalog where we saved panels and `nofs` options.
- The **`gout`** options specifies the catalog name where we want the created figure to be stored.
- The **`igout`** options specifies the catalog name from where we use figures to replay.
- The **`template`** statement is used to specify the name of the panel template we want to use.
- The **`treplay`** statement is used to specify figures from the catalog which we want to place into the different template positions.

```
proc greplay tc= work.gseg gout= work.gseg igout=work.gseg  
            nofs;  
    template TWO;  
    treplay 1:GSLIDE  
           2:HEIGHT  
           3:WEIGHT;  
run; quit;
```



To create desired figure (cont.)

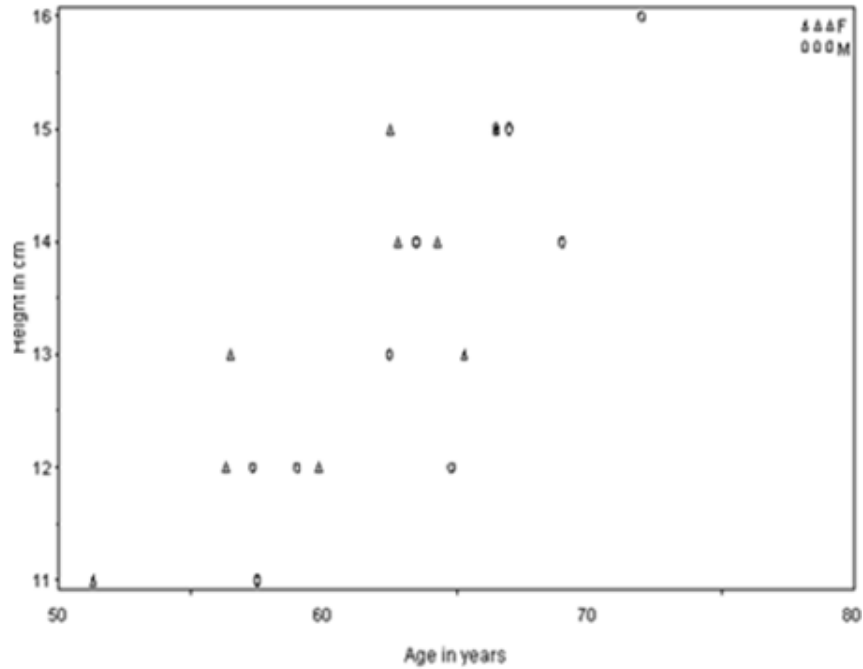
GSLIDE

PhUSE 2014
Plot of height vs age and weight vs age by gender

Author: ABC
Date: 19Jul2014

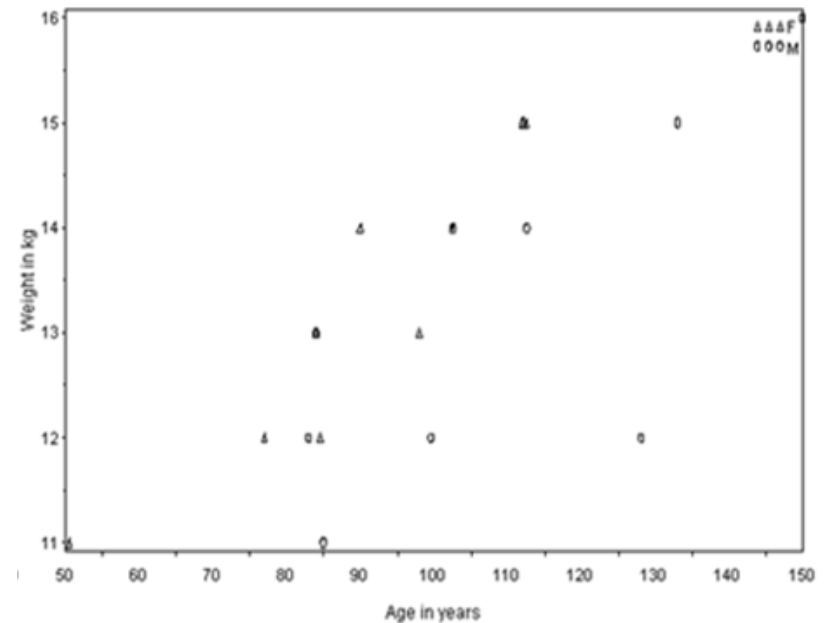


To create desired figure (cont.)



HEIGHT

WEIGHT

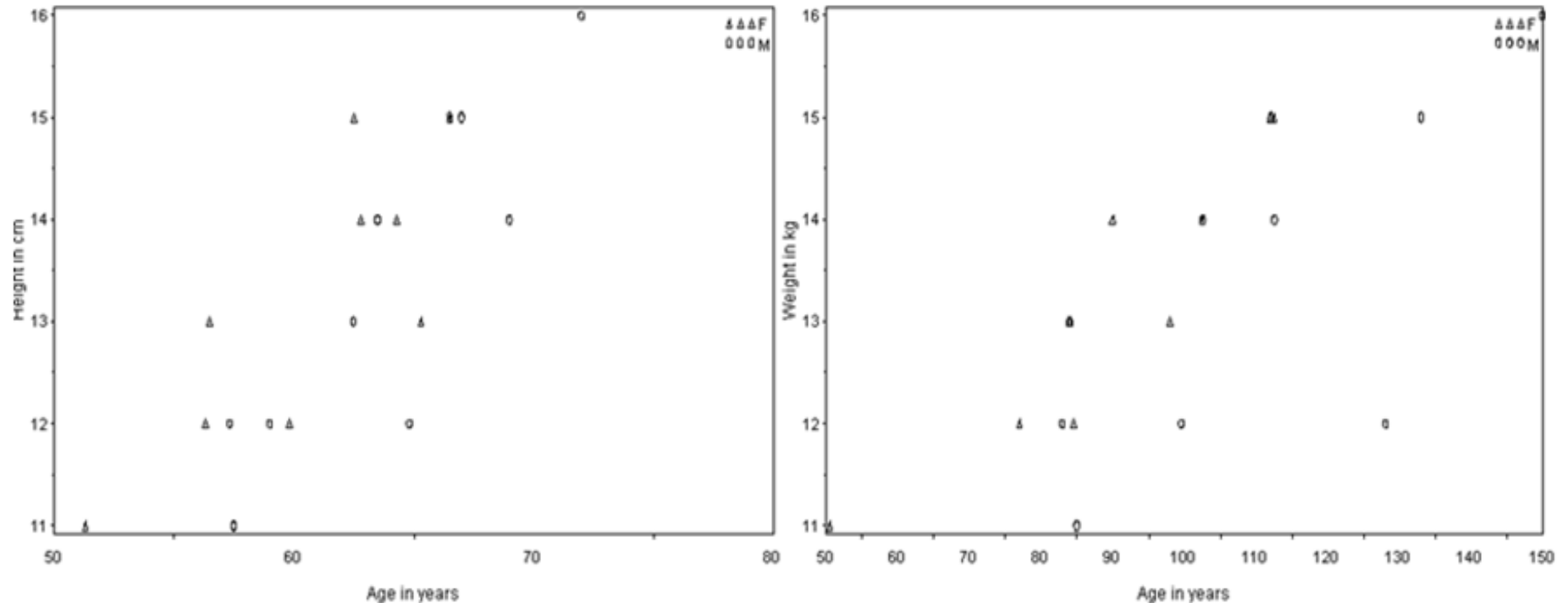




To create desired figure (cont.)

PhUSE 2014

Plot of height vs age and weight vs age by gender

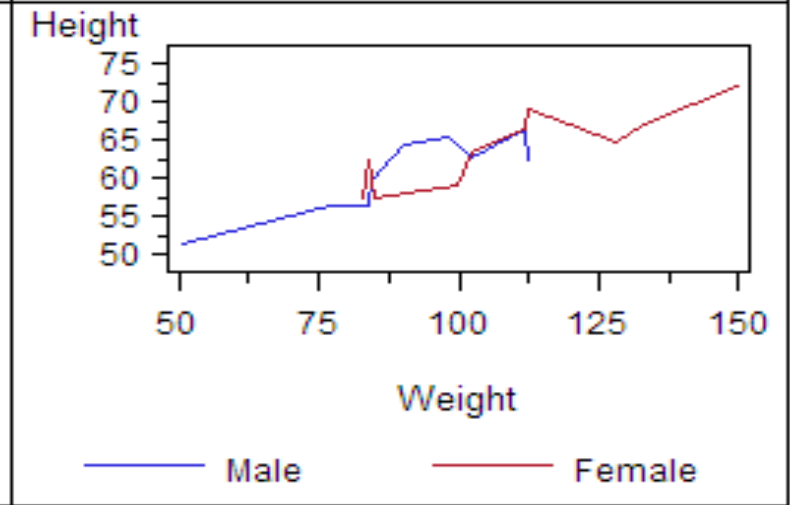
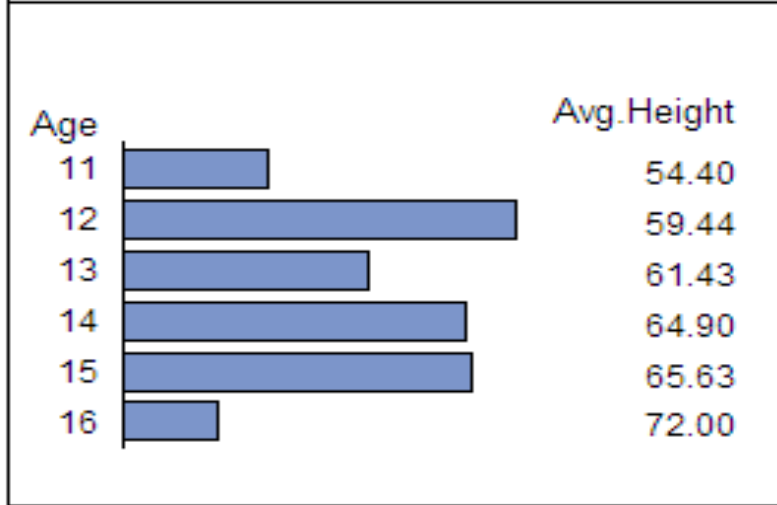
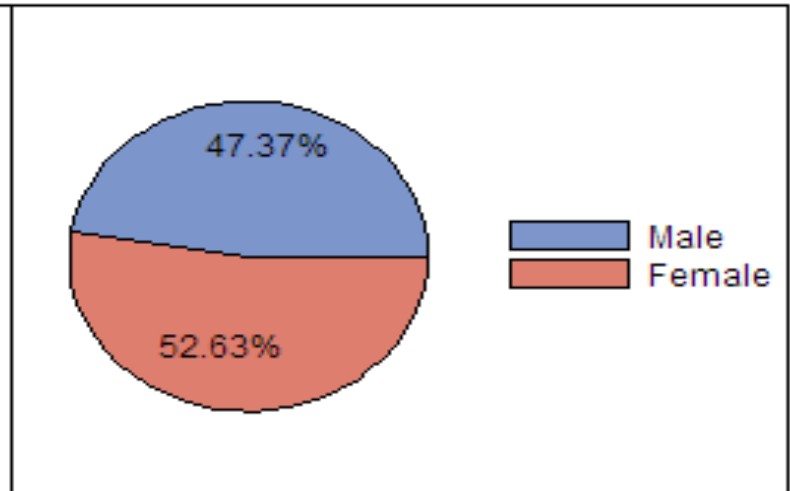
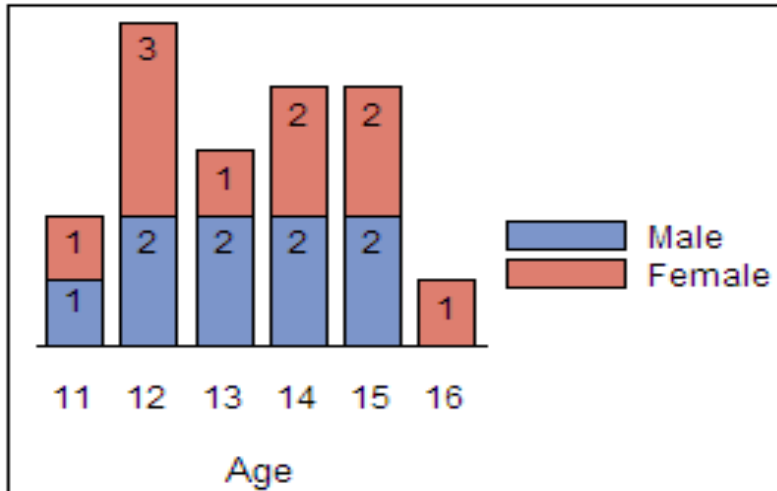


Author: ABC

Date: 19Jul2014



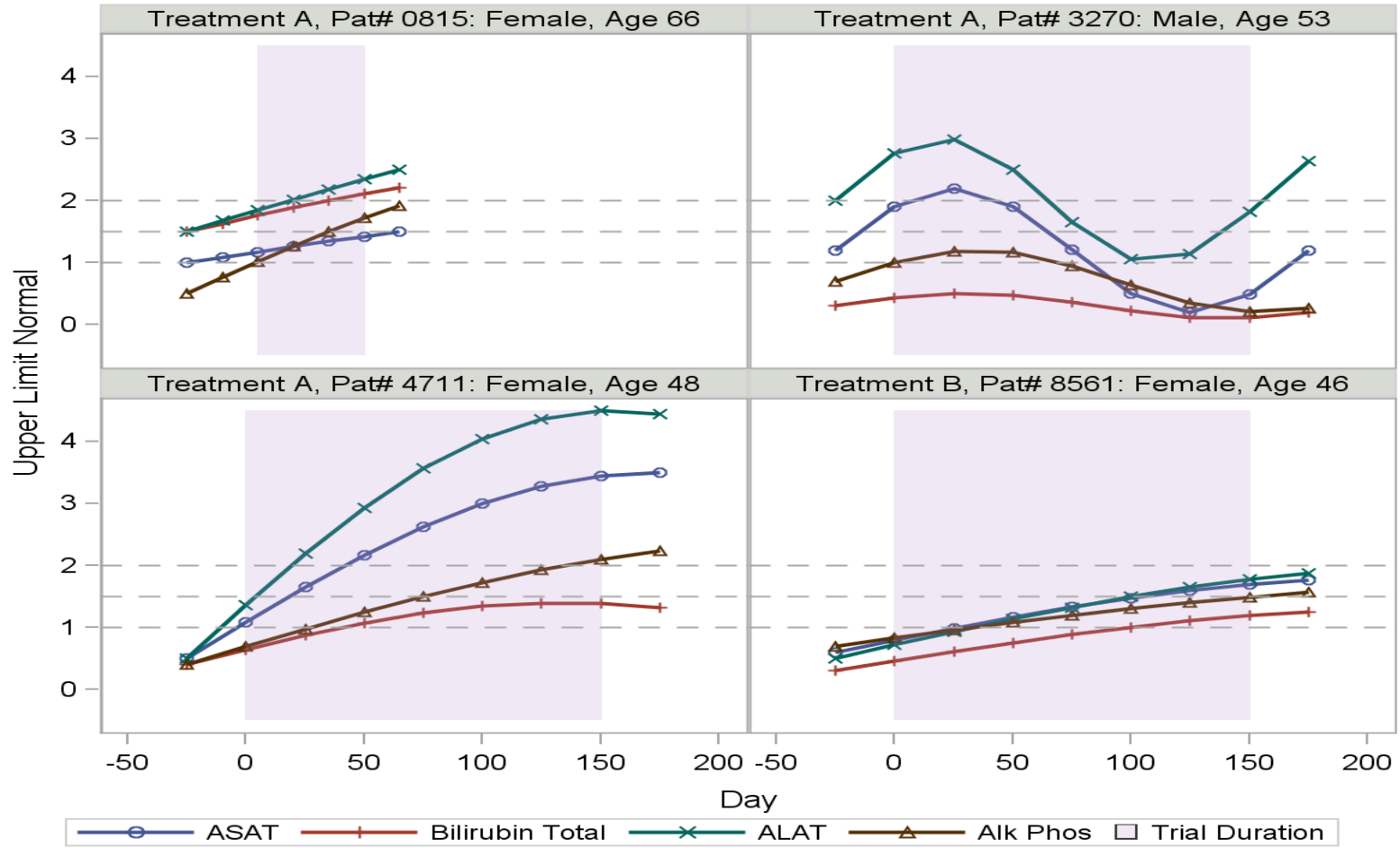
Examples





Examples (cont.)

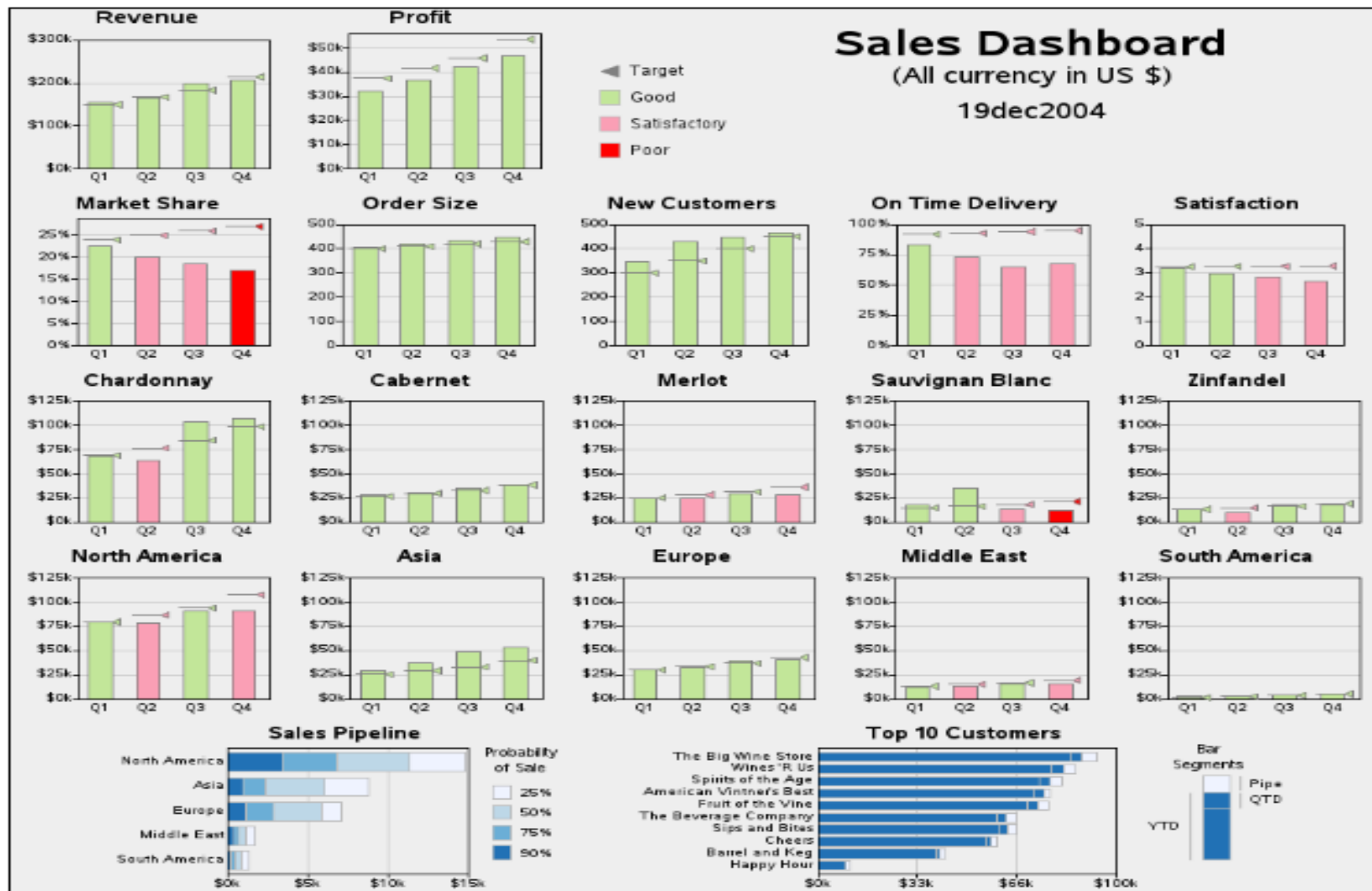
LFT Safety Panel: At Risk Patients



For ALAT, ASAT and Alkaline Phosphatase, the Clinical Concern Level is 2 ULN;
For Bilirubin Total, the CCL is 1.5 ULN: where ULN is the Upper Level of Normal

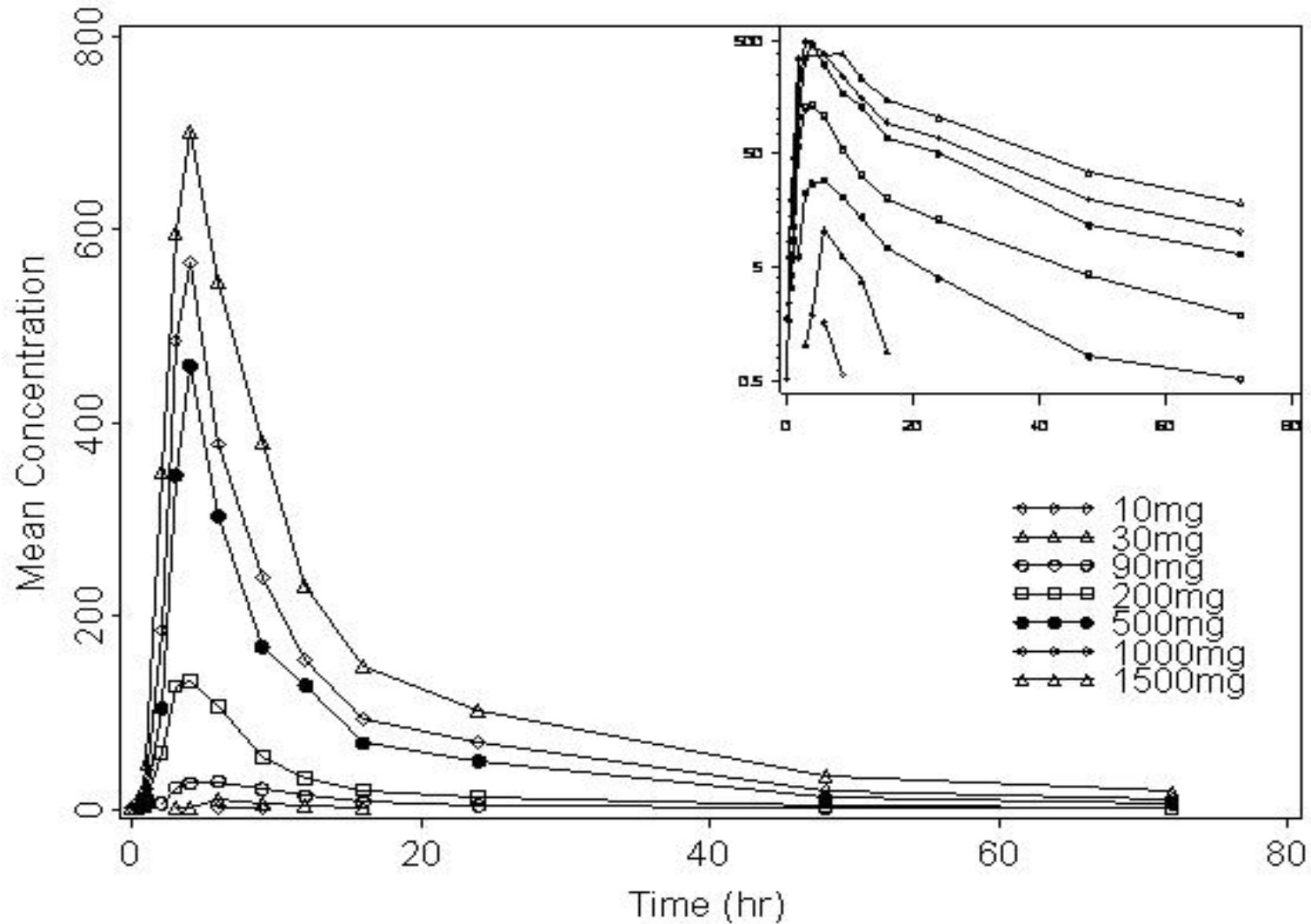


Examples (cont.)



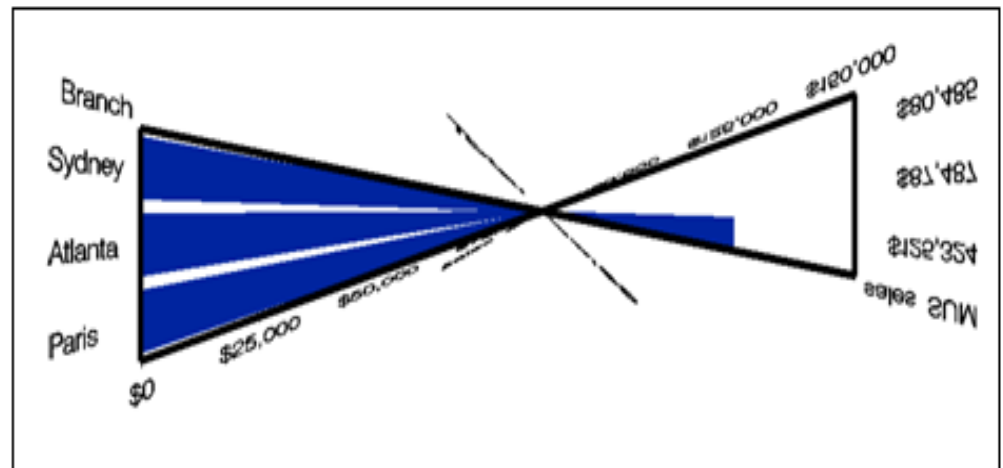
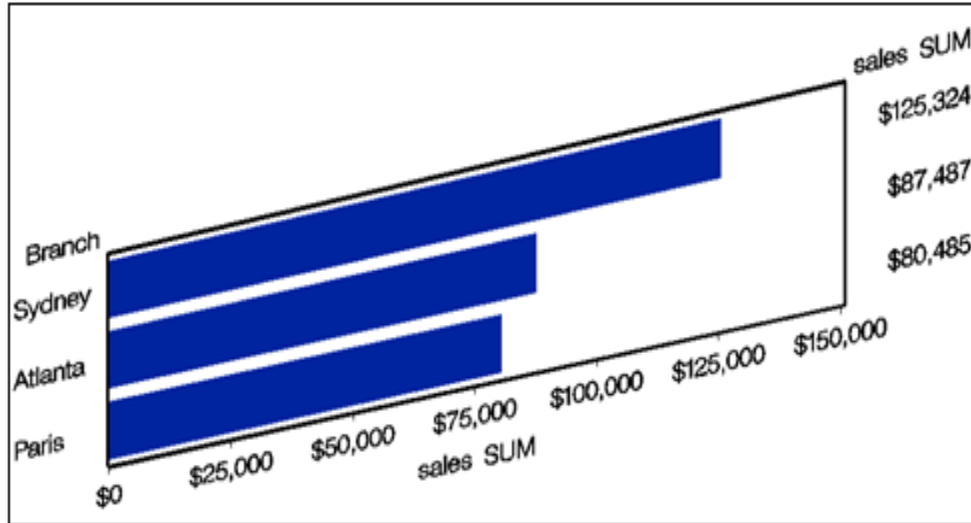


Examples (cont.)





Caution before defining a Panel







References

- SAS Institute Inc. *SAS/Graph ®User.s Guide, Release 9.2 Second Edition*
(<https://support.sas.com/documentation/cdl/en/graphref/63022/PDF/default/graphref.pdf>)
- Multiple Graphs on One Page Using SAS/GRAPH V9, Hany Aboutaleb, SAS Global Forum 2008
(<http://www2.sas.com/proceedings/forum2008/222-2008.pdf>)

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thank you!