

Creating Graphs Using Templates

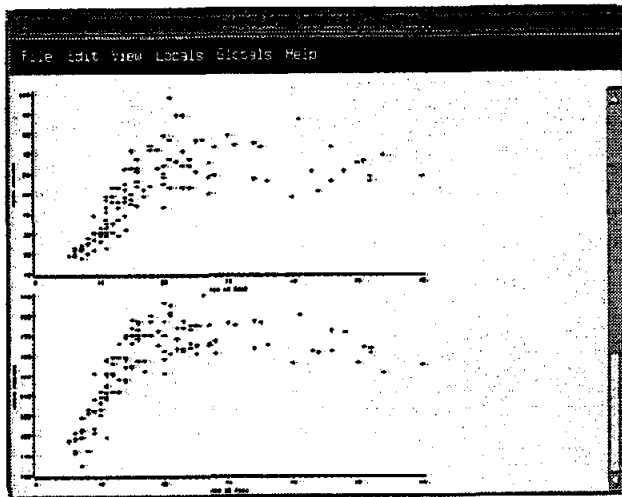
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Abstract

Sometimes it is an unnecessary waste of paper or inconvenient to print only one graph per page. Templates are a useful tool for displaying more than one graph, either by overlaying graphs or displaying multiple graphs on a page. Templates can also save time since they can be reused as needed once the template catalog is saved. This tutorial will demonstrate how to create templates using the GREPLAY procedure either interactively or in batch mode, how to use templates, and how to store templates once created. GSLIDE will also be shown as a way to display one title for the entire page.

Introduction

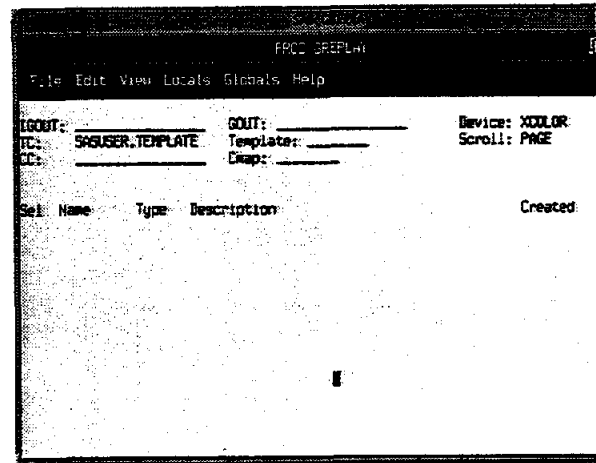
It is useful to display multiple graphs on one page instead of several. For example it may be useful to show a scatterplot of age with height and weight on the same page.



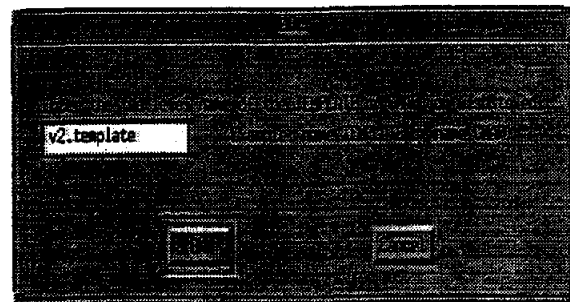
Another method for using templates is to overlay graphs on top of one another. This is useful when using a plot statement that looks like `PLOT Y*X=Z` since the overlay option cannot be used.

Creating Templates

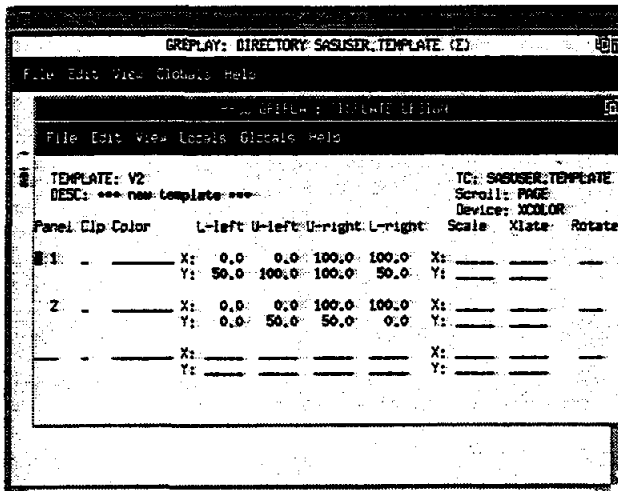
The first step in creating templates is to create a permanent template catalog either through the GREPLAY window or in a program. With windows, run a `PROC GREPLAY` statement. In the TC: area type `SASUSER.name of template catalog`. For example `SASUSER.template`.



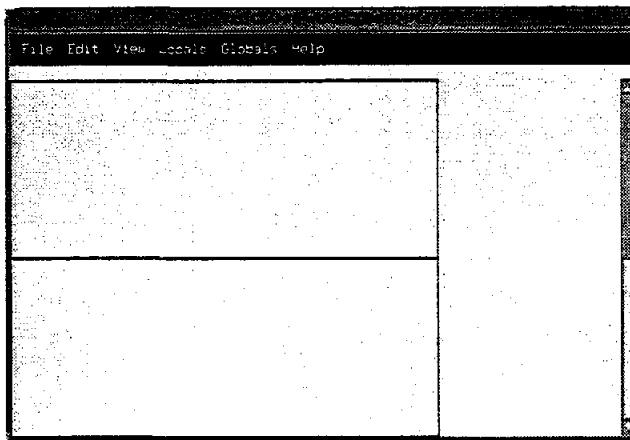
From here, using pmenus, click `Locals-->Template Catalog` (command line: `tc`). This will list the templates that are created. So far this screen should be empty. Go to `Edit-->Edit`. This screen will allow the template to be named. It must be a two level name beginning with the name of the template followed with the word `template`, for example `name.template` (command line: `edit name.template`). For this example the template name will be `V2.template` to indicate this template will contain two graphs with one on top and one on bottom.



The template is defined by the panel numbers and the coordinates for each panel. The coordinates are based on a 0 to 100 scale and each panel is defined by the upper, lower and left, right bounds of the X and Y axis.



To see the template created, click Locals-->Pre-view template list (command line: preview).



Templates can also be created within a program using the PROC GREPLAY procedure and the TDEF statement. The syntax for the TDEF statement contains the following:

```
TDEF template-name <DES='string'>
    <panel-definition> <...panel-definition-n>;
```

template-name = name of template.

panel-definition = *panel-number*/<options>

panel-number = number of the panels being defined.

options = one or more of the following:

CLIP

specifies any panels behind this panel should be clipped.

COLOR=border-color

specifies the color of the panel border.

COPY=panel-number

specifies the number of the panel definition to be copied to this panel.

DEF

specifies a default panel.

DELETE/DEL

deletes the panel.

DES='string'

specifies a string that appears in the Description field of the catalog entry for the template.

LLX=x

specifies the X coordinate for the lower-left corner of the panel.

LLY=y

specifies the Y coordinate for the lower-left corner of the panel.

LRX=x

specifies the X coordinate for the lower-right corner of the panel.

LRY=y

specifies the Y coordinate for the lower-right corner of the panel.

ROTATE=degrees

specifies the rotation angle for the panel.

SCALEX=factor

specifies the scale factor for the X coordinates in the panel.

SCALEY=factor

specifies the scale factor for the Y coordinates in the panel.

ULX=x

specifies the X coordinate for the upper-left corner of the panel.

ULY=y

specifies the Y coordinate for the upper-left corner of the panel.

URX=x

specifies the X coordinate for the upper-right corner of the panel.

URY=y

specifies the Y coordinate for the upper-right corner of the panel.

XLATEX=distance

specifies the distance to move the X coordinates of the panel.

YLATEX=distance

specifies the distance to move the Y coordinates of the panel.

The following is an example creating the same template as before with two vertical panels.

```
PROC GREPLAY TC=SASUSER.TEMPLATE
```

```
/* defines template */
```

```
TDEF V2 DES='Two vertical panels'
```

```
/* define panel 1 */
```

```
1/lx=0 lly=50
```

```
ulx=0 uly=100
```

```
urx=100 ury=100
```

```
lrx=100 lry=50
```

```
/* define panel 2 */
```

```
2/lx=0 lly=0
```

```
ulx=0 uly=50
```

```
urx=100 ury=50
```

```
lrx=100 lry=0;
```

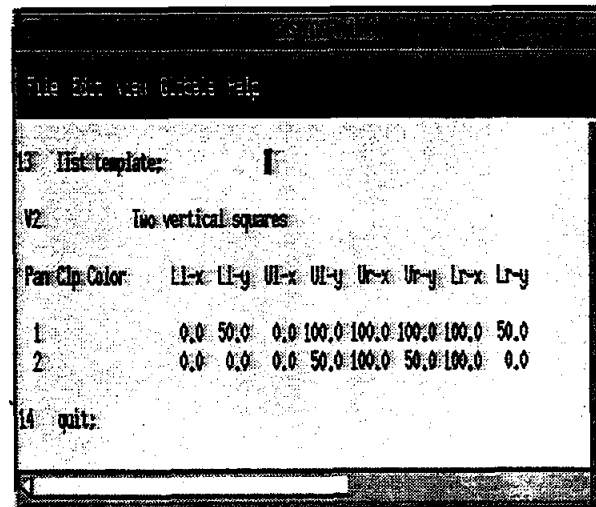
```
/* assign current template */
```

```
TEMPLATE V2;
```

```
/* list contents of current template */
```

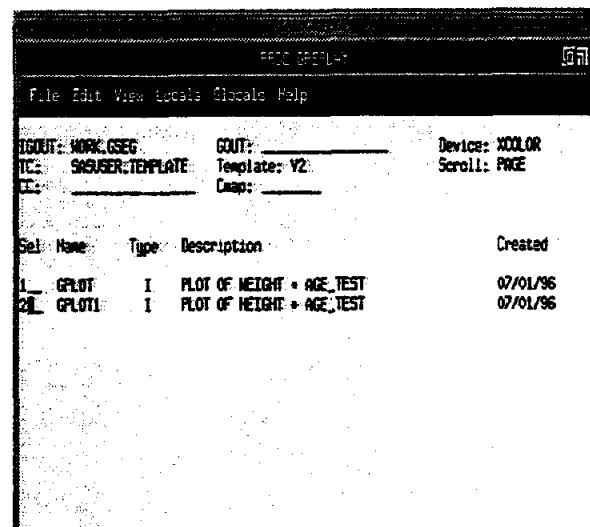
```
LIST TEMPLATE; QUIT;
```

The LIST TEMPLATE statement displays the name of the template, the title, and the coordinates of each panel in the sas log.



Using Templates

Once the template is created then each graph needs to be assigned a panel number corresponding to where each graph should be displayed. Also the name of the template used needs to be filled in on the template line.



The graphs will automatically be put in the panels defined earlier.

There are some predefined templates that can be used and are located in SASHELP.TEMPLT.

Name	Type	Description	Updated
H2	TEMPLATE	1 BOX LEFT, 1 BOX RIGHT	10/03/95
H2S	TEMPLATE	1 BOX LEFT, 1 BOX RIGHT (WITH SPACE)	10/03/95
H3	TEMPLATE	3 BOXES ACROSS (HORIZONTALLY)	10/03/95
H3S	TEMPLATE	3 BOXES ACROSS (WITH SPACE)	10/03/95
H4	TEMPLATE	4 BOXES ACROSS (HORIZONTALLY)	10/03/95
H4S	TEMPLATE	4 BOXES ACROSS (WITH SPACE)	10/03/95
L1R2	TEMPLATE	1 BOX LEFT, 2 BOXES RIGHT	10/03/95
L1R2S	TEMPLATE	1 BOX LEFT, 2 BOXES RIGHT (WITH SPACE)	10/03/95
L2R1	TEMPLATE	2 BOXES LEFT, 1 BOX RIGHT	10/03/95
L2R1S	TEMPLATE	2 BOXES LEFT, 1 BOX RIGHT (WITH SPACE)	10/03/95
L2R2	TEMPLATE	2 BOXES LEFT, 2 BOXES RIGHT	10/03/95
L2R2S	TEMPLATE	2 BOXES LEFT, 2 BOXES RIGHT (WITH SPACE)	10/03/95
U1D2	TEMPLATE	1 BOX UP, 2 BOXES DOWN	10/03/95
U1D2S	TEMPLATE	1 BOX UP, 2 BOXES DOWN (WITH SPACE)	10/03/95
U2D1	TEMPLATE	2 BOXES UP, 1 BOX DOWN	10/03/95
U2D1S	TEMPLATE	2 BOXES UP, 1 BOX DOWN (WITH SPACE)	10/03/95
V2	TEMPLATE	1 BOX UP, 1 BOX DOWN	10/03/95
V2S	TEMPLATE	1 BOX UP, 1 BOX DOWN (WITH SPACE)	10/03/95
V3	TEMPLATE	3 BOXES STACKED VERTICALLY	10/03/95
V3S	TEMPLATE	3 BOXES STACKED VERTICALLY (WITH SPACE)	10/03/95
WHOLE	TEMPLATE	TEMPLATE ENTIRE SCREEN-TEMPLATE	10/03/95

```
PROC GSLIDE GOUT=WORK.GSEG;
  TITLE1 'Example of One Title for Entire
  Page Using Gslide';
RUN; QUIT;
```

Next the graph can be created using the template V2T and defining the gslide title as panel 3.

Set	Name	Type	Description	Created
1	GLOT	I	PLOT OF HEIGHT * AGE_TEST	07/0
2	GLOT1	I	PLOT OF HEIGHT * AGE_TEST	07/0
3	GSLIDE	I	OUTPUT FROM PROC GSLIDE	07/0

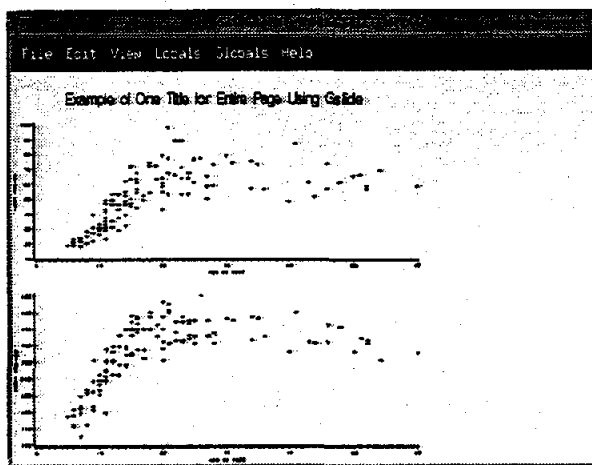
GSLIDE

Gslide can be used to display one title for the entire page. First create a template with one panel that consists of the entire page. The other panels may need to be adjusted in order to make room for the title. For example, create a template similar to the one created previously but lower the upper bounds for panel 1 and include a panel 3 which includes the entire page. This template will be named V2T.

Panel	Clip	Color	L-left	U-left	U-right	L-right	Scale	Xlate	Rotate
1	-	---	X: 0.0 Y: 50.0	0.0 95.0	100.0 95.0	100.0 50.0	X: --- Y: ---	---	---
2	-	---	X: 0.0 Y: 0.0	0.0 50.0	100.0 50.0	100.0 0.0	X: --- Y: ---	---	---
3	-	---	X: 0.0 Y: 0.0	0.0 100.0	100.0 100.0	100.0 0.0	X: --- Y: ---	---	---

The next step is to run a PROC GSLIDE statement to define the gslide. In this example the gslide will be defined to the work library.

This will produce the following output:



Summary

Templates are a useful tool for displaying multiple graphs. They can either be created through windows or in a program with many options.

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Reference

SAS Institute Inc., *SAS/GRAPH Software, Volume 1, Reference, Version 6, First Edition*, Cary, NC: SAS Institute, Inc., 1990

SAS Institute Inc., *SAS/GRAPH Software, Volume 2, Reference, Version 6, First Edition*, Cary, NC: SAS Institute, Inc., 1990

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