

Paper SIB-109

Tips to Customize SAS/GRAPH®... for Reluctant Beginners et al.

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ABSTRACT

SAS® graphs do not have to be difficult or created by SAS/GRAPH “experts”. There are ways that graphs can be turned from basic to bold. Simple SAS/GRAPH options are demonstrated in easy steps to show even the beginner programmer or graph user. A few simple tricks may even impress the SAS/GRAPH “experts”.

INTRODUCTION

Graphs can be intimidating to some SAS users. The purpose for this paper is to give a general level of detail for adding a few options to SAS graphs. Some very basic level options can turn a graph from basic to bold. Details for changing the axis, text font, color, adding legends or labels, connecting lines on plot graphs will be provided. The examples shown will all use GPLOT, but most options are portable for other types of graphs. SAS/GRAPH is very extensive and this paper only takes a sneak peek at a few statement options.

Sample syntax within the paper will be shown as follows:

```
LIBNAME GRAPH "C:\SESUG\SEEING IS BELIEVING";  
  
PROC CONTENTS DATA = GRAPH._ALL_;  
RUN;
```

SAS/GRAPH OPTIONS

There are many options that can be useful to enhance a graph. The following list of GRAPH statements and options will be used to demonstrate a simple GPLOT Procedure that becomes more visually appealing with a few minor changes. For more SAS/GRAPH options, see the REFERENCES section at the end of the paper.

- GOPTIONS
- AXIS
- ORDER=
- MINOR=NONE
- SYMBOL VALUE=
- INTERPOL=
- LEGEND=
- LABEL=
- ANGLE=
- FTEXT=
- HTEXT=

GOPTIONS

If producing numerous graphs within the same session, it's nice to start with a clean slate for each graph. The **GOPTIONS** statement is used to control the graph options during a SAS session. The changes will only be in effect during the current session unless the GDEVICE procedure is applied. (GDEVICE will not be discussed.)

In order to reset the options during a SAS session, submit the following syntax.

```
GOPTIONS RESET=ALL;
```

AXIS

The **AXIS** statement will help with the appearance of the horizontal and vertical axes within the plots and charts. There are quite extensive options that can be placed on the axis statement. The following is a sample.

(Note: Used with GBARLINE, GCHART, GCONTOUR, GPLOT, GRADAR)

```
AXIS1 LABEL = (H=2.5 'This is the Axis Label' JUSTIFY=CENTER COLOR=BLUE  
              LENGTH=50 WIDTH=1.5);
```

ORDER=

The **ORDER=** option provides specific values for the particular axis specified instead of the processor determining the range based on the dataset input. If your data contains values from 50-80, but you want to see a larger-based range to compare with other data, use the following statement.

```
AXIS1 ORDER = (0 TO 100 BY 10);
```

MINOR

The **MINOR=** option is used for the smaller tick-marks on the axis graph. These smaller tick-marks can be suppressed using **=NONE**.

```
AXIS1 ORDER = (0 TO 100 BY 10) MINOR=NONE;
```

SYMBOL VALUE

The **SYMBOL VALUE** assigns a type or value for the graph. This is an important option if there is a graph with several lines that need to be distinguished. Some analysts want to see graphs with lots of lines. Once a certain amount of lines are produced on a graph, it is almost impossible to see the data, but using various symbols will assist in finding the right information on the graph produced.

```
SYMBOL VALUE=DOT;
```

INTERPOL=

The **INTERPOL** is the interpolation method used with the symbol statement. Several options exist within separate categories. Categories include: general methods, high-low interpolation methods, regression methods, and spline methods. This paper only covers the general method of **JOIN**. The author did not have a need for other methods, but the **JOIN** option is important if the continuous lines need to be formed on a GPLOT graph.

```
SYMBOL VALUE=DOT INTERPOL=JOIN;
```

LEGEND=

LEGEND will add a nice and neat legend with data details to the graph output. This is a bit fancy, but some audiences like to see a fancy graph with lots of details. The legend statement also has lots of options as well, including font, color, and position to name a few.

```
LEGEND1 CBORDER=RED POSITION=TOP;
```

LABEL=

A label can be added to the **LEGEND** statement to add even more details.

```
LEGEND1 LABEL = ('LEGEND FOR CLASSES ') CBORDER=RED POSITION=TOP;
```

ANGLE=

To make the graph look even cleaner, the **LABEL** can be placed on an angle of choice.

```
AXIS1 LABEL = (ANGLE=90 "GRADE PERCENTAGE WITHIN A CLASS");
```

FTEXT=

The **FTEXT** option allows the choice of font for any titles, footnotes, or legend labels.

```
GOPTIONS FTEXT="ARIAL";
```

HTEXT=

HTEXT determines the height or size of the text.

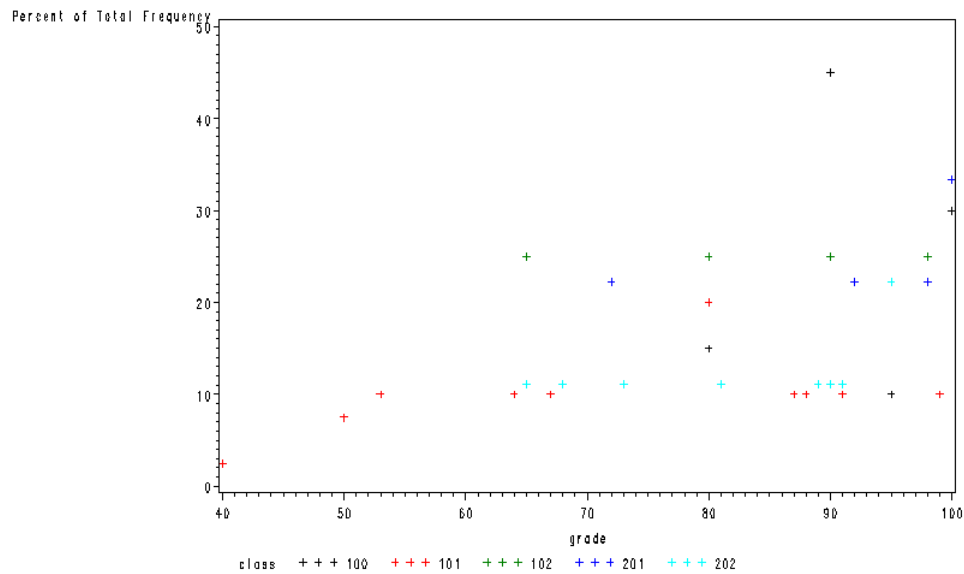
```
GOPTIONS FTEXT="ARIAL" HTEXT=2.5;
```

SOME SAS/GRAPH VISUALS

A simple GPLOT graph will not turn any heads or look very interesting, nor does it provide a lot of detail about the information that is being analyzed.

```
PROC GPLOT DATA = CLASS_GRADES;  
PLOT GRADE* CLASS;  
RUN;  
QUIT;
```

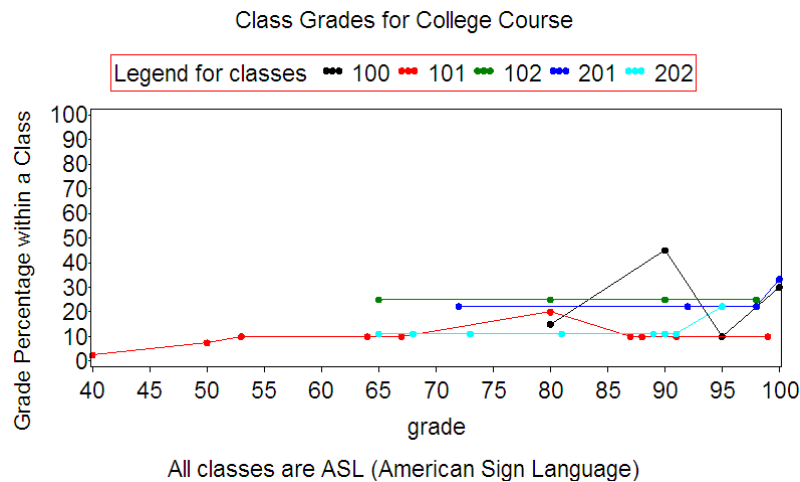
ORIGINAL GPLOT OUTPUT



However, using some of the options discussed with some simple understanding, the ordinary GPLOT graph could be transformed into a legible, detailed output.

```
AXIS1 ORDER = (0 TO 100 BY 10) MINOR=NONE  
      LABEL = (ANGLE=90 "GRADE PERCENTAGE WITHIN A CLASS");  
  
AXIS2 ORDER = (40 TO 100 BY 5) MINOR=NONE;  
  
SYMBOL VALUE=DOT INTERPOL=JOIN;  
  
OPTIONS FTEXT="ARIAL" HTEXT=2.5;  
  
LEGEND1 LABEL = ('LEGEND FOR CLASSES ') CBORDER=RED POSITION=TOP;  
  
PROC GPLOT DATA= GRADE_FREQ;  
TITLE 'CLASS GRADES FOR COLLEGE COURSE';  
FOOTNOTE 'ALL CLASSES ARE ASL (AMERICAN SIGN LANGUAGE)';  
PLOT PERCENT*GRADE =CLASS / VAXIS=AXIS1 HAXIS=AXIS2 LEGEND=LEGEND1;  
RUN;  
  
QUIT;
```

FINALIZED GPLOT OUTPUT WITH OPTIONS



CONCLUSIONS

In conclusion, even if someone is not an SAS/GRAPH expert, with some practice and a little bit of effort, graphs can become something visually appealing and perhaps useful to others. And if you don't feel like practicing or putting forth the effort, then ask a SAS/GRAPH expert!

REFERENCES

SAS Online Docs V9.1.3
www.sas.com
www2.sas.com/proceedings/sugi31/239-31.pdf

RECOMMENDED READING

The following sites were found during the creation of this paper and provide details about SAS/GRAPH and many of the options discussed in the paper at the time of conference. (All sites current at time of paper creation.)

http://www.sas.com/technologies/bi/query_reporting/graph/index.html
<http://www.pauldickman.com/teaching/sas/graph.php>
http://support.sas.com/rnd/papers/sugi30/p90-30_020105.pdf
Any of Ben Cochran's SAS/GRAPH papers or workshops

CONTACT INFORMATION

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