

Order, Order, Puhlease...

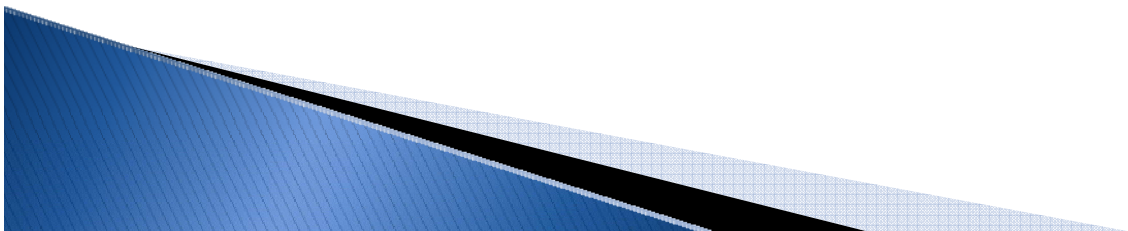
Using the order options with PROC REPORT.

Ordering information

Proc report is one of the more useful tools available in SAS for generating formatted reports.

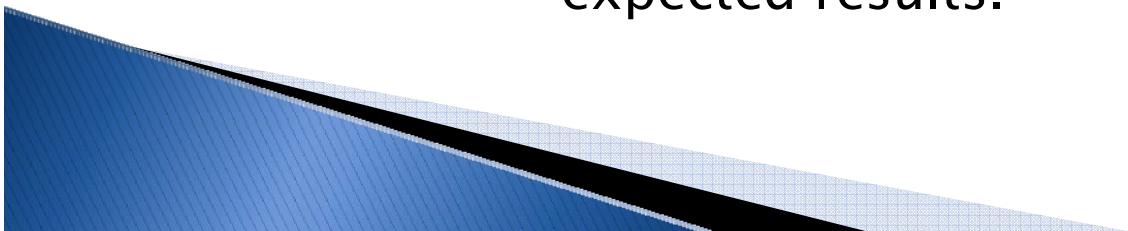
One of the key expectations for customers of our reports is providing output in a sorted order.

That sorted order is not always obvious or easy...



Sorting data with Proc Report

- ▶ There are different methods for sorting data with PROC REPORT.
 - There is some crossover between methods, such as the ORDER and the GROUP usage options.
- ▶ This presentation focuses on how to sort data in PROC REPORT using the ORDER options.
- ▶ There are two 'ORDER' options: ORDER and ORDER=.
 - Using both options will help you achieve expected results.



Order and Order=, the Syntax

- ▶ Specify how to sort output in the DEFINE statement with BOTH ORDER and ORDER= options.

```
PROC REPORT DATA={DATASET} ;  
    COLUMN {VARIABLE(S)}  
    DEFINE {VARIABLE} / ORDER ORDER={SPECIFY} ;  
RUN ;
```

- ▶ The **ORDER** usage option tells PROC REPORT that the variable's function is to be a sort variable.
- ▶ The **ORDER=** option tells PROC REPORT how to use the variable for sorting. There are four "types" of sorts (next slide).

ORDER= OPTION: Types of Sorts

ORDER=FORMATTED	Sorts by a variable's formatted values (DEFAULT)
ORDER=DATA	Sorts in the order that the variable values are encountered in the ENTIRE dataset (ignores subgroups)
ORDER=INTERNAL	Sorts by a variable's unformatted values
ORDER=FREQ	Sorts by frequency counts of the variable values

Examples Of Various ORDER= Sorts

VSSEQ UNFORMATTED & FORMATTED VALUES:

↓ ↓
1 = 'Systolic BP'
2 = 'Diastolic BP'
3 = 'Pulse' ;

ORDER=INTERNAL

Ordered by UNFORMATTED values
VSSEQ = 1, 2, 3

VSSEQ
Systolic BP
Diastolic BP
Pulse

ORDER=FORMATTED

Ordered by FORMATTED values
VSSEQ = Diastolic BP, Pulse, Systolic BP

VSSEQ
Diastolic BP
Pulse
Systolic BP

Examples Of Various ORDER= Sorts

VITALS DATASET →

VSTEST	VISIT
SBP	0
SBP	2
SBP	3
DBP	0
DBP	1
DBP	2
DBP	3

ORDER=INTERNAL

Provided within group (VSTEST)
VISIT order

VSTEST	VISIT
SBP	0
	2
	3
DBP	0
	1
	2
	3

ORDER=DATA

First three VISIT values in dataset are
0, 2, 3 . This becomes established order
for subgroups. Note DBP VISIT 1 is at
bottom of list.

VSTEST	VISIT
SBP	0
	2
	3
DBP	0
	2
	3
	1

What happens when you use one ORDER option without the other?


VITALNEW DATASET

VSTEST	VISIT
DBP	0
DBP	2
DBP	3
DBP	1
SBP	0
SBP	3
SBP	2

```
PROC REPORT DATA=VITALNEW;  
  COLUMN VISIT VSTEST;  
  DEFINE VSTEST /ORDER ORDER=INTERNAL;  
  DEFINE VISIT /ORDER ORDER=INTERNAL FORMAT=VISI.;  
RUN;
```


What happens when you use one ORDER option without the other?

VISIT UNFORMATTED & FORMATTED VALUES:



```
0 = 'Visit 0-Pre'  
1 = `Treatment 1`  
2 = `Treatment 2`  
3 = `Treatment 3`
```

```
DEFINE VISIT /ORDER ORDER=INTERNAL FORMAT=VISI.;
```

ORDER= but no ORDER

VISIT IS NOT RECOGNIZED AS A SORT VARIABLE

VSTEST	VISIT
DBP	Visit 0 - Pre
	Treatment 2
	Treatment 3
	Treatment 1
SBP	Visit 0 - Pre
	Treatment 3
	Treatment 2

ORDER but no ORDER=

VISIT IS SORTED BY THE DEFAULT (FORMATTED) ORDER

VSTEST	VISIT
DBP	Treatment 1
	Treatment 2
	Treatment 3
	Visit 0 - Pre
SBP	Treatment 2
	Treatment 3
	Visit 0 - Pre

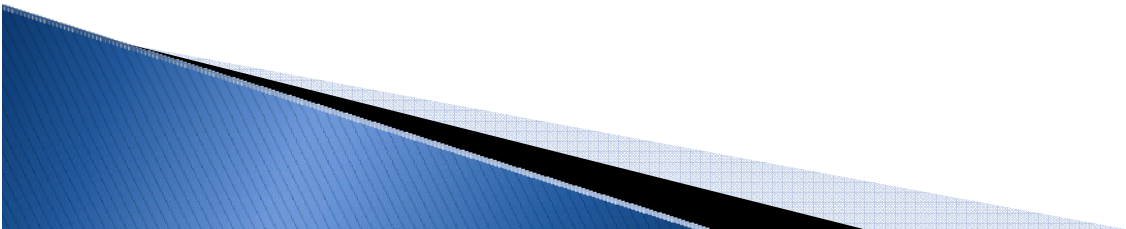
Both ORDER and ORDER=

VISIT IS SORTED IN THE DESIRED CHRONOLOGICAL ORDER

VSTEST	VISIT
DBP	Visit 0 - Pre
	Treatment 1
	Treatment 2
	Treatment 3
SBP	Visit 0 - Pre
	Treatment 2
	Treatment 3

Conclusion

- ▶ While order may or may not work on its own, the order with order= creates a better, more stable, program for generating reports for customers.



References

- ▶ Carpenter, Arthur L. (2005), *PROC REPORT Basics: Getting Started with the Primary Statements*, Paper HOW07, [PharmaSUG 2005](#).
- ▶ McMahon, Allison (2007), *Beyond the Basics: Advanced PROC REPORT Tips and Tricks*, Paper 276–2007, SAS Institute Inc.
- ▶ <http://www.listserv.uga.edu/cgi-bin/wa?A2=ind0207D&L=sas-l&P=40236>, "SAS(r) Discussion" <SAS-L@LISTSERV.UGA.EDU, Date: Thu, 25 Jul 2002 15:15:37 -0400 From: Ray Pass, Subject: [Re: Proc report, problem using order ?](#) Comments: To: "Huang, Ya"
- ▶ Pass, Ray and Ewing, Daphne (2006), *So You're Still Not Using Proc Report. Why Not?*, SUGI 31 Proceedings, Paper 235–31.
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