

Print the Proc Report and Have It on My Desktop in the Morning!

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ABSTRACT

The user will learn how to produce detail and summary reports as well as frequency tables with SAS procedures. These reports will be enhanced with labels, formats, titles, and footnotes.

This paper will introduce the user to producing HTML reports with ODS.

INTRODUCTION

Create summary tables with the PROC TABULATE statement and options.

Enhance summary tables with advanced variable relationships, variable formats, and statistical calculations.

Publish summary tables with labels, fonts, and colors using ODS and by fonts, and by ordering class variables.

AGENDA

Summary Tables architecture

Proc Tabulate statement

Simple Summary Tables

Complex Summary Tables

Publish Summary Tables

VOCABULARY

Cells are referred to as the intersection of two or more variables.

Cross-tabulation is the process of crossing variables to form intersections.

Crossed variables occur when two or more variables intersect.

Summary tables display relationships among variables in a data set.

Hierarchical tables are formed by variables crossed in a single dimension so that they are placed within values.

OVERVIEW

SAS data sets form columns, rows, and pages.

Data at the intersection of a column and row is related to the column and row variables.

SUMMARY TABLES ARCHITECTURE

Determine the question that the summary table should answer.

Choose discrete classes (e.g. low, medium, high or a range such as 1-50 or 51-100) rather than continuous variables (e.g. 1,2,3,...) to answer the question.

Use data formats.

Cleanse data for relevancy, completeness and validity.

Select statistics that will answer the question posed by the summary table.

Consider table structure for crossing values.

PROC TABULATE STEP

The Proc Tabulate Step usually requires its syntax to be in the following order: a Proc Tabulate statement; a Class statement or Var statement or both; and a Table statement. Multiple Class, Var, and Table statements are allowed in the Proc Tabulate step.

TABLE STATEMENT

Table page-expression, row expression, column-expression;

The Table statement requires a column-expression.

Variables must be in either a Class or Var statement, but not both.

Analysis variables cannot be crossed so only one dimension can contain so only one dimension can contain analysis variables.

SIMPLE SUMMARY TABLES

ONE-DIMENSIONAL SUMMARY TABLE

```
options linesize=80 pageno=1 nodate;
data year_sales;
input Month Quarter SalesRep $6. Type $8. Units Price;
AmountSold=Units*Price;
datalines;
01 1 Vaughn Super 260 49.50
02 1 Garcia Basic 441 30.97
03 1 Jagger Super 330 49.50
04 2 Jagger Basic 111 30.97
05 2 Garcia Basic 715 30.97
06 2 Vaughn Super 675 49.50
07 3 Jagger Basic 445 30.97
08 3 Garcia Super 110 49.50
09 3 Vaughn Super 110 49.50
10 4 Vaughn Super 125 49.50
11 4 Jagger Basic 125 30.
12 4 Garcia Super 175 49.50
;
proc tabulate data=year_sales format=comma10. missing;
title1 'Electric Guitars'
title2 'Sales of Basic versus Super Model';
class SalesRep;
table SalesRep;
run;
```

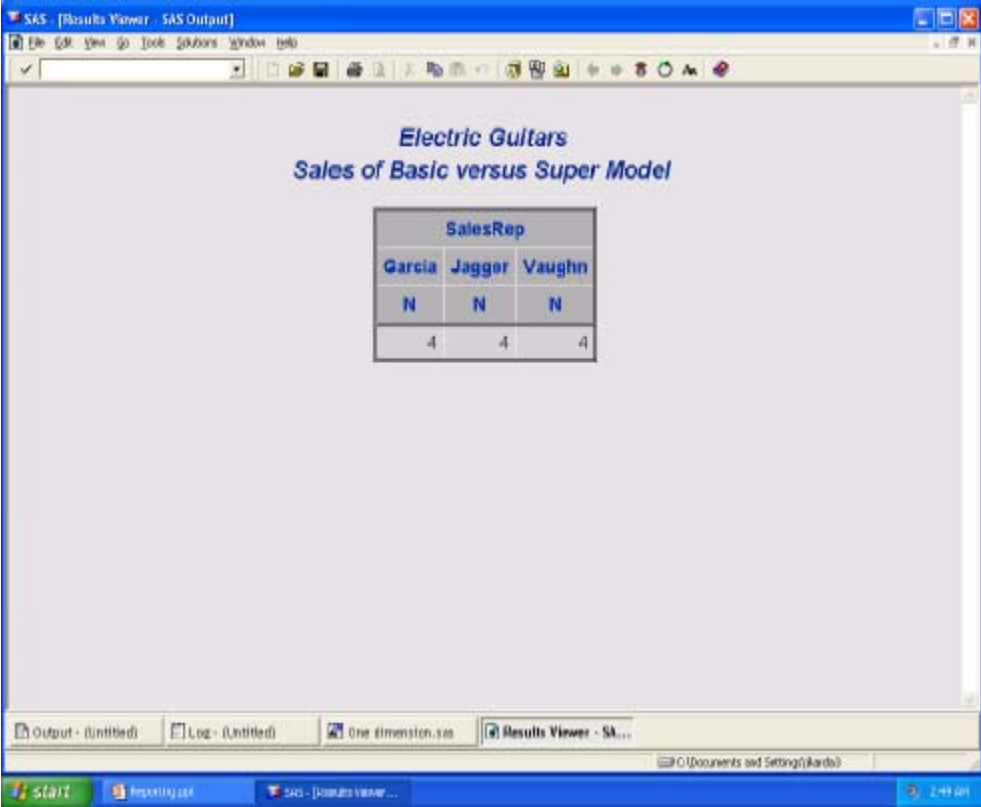
ONE-DIMENSIONAL SUMMARY TABLE

```
2115 options linesize=80 pageno=1 nodate;
2116
2117 data year_sales;
2118 input Month Quarter SalesRep $6. Type $8. Units Price;
2119 AmountSold=Units*Price;
2120 datalines;
NOTE: The data set WORK.YEAR_SALES has 12 observations and 7 variables.
NOTE: DATA statement used:
real time 0.08 seconds
cputime 0.08 seconds

2133 ;
2134
2135 proc tabulate data=year_sales format=comma10. missing;
2136 title1 'Electric Guitars';
2137 title2 'Sales of Basic versus Super Model';
2138 class SalesRep;
2139 table SalesRep;
2140 run;

NOTE: There were 12 observations read from the data set WORK.YEAR_SALES.
PROCEDURE TABULATE used:
real time 0.19 seconds
cputime 0.17 seconds
```

ONE-DIMENSIONAL SUMMARY TABLE DIMENSIONAL SUMMARY TABLE



TWO-DIMENSIONAL SUMMARY TABLE DIMENSIONAL SUMMARY TABLE

```
options linesize=80 pageno=1 nodate;
ods html file='summary-table.htm';
ods printer file='summary-table.ps';
data year_sales;
input Month Quarter SalesRep $6. Type $8. Units Price;
AmountSold=Units*Price;
datalines;
01 1 Vaughn Super 260 49.50
02 1 Garcia Basic 441 30.97
03 1 Jagger Super 330 49.50
04 2 Jagger Basic 111 30.97
05 2 Garcia Basic 715 30.97
06 2 Vaughn Super 675 49.50
07 3 Jagger Basic 445 30.97
08 3 Garcia Super 110 49.50
09 3 Vaughn Super 110 49.50
10 4 Vaughn Super 125 49.50
11 4 Jagger Basic 125 30.97
12 4 Garcia Super 175 49.50
;
proc tabulate data=year_sales year_sales format=comma10. missing;
title1 'Electric Guitars';
title2 'Sales of Basic versus Super Model';
class SalesRep;
var AmountSold;
table SalesRep, AmountSold;
run;
ods html close;
ods printer close;
```

TWO-DIMENSIONAL SUMMARY TABLE

```
2173 options linesize=80 pageno=1 nodate;
2174 odshtmlfile='summary-table.htm';
NOTE: Writing HTML Body file: summary-table.htm
2175 odsprinter file='summary-talbe.ps';
NOTE: Writing ODS PRINTER output to DISK destination
"C:\Documents and Settings\jkarda3\summary-talbe.ps", printer "UPrint-PCL".
2176 data year_sales;
2177 input Month Quarter SalesRep $6. Type $8. Units Price;
2178 AmountSold=Units*Price
2179 datalines;
```

NOTE: The data set WORK.YEAR_SALES has 12 observations and 7 variables.

NOTE: DATA statement used:

real time 1.60 seconds

cputime 0.07 seconds

```
2192 ;
2193 proctabulate data=year_salesformat=comma10. missing;
2194 title1 'Electric Guitars';
2195 title2 'Sales of Basic versus Super Model';
2196 class SalesRep;
2197 var AmountSold;
2198 table SalesRep,
2199 AmountSold;
2200 run;
```

NOTE: There were 12 observations read from the data set WORK.YEAR_SALES.

NOTE: PROCEDURE TABULATE used:

real time 1.89 seconds

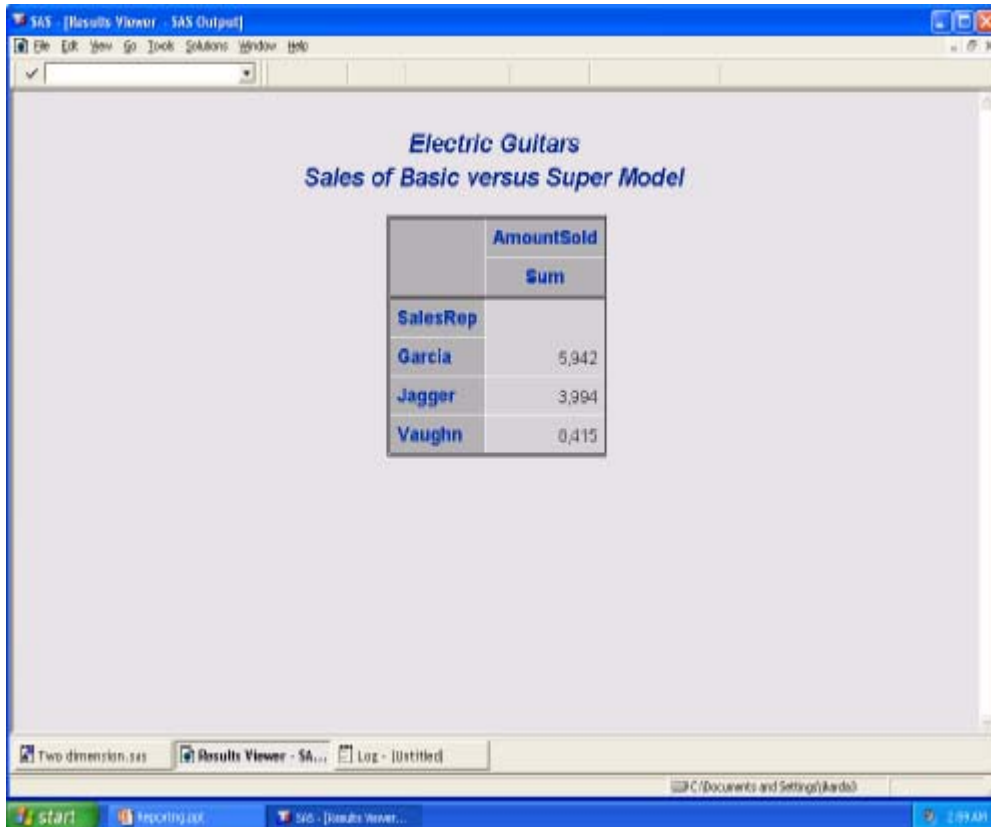
cputime 0.44 seconds

2201 odshtmlclose;

2202 odsprinter close;

NOTE: ODS PRINTER printed 1 page to C:\Documents and Settings\jkarda3\summary-talbe.ps.

TWO-DIMENSIONAL SUMMARY TABLE



The screenshot displays the SAS Results Viewer window. The title bar reads 'SAS - [Results Viewer - SAS Output]'. The menu bar includes 'File', 'Edit', 'View', 'Go', 'Tools', 'Solutions', 'Window', and 'Help'. The main content area shows a table titled 'Electric Guitars Sales of Basic versus Super Model'. The table has two columns: 'SalesRep' and 'AmountSold'. The 'AmountSold' column is further divided into a 'Sum' sub-column. The data rows are for Garcia (5,942), Jagger (3,994), and Vaughn (0,415). The status bar at the bottom shows 'Two dimension.sas', 'Results Viewer - SA...', 'Log - [Untitled]', and the file path 'C:\Documents and Settings\jkarda3\'. The Windows taskbar at the very bottom shows the 'start' button, 'Reporting.rtf', 'SAS - [Results Viewer...]', and the system clock '2:59 AM'.

	AmountSold
	Sum
SalesRep	
Garcia	5,942
Jagger	3,994
Vaughn	0,415

THREE-DIMENSIONAL SUMMARY TABLES

```
options linesize=80 pageno=1 nodate;
ods html file='summary-table.htm';
ods printer file='summary-talbe.ps';
datayear_sales;
input Month Quarter SalesRep $6. Type $8. Units Price;
AmountSold=Units*Price;
datalines;
01 1 Vaughn Super 260 49.50
02 1 Garcia Basic 441 30.97
03 1 JaggerSuper 330 49.50
04 2 JaggerBasic 111 30.97
05 2 Garcia Basic 715 30.97
06 2 Vaughn Super 675 49.50
07 3 JaggerBasic 445 30.97
08 3 Garcia Super 110 49.50
09 3 Vaughn Super 110 49.50
10 4 Vaughn Super 125 49.50
11 4 JaggerBasic 125 30.97
12 4 Garcia Super 175 49.50
;

proc tabulatedata=year_salesformat=comma10. missing;
title1 'Electric Guitars';title2 'Sales of Basic versus Super Model';class
SalesRep Quarter;
var AmountSold;
tableSalesRep,Quarter,AmountSold;
run;
odshtmlclose;
odsprinter close;
```

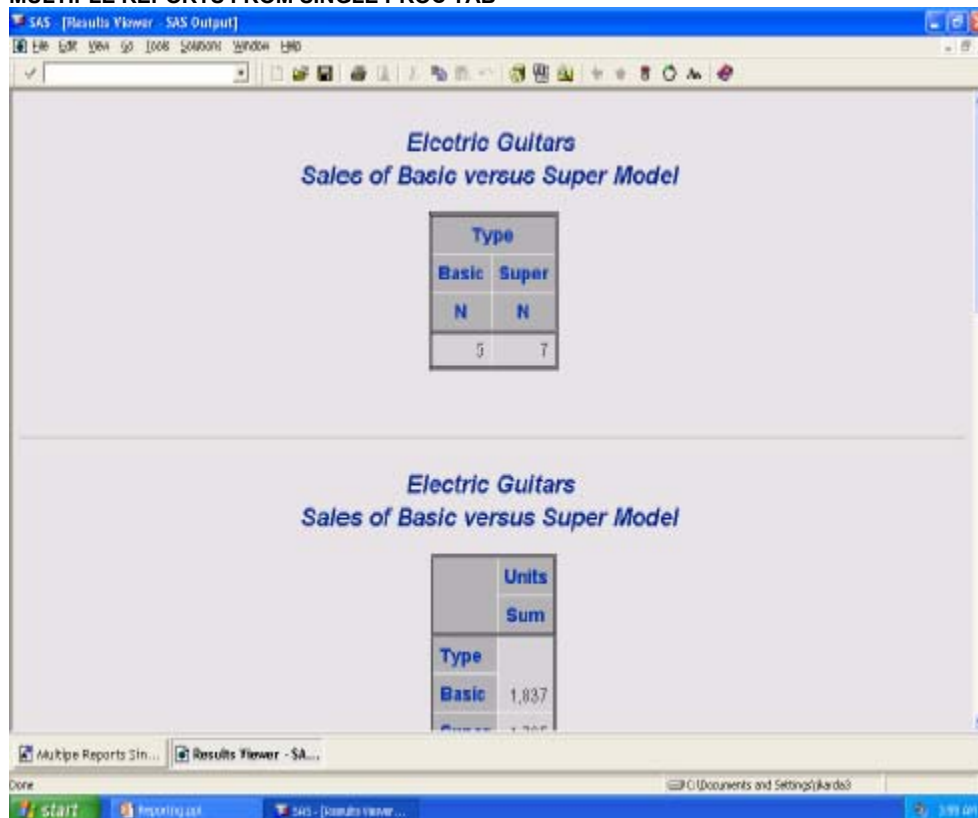
THREE-DIMENSIONAL SUMMARY TABLES

```
62 options linesize=80 pageno=1 nodate;
63 odshtmlfile='summary-table.htm';
NOTE: Writing HTML Body file: summary-table.htm
64 odsprinter file='summary-talbe.ps';
NOTE: Writing ODS PRINTER output to DISK destination
"C:\Documents and Settings\jkarda3\summary-talbe.ps", printer "UPrint-PCL".
65 data year_sales;
66 input Month Quarter SalesRep $6. Type $8. Units Price;
67 AmountSold=Units*Price;
68 datalines;

NOTE: The data set WORK.YEAR_SALES has 12 observations and 7 variables.
NOTE: DATA statement used:
real time 0.07 seconds
cputime 0.07 seconds
81 ;
82 proctabulate data=year_salesformat=comma10. missing;
83 title1 'Electric Guitars';
84 title2 'Sales of Basic versus Super Model';
85 class SalesRep Quarter;
86 var AmountSold;
87 table SalesRep,
88 Quarter,
89 AmountSold;
90 run;
```

NOTE: There were 12 observations read from the data set WORK.YEAR_SALES.
 NOTE: PROCEDURE TABULATE used:
 real time 1.98 seconds
 cputime 0.95 seconds
 91 odshtmlclose;
 92 odsprinter close;
 NOTE: ODS PRINTER printed 3 pages to C:\Documents and Settings\jkarda3\summary-talbe.ps.

MULTIPLE REPORTS FROM SINGLE PROC TAB



ENHANCE SUMMARY TABLES

The expression SalesRep*Type in the row dimension crosses the Type values to the right of SalesRep values with repeating values for Type.

Crossing variables with format modifiers using an asterisk will override formats in the summary table.

Class variables can only be crossed with frequency and percent statistic. Sum is the default frequency and percent statistic.

A space between elements enclosed with parentheses concatenates the second and subsequent elements after the first element. The universal class variable is ALL.

PUBLISHING SUMMARY TABLES

Follow variables with an equal sign to add remove labels in the Table statement.

Font style, weight, and color can be defined to create output from Proc Tabulate other than Listing or Output destinations.

Style elements specified for cells in summary table by crossing the Style= option with an element of a

dimension expression (use brackets or braces dimension expression).

Precede and follow the procedure with ODS Html/Printer statements.

Order class variable values and their headings display in a summary table with the Order= option. Sort orders include Data, Formatted, Freq, and Unformatted.

SUMMARY

Title<1-10 with no intervening spaces><'title' up to 132-256 characters long depending on o/s'>;

Proc Tabulate<option(s) including Data=, Format=, Missing, and Order=(Data, Formatted, Freq, Unformatted)>;

CLASS variables include missing and order=</options similar to order= above>;

Var analysis-variable(s);

Table<<page-expression,><row-expression,><column expression>> dimension expression; and

Operators include: commas for dimensions; asterisks for crossing; blank spaces for concatenating; equal signs for formats or labels; parentheses for grouping; and square brackets or braces for style attributes.

ABOUT THE AUTHOR

James holds a BBA from Loyola University Chicago and a MBA from the University of Illinois at Chicago, where he is pursuing a MS degree in MIS within the IDS Department of the Liautaud Graduate School of Management.

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