

Paper 179-30

Summary Tables in SAS® Enterprise Guide® PROC TABULATE Made Easy

Susan J. Slaughter, Avocet Solutions, Davis, CA
Lora D. Delwiche, University of California, Davis, CA

ABSTRACT

This paper shows, step-by-step, how to use the Summary Tables task in Enterprise Guide to produce polished reports. Summary Tables is based on the TABULATE procedure, but you don't need to know how to use PROC TABULATE or even how to write SAS programs to use this feature. Whether you are a seasoned SAS programmer or new to SAS, Summary Tables can make creating summary reports easier.

INTRODUCTION

The TABULATE procedure in SAS is a powerful way to create complex and attractive reports. However, getting your report arranged just the way you want it can take extensive trial and error. Enterprise Guide to the rescue....

The Summary Tables task in Enterprise Guide is a point-and-click interface to the TABULATE procedure. Using it you can easily arrange and rearrange your report to see how it will look before you even run it. You can also change titles, headers, fonts, colors, and data formats. In fact, practically any feature you can set in PROC TABULATE code in SAS you can change interactively in Summary Tables. Summary Tables is faster, easier, and saves you from having to figure out where to put all those asterisks and parentheses. Once you've perfected your table in Enterprise Guide, you can, if you wish, save the code and run it from the SAS System.

OPENING THE SUMMARY TABLES TASK

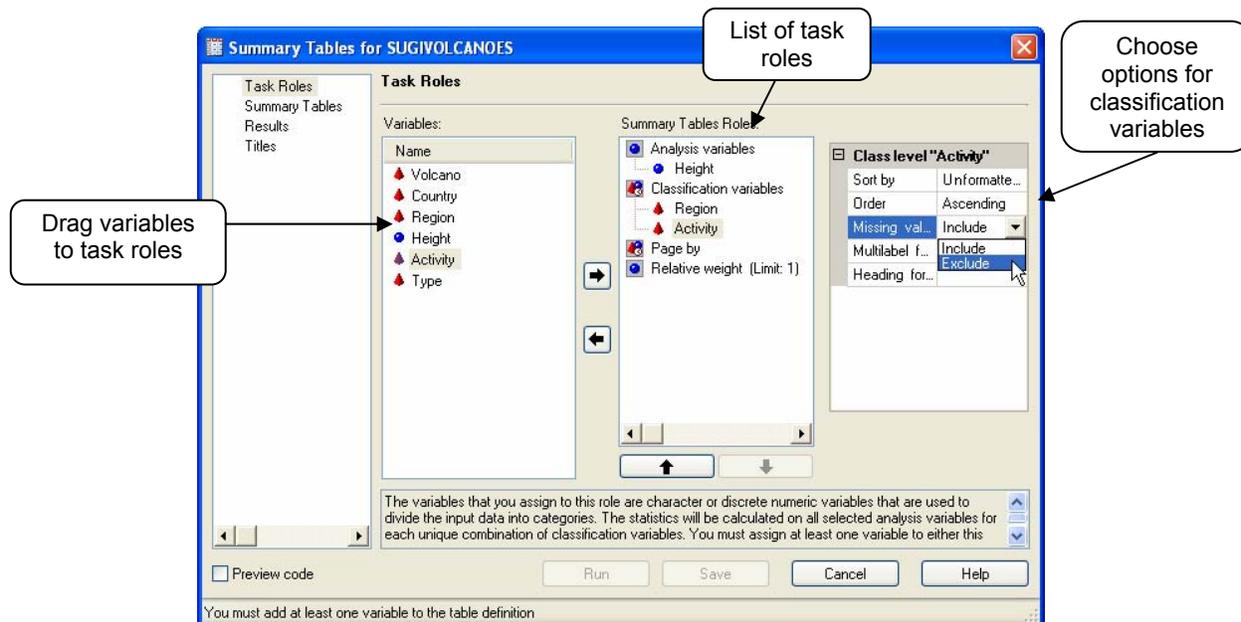
To make a data set active, click on its icon in the Process Flow or Project window. Then open the Summary Tables task by selecting **Describe** ► **Summary Tables** from the menu bar. Enterprise Guide will open a Summary Tables window for the active data set. All the images in this paper were produced using SAS Enterprise Guide 3.1.

The screenshot shows the SAS Enterprise Guide 3.1 interface. On the left, three callout boxes point to specific parts of the interface: 'Menus' points to the 'Describe' menu, 'Process Flow window' points to the 'Process Flow' pane, and 'Data Grid displaying Volcanoes data' points to the 'SUGIVolcanoes' data grid.

	Volcano	Country	Region	Height	Activity	Type
1	Altar	Ecuador	South America	5321	Extinct	Stratovolcano
2	Arthur's Seat	UK	Europe	251	Extinct	
3	Barren Island	India	Asia	354	Active	Stratovolcano
4	Elbrus	Russia	Europe	9633	Extinct	Stratovolcano
5	Erebus		Antarctica	3794	Active	Stratovolcano
6	Etna	Italy	Europe	3350	Active	Stratovolcano
7	Fuji	Japan	Asia	3776	Active	Stratovolcano
8	Garibaldi	Canada	North America	2678		Stratovolcano
9	Grimsvothn	Iceland	Europe	1725	Active	Caldera
10	Illimani	Bolivia	South America	6458	Extinct	Stratovolcano
11	Kenya	Kenya	Africa	5199	Extinct	
12	Kilauea	USA	Australia/Pacific	1222	Active	Shield
13	Kilimanjaro	Tanzania	Africa	5895		Stratovolcano
14	Kluchevskoi	Russia	Asia	4835	Active	Stratovolcano
15	Krakatau	Indonesia	Asia	813	Active	Caldera
16	Lassen	USA	North America	3187	Active	Stratovolcano
17	Mauna Loa	USA	Australia/Pacific	4170	Active	Shield

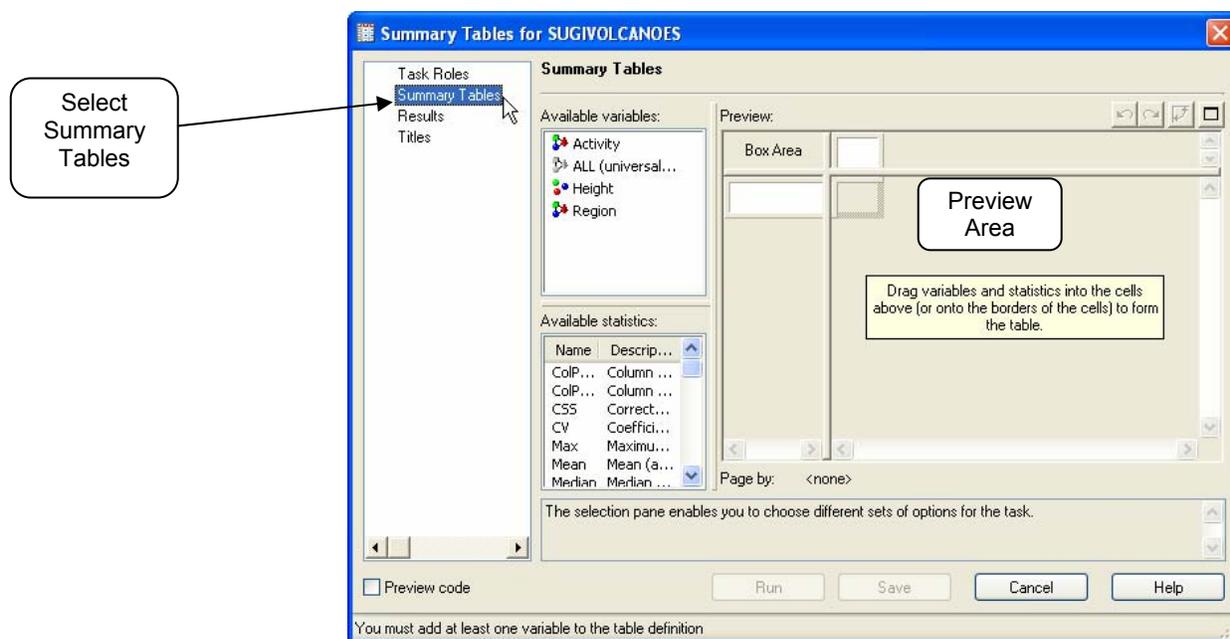
TASK ROLES PANE

Before you can do anything else in Summary Tables, you must assign variables to task roles. To do this, drag a variable from the list of variables to the list of task roles. You must have at least one analysis or classification variable. Classification variables are ones whose values will form the rows, columns or pages of the report. Classification variables may be numeric or character. Analysis variables are ones whose values will be summarized in the data cells of the table. Analysis variables must be numeric. For classification variables, you may set some options in the Task Roles pane including sort order and whether missing values will be included.

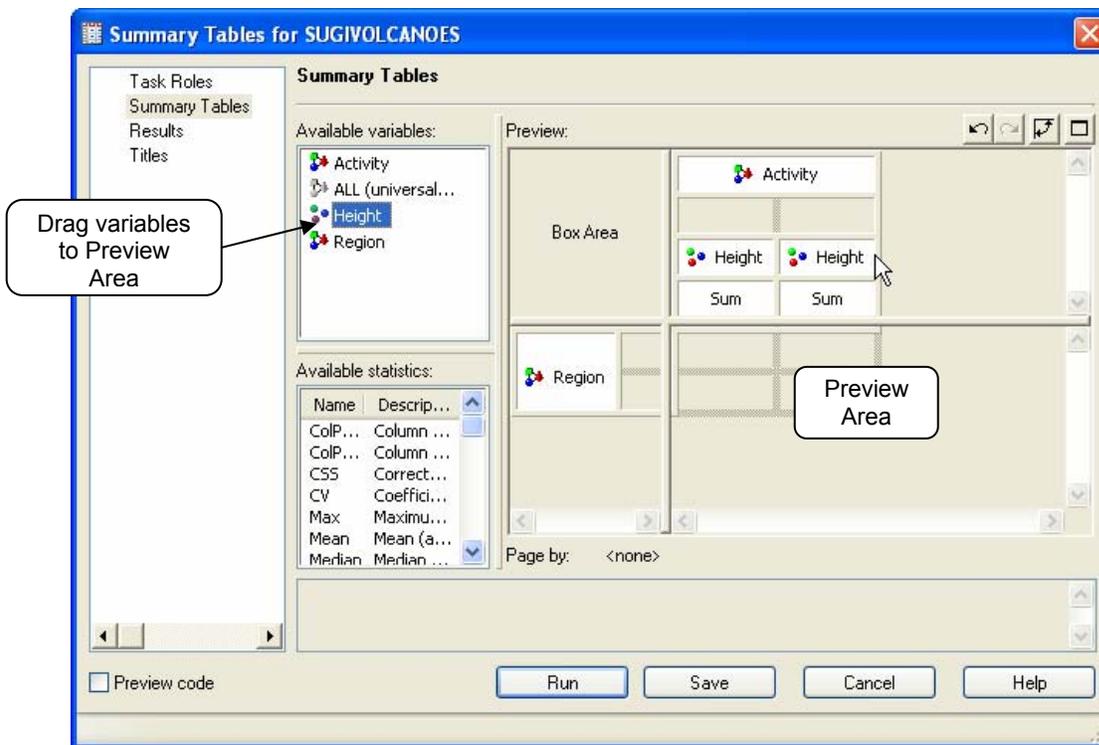


SUMMARY TABLES PANE

Before you can run a report, you must tell Enterprise Guide how to arrange the report. To open the Summary Tables pane, click Summary Tables in the list of options on the left.



To assign a variable to serve as rows or columns of your report, drag the variable name from the list of Available Variables to the Preview area. It may take a little practice to get variables where you want them. The trick is to watch the cursor. If the cursor looks like the universal not symbol, \otimes , then you cannot drop the variable. When the cursor changes to a line or a box, then you can drop the variable.



Once the variables are where you want them, click Run to see your report.

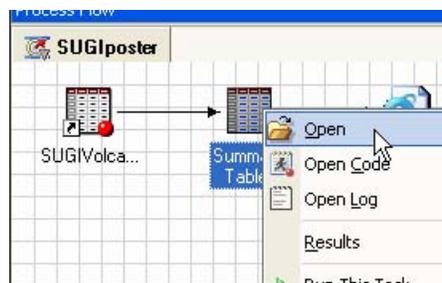
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Summary Tables

Region	Activity	
	Active	Extinct
	Height	Height
	Sum	Sum
Africa	6528.00	5199.00
Antarctica	3794.00	.
Asia	11264.00	.
Australia/Pacific	8189.00	1125.00
Europe	6723.00	7348.00
North America	14019.00	.
South America	15093.00	11779.00

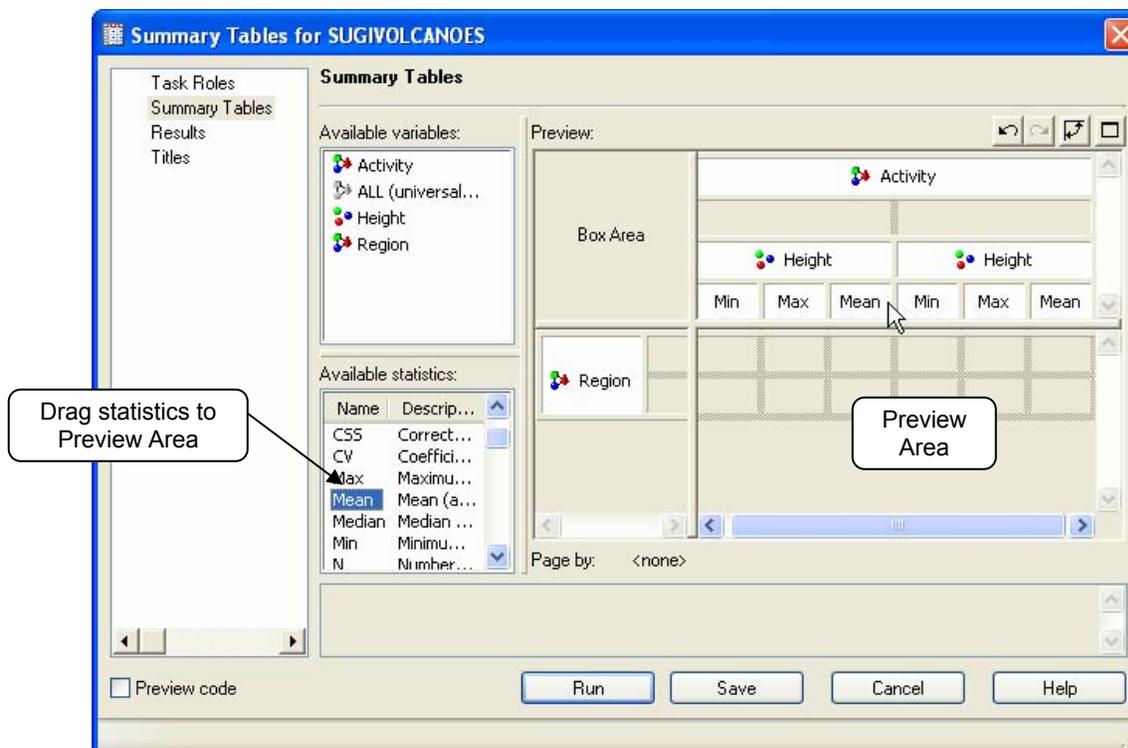
Generated by the SAS System (Local, XP_PRO) on 12.JAN2005 at 2:31 PM

To re-open a task so you can make changes to it, double-click the Summary Tables task icon in the Process Flow or Project window, or right-click and select Open.



CHOOSING STATISTICS

The default statistic for a classification variable is N (the number of observations in that group), and the default statistic for an analysis variable is SUM (the total of the values in that group). You can insert other statistics into your table by clicking on an item in the Available Statistics box and dragging it to the Preview area.



Once the variables are where you want them, click Run to see your report.

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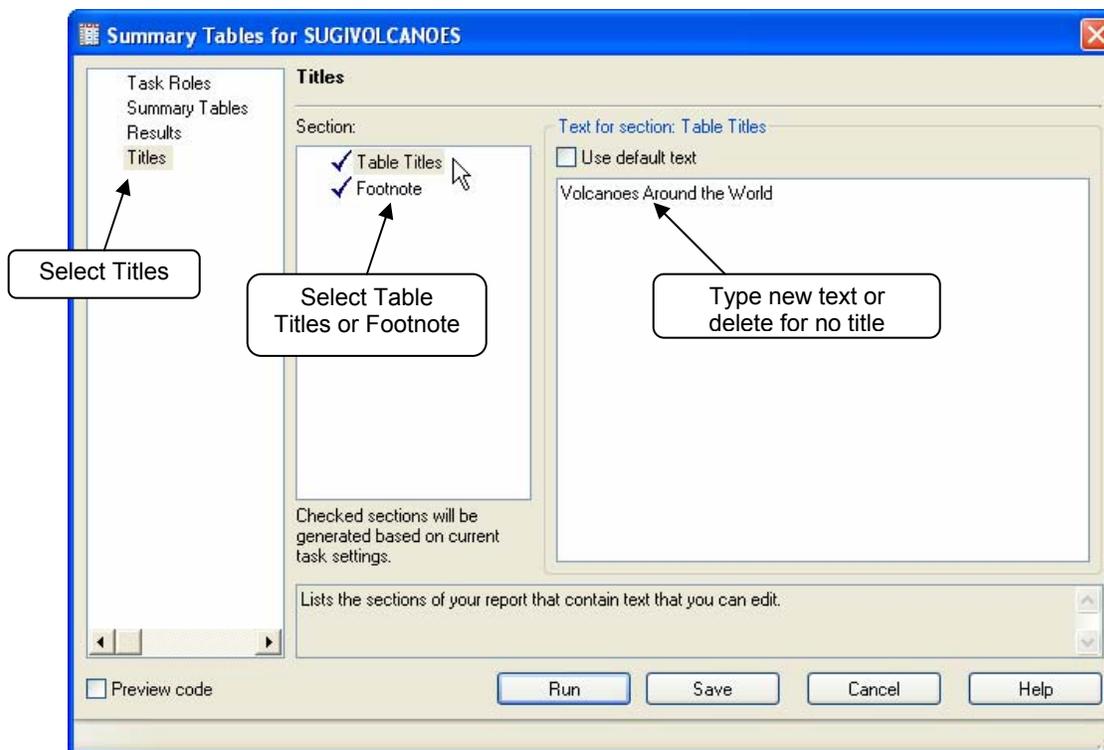
Summary Tables

	Activity					
	Active			Extinct		
	Height			Height		
	Min	Max	Mean	Min	Max	Mean
Region						
Africa	3058.00	3470.00	3264.00	5199.00	5199.00	5199.00
Antarctica	3794.00	3794.00	3794.00	.	.	.
Asia	354.00	4835.00	2252.80	.	.	.
Australia/Pacific	1222.00	4170.00	2729.67	1125.00	1125.00	1125.00
Europe	367.00	3350.00	1680.75	251.00	5633.00	2449.33
North America	2549.00	5426.00	3504.75	.	.	.
South America	2708.00	5976.00	3773.25	5321.00	6458.00	5889.50

Generated by the SAS System (Local, XP_PRO) on 12JAN2005 at 2:35 PM

CHANGING TITLES AND FOOTNOTES

You will probably want to change the titles and footnotes. To open the Titles pane, click Titles in the list on left. Click Table Titles, uncheck the Use Default Text box, and type in the new title (or delete the text to have no title). For footnotes, click on Footnote and do the same.



To see the report with the new title and footnote (in this case, no footnote), click Run.

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Volcanoes Around the World

	Activity					
	Active			Extinct		
	Height			Height		
	Min	Max	Mean	Min	Max	Mean
Region						
Africa	3058.00	3470.00	3264.00	5199.00	5199.00	5199.00
Antarctica	3794.00	3794.00	3794.00	.	.	.
Asia	354.00	4635.00	2252.80	.	.	.
Australia/Pacific	1222.00	4170.00	2729.67	1125.00	1125.00	1125.00
Europe	367.00	3350.00	1680.75	251.00	5633.00	2449.33
North America	2549.00	5426.00	3504.75	.	.	.
South America	2708.00	5976.00	3773.25	5321.00	6458.00	5889.50

CHANGING BOX AREA PROPERTIES

There is always an empty box in the upper right corner of a Summary Tables report. To put text in this box, right-click anywhere in the Preview area. Then select Box Area Properties, and type in the text you want.

The screenshot shows the SAS Summary Tables interface. On the left, a tree view shows 'Task Roles', 'Summary Tables', 'Results', and 'Titles'. The main area is divided into 'Available variables' (Activity, ALL (universal...), Height, Region) and 'Available statistics' (CSS, CV, Max, Mean, Median, Min, N). The 'Preview' area shows a table with columns for 'Activity', 'Height', and 'Region'. A context menu is open over the 'Box Area' in the preview, with 'Box Area Properties...' selected. A callout box points to this menu item with the text 'Right-click, Select Box Area Properties'. Another callout box points to the 'Summary Tables' window with the text 'Select Summary Tables'. A 'Box Area Properties' dialog box is open in the foreground, showing the 'General' tab. The 'Label' section has 'Use the following text:' selected, and the text 'Height (in meters)' is entered in the input field. A callout box points to this text with the text 'Type text'. The 'Wrap label text' checkbox is checked. The 'OK' button is highlighted.

Click Run to see your report with the new box area label.

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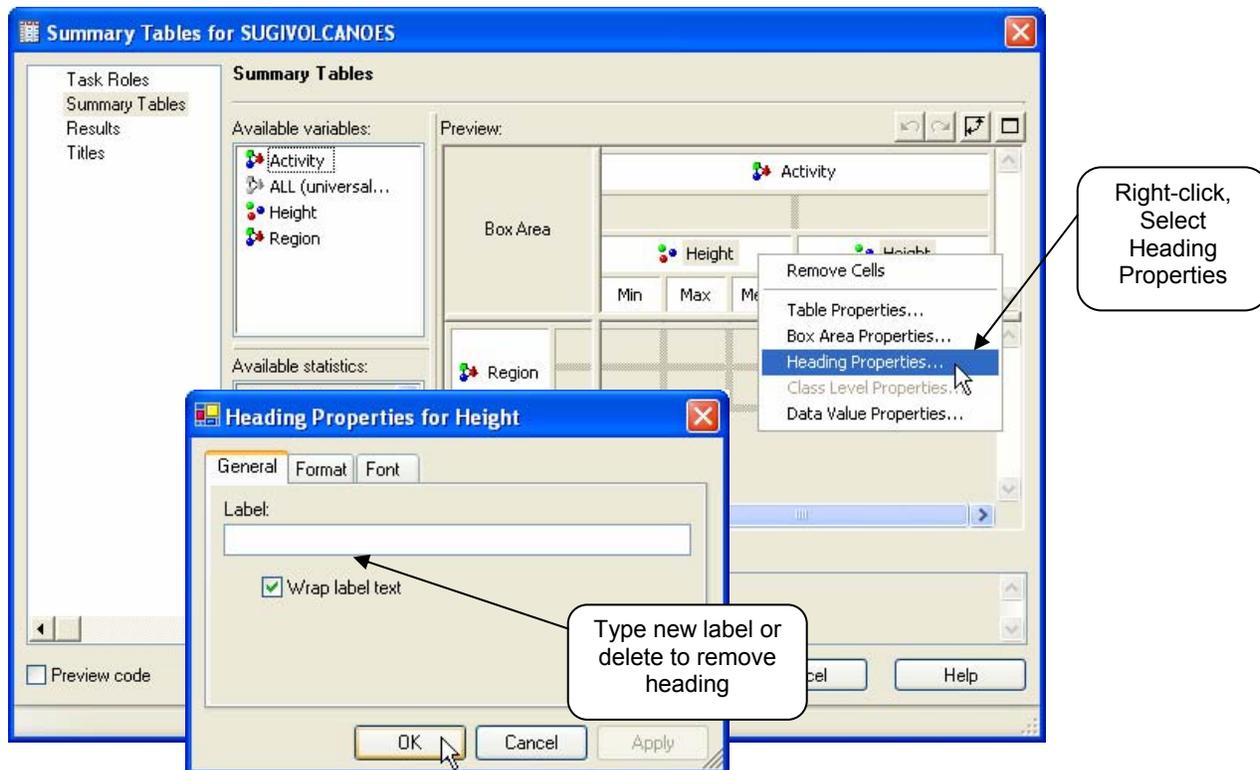
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Volcanoes Around the World

Height (in meters)	Activity					
	Active			Extinct		
	Height			Height		
	Min	Max	Mean	Min	Max	Mean
Region						
Africa	3058.00	3470.00	3264.00	5199.00	5199.00	5199.00
Antarctica	3794.00	3794.00	3794.00	.	.	.
Asia	354.00	4835.00	2252.80	.	.	.
Australia/Pacific	1222.00	4170.00	2729.67	1125.00	1125.00	1125.00
Europe	367.00	3350.00	1680.75	251.00	5633.00	2449.33
North America	2549.00	5426.00	3504.75	.	.	.
South America	2708.00	5976.00	3773.25	5321.00	6458.00	5889.50

CHANGING ROW OR COLUMN HEADING PROPERTIES

Summary Tables uses the names of the variables for row and column headings. You may want to change them to more descriptive labels, or remove them entirely. To do this, right-click on the heading you want to change and select Heading Properties. In the Heading Properties window you can type in a new label. If you change the label to blank, then Enterprise Guide will delete that heading from the table.



Click Run to see your report with the new headings.



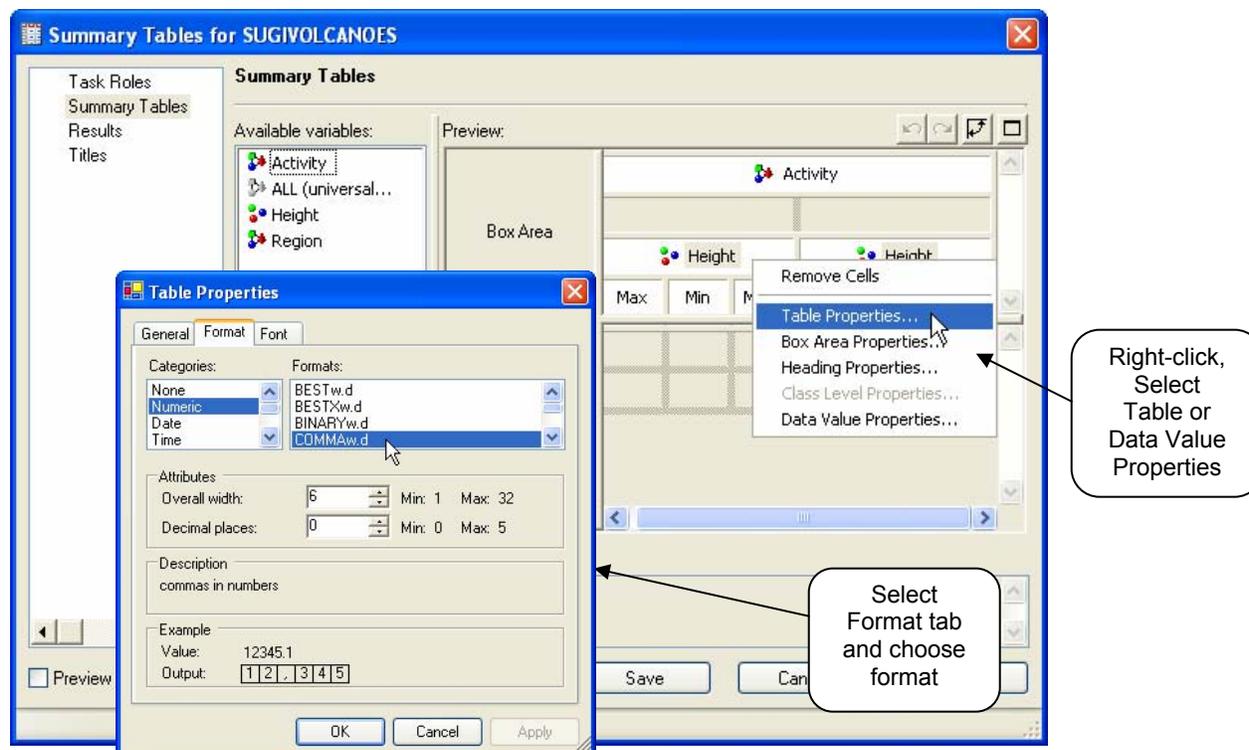
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Volcanoes Around the World

Height (in meters)	Active			Extinct		
	Min	Max	Mean	Min	Max	Mean
Region						
Africa	3058.00	3470.00	3264.00	5199.00	5199.00	5199.00
Antarctica	3794.00	3794.00	3794.00	.	.	.
Asia	354.00	4835.00	2252.80	.	.	.
Australia/Pacific	1222.00	4170.00	2729.67	1125.00	1125.00	1125.00
Europe	367.00	3350.00	1680.75	251.00	5633.00	2449.33
North America	2549.00	5426.00	3504.75	.	.	.
South America	2708.00	5976.00	3773.25	5321.00	6458.00	5889.50

CHANGING TABLE OR DATA VALUE PROPERTIES

If you want to make a change to all the data cells in a report, right-click anywhere in the Preview area and select Table Properties. However, if you want to make a change to just one row or column, right-click on the heading for that row or column and select Data Value Properties. Select the Format tab and specify the format you wish.



Click Run to see the report with the new data format.

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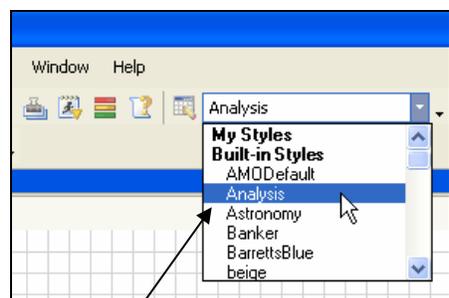
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Volcanoes Around the World

Height (in meters)	Active			Extinct		
	Max	Min	Mean	Max	Min	Mean
Region						
Africa	3,470	3,058	3,264	5,199	5,199	5,199
Antarctica	3,794	3,794	3,794	.	.	.
Asia	4,835	354	2,253	.	.	.
Australia/Pacific	4,170	1,222	2,730	1,125	1,125	1,125
Europe	3,350	367	1,681	5,633	251	2,449
North America	5,426	2,549	3,505	.	.	.
South America	5,976	2,708	3,773	6,458	5,321	5,890

CHANGING THE OVERALL STYLE

Enterprise Guide comes with many built-in style templates, and you can create your own custom style templates using the Style Manager. Once you have created a report, you can easily change its style by selecting a different style template from the Style box on the menu bar. Here is how this report looks in the Analysis style.



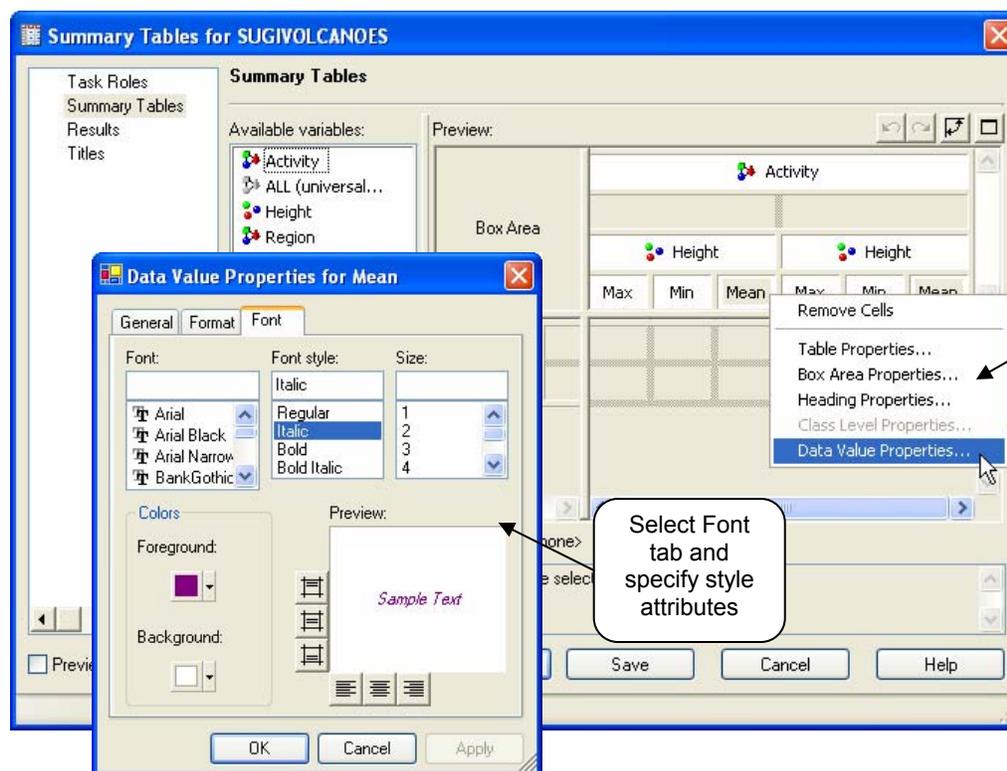
Select a style template

Volcanoes Around the World

<i>Height (in meters)</i>	<i>Active</i>			<i>Extinct</i>		
	<i>Max</i>	<i>Min</i>	<i>Mean</i>	<i>Max</i>	<i>Min</i>	<i>Mean</i>
<i>Region</i>						
<i>Africa</i>	3,470	3,058	3,264	5,199	5,199	5,199
<i>Antarctica</i>	3,794	3,794	3,794	.	.	.
<i>Asia</i>	4,835	354	2,253	.	.	.
<i>Australia/Pacific</i>	4,170	1,222	2,730	1,125	1,125	1,125
<i>Europe</i>	3,350	367	1,681	5,633	251	2,449
<i>North America</i>	5,426	2,549	3,505	.	.	.
<i>South America</i>	5,976	2,708	3,773	6,458	5,321	5,890

CHANGING OTHER STYLE ELEMENTS

In addition to changing the overall style of a report, you can also change the style of almost any part of a report using the Font tab of the various Properties windows.

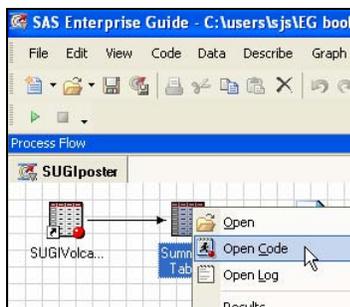


Click Run to see your report with the new style attributes.

Height (in meters)	Active			Extinct		
	Max	Min	Mean	Max	Min	Mean
Region						
Africa	3,470	3,058	3,264	5,199	5,199	5,199
Antarctica	3,794	3,794	3,794	.	.	.
Asia	4,835	354	2,253	.	.	.
Australia/Pacific	4,170	1,222	2,730	1,125	1,125	1,125
Europe	3,350	367	1,681	5,633	251	2,449
North America	5,426	2,549	3,505	.	.	.
South America	5,976	2,708	3,773	6,458	5,321	5,890

VIEWING THE SAS CODE

To view the code produced by Summary Tables, right-click the Summary Tables icon and select Open Code. Enterprise Guide will open a Code window containing the complete program including PROC TABULATE. You can edit and save this program for later use in Enterprise Guide or the SAS System.



```

SUGIVolcanoes [Summary Tables] [Code]
-----
/* -----
Run the tabulate procedure
----- */
PROC TABULATE
  DATA=ECLIB000.SUGIVOLCANOES
  FORMAT=COMMA6.0
  ;
  VAR Height;
  CLASS Region / ORDER=UNFORMATTED MISSING;
  CLASS Activity / ORDER=UNFORMATTED;
  TABLE /* Row Dimension */
    Region,
    /* Column Dimension */
    Activity=(LABEL='')*
    Height=(LABEL='')*{
      Max
      Min
      Mean*(STYLE={FONT_WEIGHT=MEDIUM FONT_STYLE=ITALIC FOREGROUND=#800080})
    } /* Table Options */
  / BOX=(LABEL='Height (in meters)') ;
  ;
RUN;
/* -----
End of task code.
----- */

```

CONCLUSION

The Summary Tables task in Enterprise Guide is easy-to-use and gives you access to practically any feature of the TABULATE procedure. It's so easy that even experienced SAS programmers may want to use Summary Tables to generate reports or code for use in SAS.

ABOUT THE AUTHORS

Susan Slaughter and Lora Delwiche are the authors of *The Little SAS Book: A Primer* published by SAS Institute. They may be contacted at:

Susan J. Slaughter (530)756-8434
susan@avocetsolutions.com
 Lora D. Delwiche (530) 752-9321
lldelwiche@ucdavis.edu

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