

CHAPTER

9

Defining a New Column

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Chapter Overview

You can create new columns from existing data. For example, you may want to know the cost per square foot for each house in the HOUSES table. This information does not exist in the HOUSES table. However, by using SAS/ASSIST software, you can create a new column that contains this data in a new table. New columns cannot be added to existing tables.

This chapter shows you how to determine the cost per square foot for each house in the HOUSES table, and how to store that information in a new column in a new table.

Additional Information

For additional information about defining columns, refer to the *SAS Language Reference: Dictionary*.

Defining a New Column

Instructions

- 1 To define a new column, follow this selection path:

Tasks ► Data Management ► Subset/Copy

The Subset or Copy a Table window appears.

Display 9.1 Subset or Copy a Table Window

SAS/ASSIST: Subset or Copy a Table <Untitled>

File Edit View Tools Run Tasks Help

Table: -REQUIRED-

Output data: -REQUIRED- Will be created as a: TABLE

Subset and transform the data:

Currently selected rows: -ALL-

Currently selected columns: -ALL-

Transform existing columns: -NONE-

Define new columns: -NONE-

When you define a new column, use **Subset/Copy** because the existing table is copied and the newly defined column is created to generate the output table.

- 2 If the active table is SASUSER.HOUSES, continue to the next step. Otherwise, select **Table**, and then select the SASUSER.HOUSES table. For more information on selecting tables, see “Selecting a Table” on page 24.
- 3 If other report selections exist (for example, column names are listed for **Define new columns**), follow this selection path to clear these selections:

File ► New

- 4 Select **Output data** from the Subset or Copy a Table window. The Output Table or View window appears.

Display 9.2 Output Table or View Window

SAS/ASSIST: Output Table or View

Enter the name of the table or view to be created.
To select or deselect the other options, place cursor and press ENTER.
Use OK to save selections. Cancel to return without saving selections.

Table: SASUSER.HOUSES

Output Table or View

Table/View: [] ☐ Replace if existing.

Will be created: Of type:

◆ Temporary ◆ Table
◇ Permanent... ◇ View

In temporary library: WORK

OK Cancel Help

Define new columns: -NONE-

An output table enables you to store the data with the new column separate from the original data.

- 5 In the **Table/View** field, type **HOUSCOST** as the name of the output table in which you want to store the data with the new column. See “SAS Tables” on page 113 for details on naming SAS tables.

Note: Use **Replace if existing** to replace the data in a table or view of the same name. Otherwise, you get an error message that the table already exists and you must enter a new table name. △

- 6 You can store the data temporarily or permanently. For this example, store the data temporarily.
 - If you want to store the data only for the length of the SAS session, select **Temporary**. The data is stored in a temporary table called WORK.HOUSCOST, which is deleted when you end the SAS session.
 - If you want to store the data permanently, select **Permanent**. A list of existing librefs appears. Select the libref for the location where you want to store the data, for example, the SASUSER libref. The table HOUSCOST is stored in SASUSER, and remains there until you delete it.
- 7 You can store the data with the new column either as a table or as a view. For this example, store the data as a table.
- 8 Select **OK**. The Subset or Copy a Table window reappears.
- 9 Select **Define new columns** from the Subset or Copy a Table window. The Define or Modify a Column window appears.

Display 9.3 Define or Modify a Column Window

- 10 In the **Column** field, type **FOOTCOST** as the name of the new column. See “SAS Tables” on page 113 for details on naming columns.

- 11 Select **Numeric** as the type of the column.

A column can be character or numeric. If a column is defined as character, it can contain letters, numbers, special characters, and symbols, but it cannot be used in arithmetic calculations. If a column is defined as numeric, it can contain only numbers, decimal points, plus signs, and minus signs, and it can be used in arithmetic calculations.

- 12 In the **Label** field, type **Cost per Square Foot**. A label can be up to 40 characters, and it can be printed instead of, or in addition to, the column name in certain tasks.
- 13 Select **Format**. The Select Numeric Format window appears.

Display 9.4 Select Numeric Format Window

SAS/ASSIST: Select Numeric Format

Position cursor on the desired format and press ENTER.
If needed, enter the name of an optional format in the field.
Use OK to save selections. Cancel to return without saving selections.

Table: SASUSER.HOUSES

Add new column

Num: Name:

Column: Optional numeric format:
Type: []
Label:

Format:

Initial

☐ Delete

OK Cancel Help OK Cancel

Select Numeric Format

Select:

w.d	standard numeric
BESTw.	choose best notation
COMMAw.d	print commas in numbers
DOLLARw.d	print dollar sign, commas
Ew.	scientific notation
FRACw.	print fractions
HEXw.	numeric hexadecimal
IBw.d	integer binary
PDw.d	packed decimal
PIBw.d	positive integer binary
RBw.d	real binary, floating pt
ROMANw.	Roman numerals
SSNw.	Social security numbers
WORDFw.	numbers as words
WORDSw.	numbers +fract. as words
Zw.d	print leading zeros
ZDw.d	zoned decimal
DATEw.	print date as ddMMMyy
DATETIMEw.d	print date and time
DDMMYYw.	date as day/month/year
HHMMw.d	hour and minutes hh:mm
HOURw.d	hour and decimal fraction
MMDDYYw.	date as month/day/year
MMSSw.d	minutes and seconds
MONYYw.	month and year
TIMEw.d	time values
TODw.	time-of-day
WEEKDATEw.	date and weekday
WORDDATEw.	date in words
YYMMDDw.	date as year/month/day

OK Cancel Help

A *format* is a pattern that the SAS System uses to determine how a column value should be displayed. The SAS System provides a set of standard formats and also enables you to define your own custom formats. For example, the `DOLLARw.d` default format displays the amount 1200 as \$1,200. For more information on formats, refer to *SAS Language Reference: Dictionary*.

- 14 Select the **DOLLARw.d** format. The Specify Format Widths window appears with the default definition for the selected format.

Display 9.5 Specify Format Widths Window

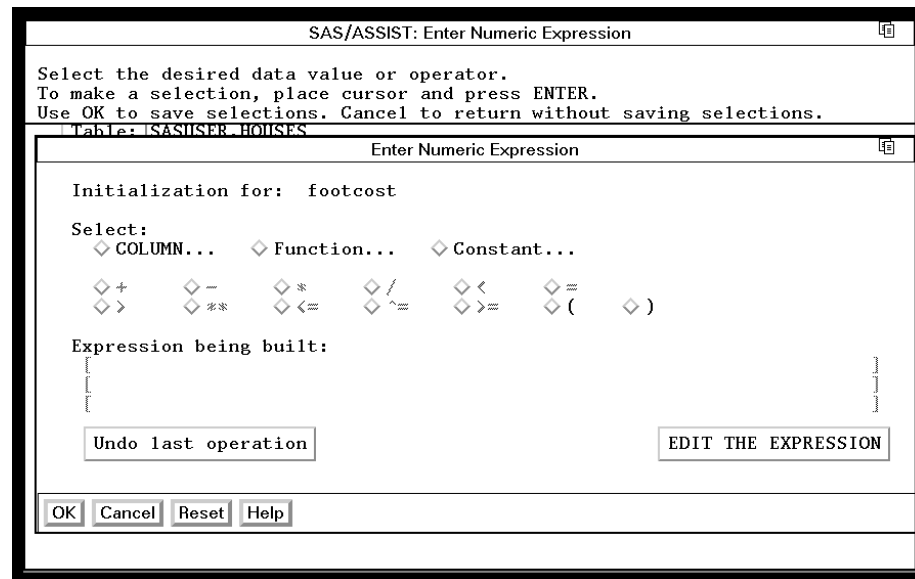
SAS/ASSIST: Specify Format Widths

Use these fields to specify a format width and decimal positions.
To make a selection, fill in requested information and press ENTER.
Use OK to save selections. Cancel to return without saving selections.

Table: SASUSER.HOUSES

Specify Format Widths																																																													
Column:	Format width: [10] Decimals: [0]																																																												
Type:	<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>																																																												
Label:	<table border="0"> <tr><td>w.d</td><td>standard numeric</td></tr> <tr><td>BESTw.</td><td>choose best notation</td></tr> <tr><td>COMMAw.d</td><td>print commas in numbers</td></tr> <tr><td>DOLLARw.d</td><td>print dollar sign,commas</td></tr> <tr><td>Ew.</td><td>scientific notation</td></tr> <tr><td>FRACTw.</td><td>print fractions</td></tr> <tr><td>HEXw.</td><td>numeric hexadecimal</td></tr> <tr><td>IBw.d</td><td>integer binary</td></tr> <tr><td>PDw.d</td><td>packed decimal</td></tr> <tr><td>PIBw.d</td><td>positive integer binary</td></tr> <tr><td>RBw.d</td><td>real binary, floating pt</td></tr> <tr><td>ROMANw.</td><td>Roman numerals</td></tr> <tr><td>SSNw.</td><td>Social security numbers</td></tr> <tr><td>WORDFw.</td><td>numbers as words</td></tr> <tr><td>WORDSw.</td><td>numbers +fract. as words</td></tr> <tr><td>Zw.d</td><td>print leading zeros</td></tr> <tr><td>ZDw.d</td><td>zoned decimal</td></tr> <tr><td>DATEw.</td><td>print date as ddMMyy</td></tr> <tr><td>DATETIMEw.d</td><td>print date and time</td></tr> <tr><td>DDMMYYw.</td><td>date as day/month/year</td></tr> <tr><td>HHMMw.d</td><td>hour and minutes hh:mm</td></tr> <tr><td>HOURw.d</td><td>hour and decimal fraction</td></tr> <tr><td>MMDDYYw.</td><td>date as month/day/year</td></tr> <tr><td>MMSSw.d</td><td>minutes and seconds</td></tr> <tr><td>MONYYw.</td><td>month and year</td></tr> <tr><td>TIMEw.d</td><td>time values</td></tr> <tr><td>TODw.</td><td>time-of-day</td></tr> <tr><td>WEEKDATEw.</td><td>date and weekday</td></tr> <tr><td>WORDDATEw.</td><td>date in words</td></tr> <tr><td>YYMMDDw.</td><td>date as year/month/day</td></tr> </table>	w.d	standard numeric	BESTw.	choose best notation	COMMAw.d	print commas in numbers	DOLLARw.d	print dollar sign,commas	Ew.	scientific notation	FRACTw.	print fractions	HEXw.	numeric hexadecimal	IBw.d	integer binary	PDw.d	packed decimal	PIBw.d	positive integer binary	RBw.d	real binary, floating pt	ROMANw.	Roman numerals	SSNw.	Social security numbers	WORDFw.	numbers as words	WORDSw.	numbers +fract. as words	Zw.d	print leading zeros	ZDw.d	zoned decimal	DATEw.	print date as ddMMyy	DATETIMEw.d	print date and time	DDMMYYw.	date as day/month/year	HHMMw.d	hour and minutes hh:mm	HOURw.d	hour and decimal fraction	MMDDYYw.	date as month/day/year	MMSSw.d	minutes and seconds	MONYYw.	month and year	TIMEw.d	time values	TODw.	time-of-day	WEEKDATEw.	date and weekday	WORDDATEw.	date in words	YYMMDDw.	date as year/month/day
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DATEw.	print date as ddMMyy																																																												
DATETIMEw.d	print date and time																																																												
DDMMYYw.	date as day/month/year																																																												
HHMMw.d	hour and minutes hh:mm																																																												
HOURw.d	hour and decimal fraction																																																												
MMDDYYw.	date as month/day/year																																																												
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YYMMDDw.	date as year/month/day																																																												
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>	<input type="button" value="OK"/> <input type="button" value="Cancel"/>																																																												

- 15 Select **OK** to accept the defaults of 10 for the format width and 0 for the number of digits to the right of the decimal point. The Define or Modify a Column window reappears.
- 16 Select **Initialize** from the Define or Modify a Column window. The Enter Numeric Expression window appears. This window enables you to define (initialize) the new column.

Display 9.6 Enter Numeric Expression

For this example, you can determine the cost per square foot by building the arithmetic expression of price divided by square feet (PRICE/SQFEET). The cost per square foot is calculated for each house and stored in the new column called FOOTCOST. You can build the expression by using one of the methods listed below.

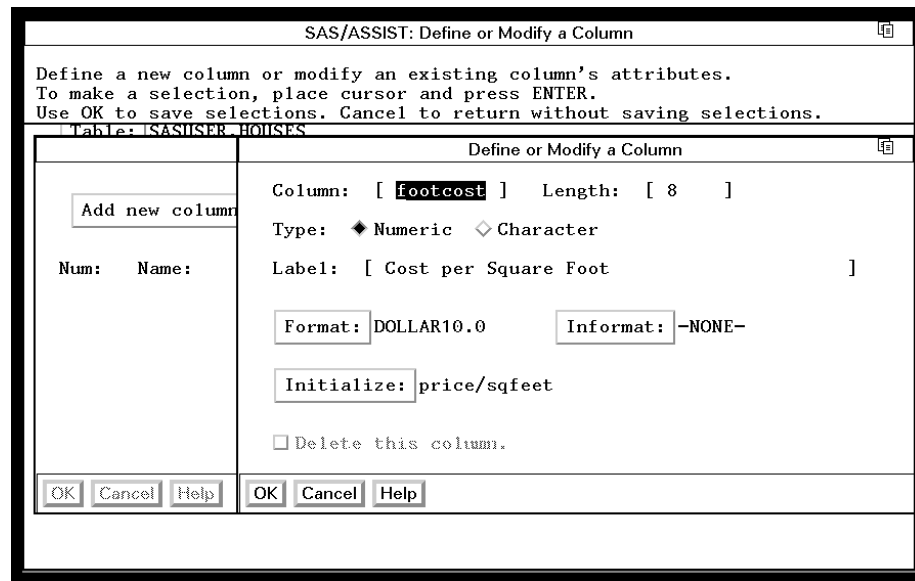
- You can type the expression directly by using **EDIT THE EXPRESSION**.
- You can build the expression by using items in the window. If you use the items in this window, the items available for selection are highlighted while you are building the expression.

17 To build the expression by using the items in the window, select **Column** from the Enter Numeric Expression window. Select the PRICE column. For more information on selecting columns, refer to “Selecting a Column” on page 25.

18 Select the division symbol (/).

19 Select **Column** again, and then select the SQFEET column the same way you selected the PRICE column in step 17. The Enter Numeric Expression window reappears.

20 Select **OK**. The Define or Modify a Column window reappears with the new column defined.

Display 9.7 Definition of the FOOTCOST Column


SAS/ASSIST: Define or Modify a Column

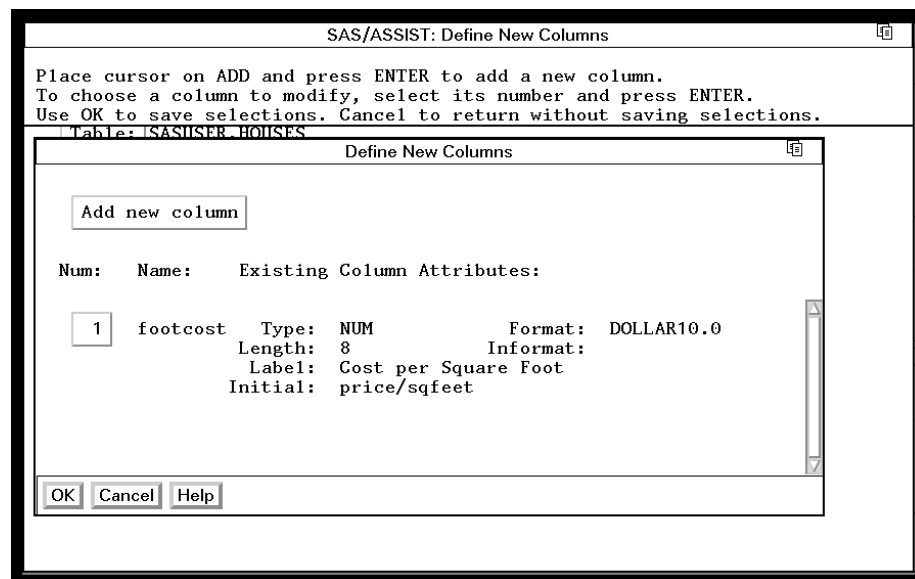
Define a new column or modify an existing column's attributes.
To make a selection, place cursor and press ENTER.
Use OK to save selections. Cancel to return without saving selections.

Table: SASUSER.HOUSES

Define or Modify a Column	
Column:	[footcost]
Length:	[8]
Type:	<input checked="" type="radio"/> Numeric <input type="radio"/> Character
Label:	[Cost per Square Foot]
Format:	DOLLAR10.0
Informat:	-NONE-
Initialize:	price/sqfeet
<input type="checkbox"/> Delete this column.	

OK Cancel Help

Select **OK**. The Define New Columns window appears with information about the new column.

Display 9.8 Define New Columns Window


SAS/ASSIST: Define New Columns

Place cursor on ADD and press ENTER to add a new column.
To choose a column to modify, select its number and press ENTER.
Use OK to save selections. Cancel to return without saving selections.

Table: SASUSER.HOUSES

Define New Columns	
Add new column	
Num:	Name: Existing Column Attributes:
1	footcost Type: NUM Format: DOLLAR10.0 Length: 8 Informat: Label: Cost per Square Foot Initial: price/sqfeet

OK Cancel Help

Select **OK** again. The Subset or Copy a Table window reappears.

- 21 To copy the data into the new table and generate the new column, follow this selection path:

Run ► Submit

The data from the HOUSES table is copied into the HOUSCOST table, and the new column FOOTCOST is created. The new table is shown in a tabular format.

Display 9.9 HOUSCOST Table

SAS/ASSIST: Display the Table Just Created					
NOTE: If table was password protected, you must regenerate password. Shown below is table 'WORK.houscost' produced in the previous step. Scroll to view the entire table. Use End from the File pull-down to return.					
Table: SASUSER.HOUSES					
FSVIEW: WORK.HOUCOST (B)					
File Edit View Tools Search Solutions Help					
Obs	style	sqfeet	bedrooms	baths	street
1	RANCH	1250	2	1	Sheppard Avenue
2	SPLIT	1190	1	1	Rand Street
3	CONDO	1400	2	1.5	Market Street
4	TWOSTORY	1810	4	3	Garris Street
5	RANCH	1500	3	3	Kemble Avenue
6	SPLIT	1615	4	3	West Drive
7	SPLIT	1305	3	1.5	Graham Avenue
8	CONDO	1390	3	2.5	Hampshire Avenue
9	TWOSTORY	1040	2	1	Sanders Road
10	CONDO	2105	4	2.5	Jeans Avenue
11	RANCH	1535	3	3	State Highway
12	TWOSTORY	1240	2	1	Fairbanks Circle
13	RANCH	720	1	1	Nicholson Drive
14	TWOSTORY	1745	4	2.5	Highland Road
15	CONDO	1860	2	2	Arcata Avenue

22 When you finish looking at the new table, follow this selection path to return to the Subset or Copy a Data Set window:

File ► Close

Exiting This Task

When you are ready to return to the WorkPlace menu or move on to another task, follow the directions in “Exiting a Task” on page 26.

The correct bibliographic citation for this manual is as follows: SAS Institute Inc., *Getting Started with the SAS System Using SAS/ASSIST Software, Version 8*, Cary, NC: SAS Institute Inc., 1999. pp. 196

Getting Started with the SAS System Using SAS/ASSIST Software, Version 8

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ISBN 1-58025-460-8

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SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513.

1st printing, October 1999

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