



Proc de Jour PROC TRANSPOSE

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May 10, 2013*

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Introduction





PROC TRANSPOSE

- ***Only function is to create an output data table.***
- ***Rows of the original data matrix become columns, and columns become rows.***
- ***Usually, convert tall files into wide files example: a list to a table.***
- ***Create a data file suitable for charting or reporting.***



Partial data listing

Create a table of product sales by subsidiary city for Canada

Region	Product	Subsidiary	Stores	Sales	Inventory
Canada	Boot	Calgary	8	17720	63280
Canada	Men's Dress	Calgary	1	12775	39663
Canada	Sandal	Calgary	7	2886	15838
Canada	Slipper	Calgary	2	5676	48061
Canada	Sport Shoe	Calgary	9	9745	38059
Canada	Women's Dress	Calgary	2	12601	54677
Canada	Boot	Montreal	25	40213	240132
Canada	Men's Casual	Montreal	3	53929	187155
Canada	Men's Dress	Montreal	11	112009	355170
Canada	Sandal	Montreal	7	3002	18382
Canada	Slipper	Montreal	24	135305	500053
Canada	Sport Shoe	Montreal	31	29435	178128
Canada	Women's Casual	Montreal	2	24497	34808
Canada	Women's Dress	Montreal	12	132638	483637



Data Step Method

This works but becomes cumbersome when there are many subsidiaries and if you don't know all of them

data sales;

```
merge sashelp.shoes(where=(subsidiary='Calgary'))
```

```
keep=product subsidiary sales
```

```
rename=(sales=calgary))
```

```
sashelp.shoes(where=(subsidiary='Montreal'))
```

```
keep=product subsidiary sales
```

```
rename=(sales=montreal));
```

by product;

drop subsidiary;

run;

Product	calgary	montreal
Boot	17720	40213
Men's Casual		53929
Men's Dress	12775	112009
Sandal	2886	3002
Slipper	5676	135305
Sport Shoe	9745	29435
Women's Casual		24497
Women's Dress	12601	132638



PROC TRANSPOSE - Syntax

Each ID value should occur only once in the input data set or, if you use a BY statement, only once within a BY group.

```
proc transpose data=sashelp.shoes out=sales;
```

```
var sales;           Variable values to be transposed
```

```
id subsidiary;      Convert id var to columns
```

```
by product;         By var becomes rows and are not transposed
```

```
where region='Canada';
```

```
run;
```

ERROR: Data set SASHELP.SHOES is not sorted in ascending sequence. The current BY group has Product = Women's Dress and the next BY group has Product = Boot.



PROC TRANSPOSE - Syntax

Let's try the `notsorted` option.

Not what we hoped for. Data **MUST** be sorted by the **BY** variable first.

```
proc sort
  data=sashelp.shoes
  out=shoes;
  by product subsidiary;
  where
  region='Canada';
run;
```

```
proc transpose data=sashelp.shoes out=sales;
  var sales;
  id subsidiary;
  by product notsorted;
  where region='Canada';
run;
```

Product	Calgary	Montreal	Ottawa	Toronto	Vancouver
Boot	17,720				
Men's Dress	12,775				
Sandal	2,886				
Slipper	5,676				
Sport Shoe	9,745				
Women's Dress	12,601				
Boot		40,213			
Men's Casual		53,929			
Men's Dress		112,009			
Sandal		3,002			
Slipper		135,305			
Sport Shoe		29,435			
Women's Casual		24,497			
Women's Dress		132,638			
Boot			7,892		



PROC TRANSPOSE – Output After Sort

Table has extra columns _NAME_ and _LABEL_ that can be eliminated.

Product	<u>_NAME_</u>	<u>_LABEL_</u>	Calgary	Montreal	Ottawa	Toronto	Vancouver
Boot	Sales	Total Sales	17,720	40,213	7,892	33,291	286,497
Men's Casual	Sales	Total Sales		53,929	19,210	15,403	353,361
Men's Dress	Sales	Total Sales	12,775	112,009		37,519	757,798
Sandal	Sales	Total Sales	2,886	3,002	2,600	1,190	5,120
Slipper	Sales	Total Sales	5,676	135,305	30,905	80,352	700,513
Sport Shoe	Sales	Total Sales	9,745	29,435	2,598	34,585	64,026
Women's Casual	Sales	Total Sales		24,497	18,712	63,492	304,106
Women's Dress	Sales	Total Sales	12,601	132,638	33,824	53,940	756,347

If the subsidiary name contained spaces or special characters they would be converted to underscores.

```
proc transpose data=shoes out=sales(drop=_:);
```

```
var sales;
```

```
id subsidiary;
```

```
by product;
```

```
run;
```

Drop= option will exclude variables starting with an underscore

Warning: If the ID variable value is numeric or starts with a special character the transposed variable name will start with an underscore!



PROC TRANSPOSE – Output Variable Names

Prefix= option adds a prefix to each of the new column names. It avoids losing transposed variables with drop option.

IDLABEL var; statement specifies a variable to provide labels for the transposed variables.

```
proc transpose data=shoes out=sales(drop=_)  
  prefix=city_;  
  var sales;  
  id subsidiary;  
  by product;  
run;
```

Product	city_Calgary	city_Montreal	city_Ottawa	city_Toronto	city_Vancouver
Boot	17,720	40,213	7,892	33,291	286,497
Men's Casual		53,929	19,210	15,403	353,361
Men's Dress	12,775	112,009		37,519	757,798
Sandal	2,886	3,002	2,600	1,190	5,120
Slipper	5,676	135,305	30,905	80,352	700,513
Sport Shoe	9,745	29,435	2,598	34,585	64,026
Women's Casual		24,497	18,712	63,492	304,106
Women's Dress	12,601	132,638	33,824	53,940	756,347



PROC TRANSPOSE – Using Enterprise Guide

Step 1 is to filter and sort the data. Data is sorted only by product for this example.

Filter and Sort ▾

Input Data Code Log Output Data

Modify Task Filter and Sort Query Builder Data Describe ▾

	Region	Product	Subsidiary	Sales
1	Canada	Boot	Montreal	\$40,213
2	Canada	Boot	Vancouver	\$286,497
3	Canada	Boot	Calgary	\$17,720
4	Canada	Boot	Toronto	\$33,291
5	Canada	Boot	Ottawa	\$7,892
6	Canada	Men's Casual	Toronto	\$15,403
7	Canada	Men's Casual	Vancouver	\$353,361
8	Canada	Men's Casual	Montreal	\$53,929
9	Canada	Men's Casual	Ottawa	\$19,210
10	Canada	Men's Dress	Montreal	\$112,009
11	Canada	Men's Dress	Toronto	\$37,519
12	Canada	Men's Dress	Calgary	\$12,775
13	Canada	Men's Dress	Vancouver	\$757,798
14	Canada	Sandal	Ottawa	\$2,600
15	Canada	Sandal	Toronto	\$1,190
16	Canada	Sandal	Montreal	\$3,002
17	Canada	Sandal	Calgary	\$2,886
18	Canada	Sandal	Vancouver	\$5,120
19	Canada	Slipper	Toronto	\$80,352
20	Canada	Slipper	Montreal	\$135,305
21	Canada	Slipper	Ottawa	\$30,905
22	Canada	Slipper	Calgary	\$5,676
23	Canada	Slipper	Vancouver	\$700,513
24	Canada	Sport Shoe	Toronto	\$34,585
25	Canada	Sport Shoe	Montreal	\$29,435
26	Canada	Sport Shoe	Calgary	\$9,745
27	Canada	Sport Shoe	Ottawa	\$2,598
28	Canada	Sport Shoe	Vancouver	\$64,026
29	Canada	Women's Casual	Toronto	\$63,492
30	Canada	Women's Casual	Montreal	\$24,497
31	Canada	Women's Casual	Ottawa	\$18,712
32	Canada	Women's Casual	Vancouver	\$304,106
33	Canada	Women's Dress	Montreal	\$132,638
34	Canada	Women's Dress	Toronto	\$53,940
35	Canada	Women's Dress	Calgary	\$12,601
36	Canada	Women's Dress	Ottawa	\$33,824
37	Canada	Women's Dress	Vancouver	\$756,347

Note the order of the Subsidiary in the table.



PROC TRANSPOSE – Using Enterprise Guide

Step 2.
Tasks >
Data >
Transpose

Drag and drop
variables to
the Task roles

Transpose for Local:WORK.FILTER_FOR_SHOES_SAS7BDAT

Data source: Local:WORK.FILTER_FOR_SHOES_SAS7BDAT
Task filter: None

Variables to assign:

Name
Region
Product
Subsidiary
Sales

Task roles:

- Transpose variables
- Sales
- Copy variables
- New column names (Limit: 1)
- Subsidiary
- Group analysis by
- Product
- New column labels (Limit: 1)

Allow duplicates

The observation containing the last occurrence of a particular value is transposed.

If you assign an input column to this role, then the values in that column are used to form the suffixes of the data column headings in the output data set. If you do not assign an input column to this role, then integers are used to form the suffixes of the data column headings in the output data set.

Preview code Run Save Cancel Help



PROC TRANSPOSE – Using Enterprise Guide

Transpose ▾

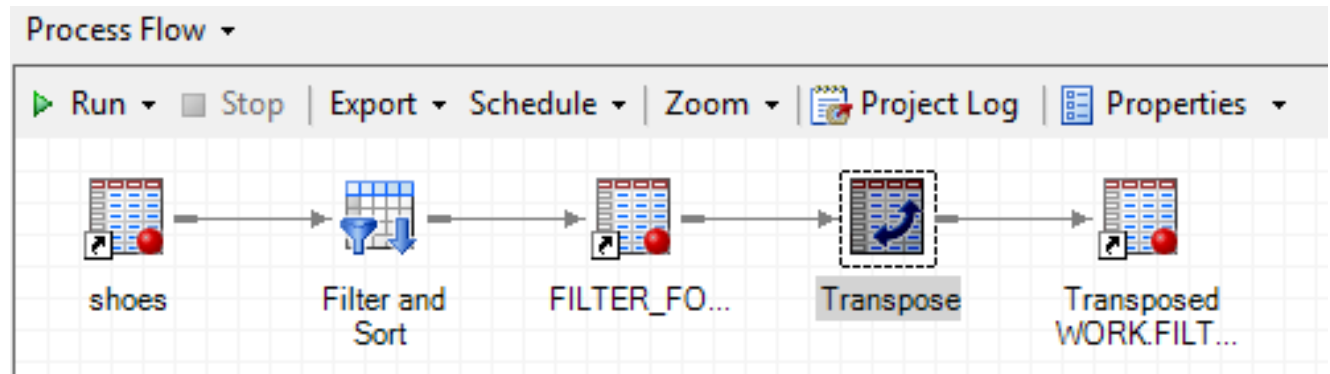
Input Data | Code | Log | Output Data

Modify Task | Filter and Sort | Query Builder | Data ▾ | Describe ▾ | Graph ▾ | Analyze ▾ | Export ▾ | Send To ▾

	Product	Source	Label	ColumnMontreal	ColumnVancouver	ColumnCalgary	ColumnToronto	ColumnOttawa
1	Boot	Sales	Total Sales	\$40,213	\$286,497	\$17,720	\$33,291	\$7,892
2	Men's Casual	Sales	Total Sales	\$53,929	\$353,361	.	\$15,403	\$19,210
3	Men's Dress	Sales	Total Sales	\$112,009	\$757,798	\$12,775	\$37,519	.
4	Sandal	Sales	Total Sales	\$3,002	\$5,120	\$2,886	\$1,190	\$2,600
5	Slipper	Sales	Total Sales	\$135,305	\$700,513	\$5,676	\$80,352	\$30,905
6	Sport Shoe	Sales	Total Sales	\$29,435	\$64,026	\$9,745	\$34,585	\$2,598
7	Women's Casual	Sales	Total Sales	\$24,497	\$304,106	.	\$63,492	\$18,712
8	Women's Dress	Sales	Total Sales	\$132,638	\$756,347	\$12,601	\$53,940	\$33,824

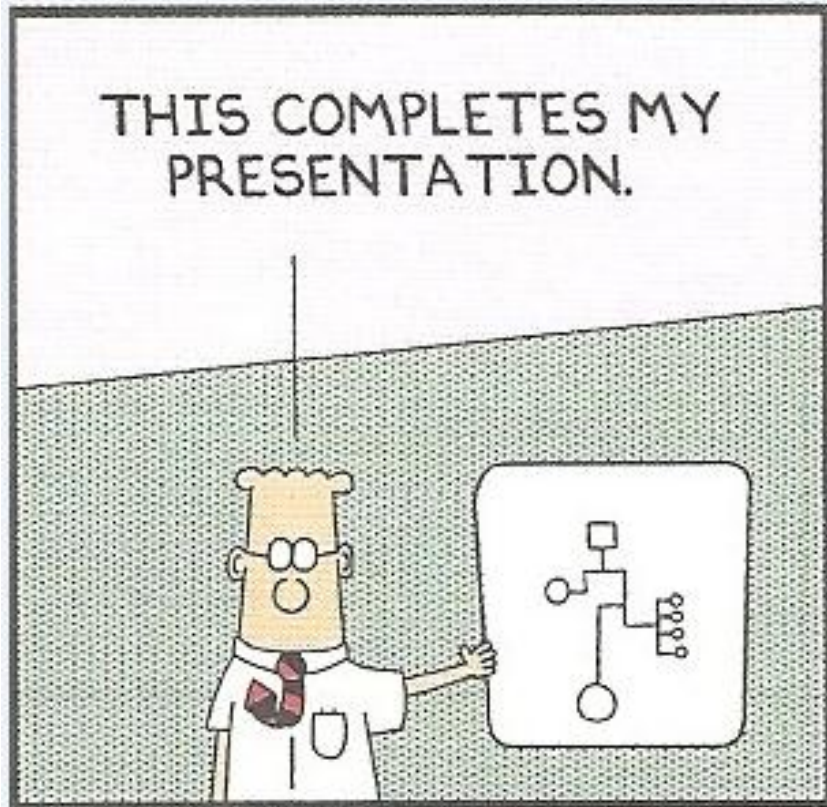
Default code is prefix=Column

Columns are in the order that they are first referenced in the data.





QUESTIONS



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