

# STAT:5400 Computing in Statistics

## Proc tabulate

Lecture 22  
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## Proc tabulate

- displays descriptive statistics in tabular format
- can create variety of tables ranging from simple to complex and highly customized
- computes many of same statistics reported from *proc means* and *proc freq*
- flexibility in classifying values of variables and establishing a hierarchical relationship between variables
- mechanism for labeling and formatting variables and procedure-generated statistics

## Example 1

from  
[http://ftp.sas.com/techsup/download/sample/base/tabulate/tabformat\\_classvar](http://ftp.sas.com/techsup/download/sample/base/tabulate/tabformat_classvar).

PROC TABULATE Sample  
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USAGE: User would like to format the CLASS variables and ANALYSIS variables.

METHOD: Use a FORMAT statement to format the CLASS variables. Use the format modifier on the TABLE statement to format the analysis variables.

DATE CREATED: 2-19-97

SAMPLE CODE:

```
data sales;
  input name $ region $ product $ sales;
  cards;
SMITH  A  CANDY  22000.
SMITH  A  CHIPS  10000.
JONES  A  CANDY  25000.
JONES  A  CHIPS  5000.
JOHNSON B  CANDY  12000.
JOHNSON B  CHIPS  15000.
ADAMS  B  CANDY  10000.
ADAMS  B  CHIPS  8000.
;

proc format;          /* Create user-defined format */
  value $fmtx 'A'='CARY'
             'B'='RALEIGH';

proc tabulate data=sales;
  /*-----*/
  /* Use FORMAT stmt. to assign format to CLASS variable */
  /* Use *F= to assign a format to an ANALYSIS variable */
  /*-----*/
  format region $fmtx.;
  class name region;
  var sales;
  table region*name, sales*(sum n)*f=comma8.;
run
```

SAMPLE OUTPUT:

		SALES	
		SUM	N
REGION	NAME		
CARY	JONES	30,000	2
	SMITH	32,000	2
RALEIGH	ADAMS	18,000	2
	JOHNSON	27,000	2

## Example 2

PROC TABULATE Sample

USAGE: User has data derived from a multiple choice questionnaire. They would like to get frequency counts of the response for each question.

METHOD: Manipulate the data so that TABULATE receives one CLASS variable for responses instead of four. Also, create a new answer variable. Place both variables on the CLASS statement.

DATE CREATED: 2-19-97

SAMPLE CODE:

```
data old;
input q1 $ q2 $ q3 $ q4 $;
cards;
A B C D
E F A E
C B B A
B A D E
E F A B
A A A C
F E A E
;

data new;
  set old;
  q='Question 1'; ans=q1; output;
  q='Question 2'; ans=q2; output;
  q='Question 3'; ans=q3; output;
  q='Question 4'; ans=q4; output;
drop q1-q4;
run;

proc tabulate data=new format=1.0;
class q ans;
table q=' ', ans='CHOICES'*n=' ' / misstext='0';
run;
```

SAMPLE OUTPUT:

	CHOICES
	A B C D E F
Question 1	2 1 1 0 2 1
Question 2	2 2 0 0 1 2
Question 3	4 1 1 1 0 0
Question 4	1 1 1 1 3 0

### Example 3

```
options ls=72;

data timerec;
  input employee $ week $ phase $ hours;
  cards;
Chen    11SEP89 Analysis 8
Chen    11SEP89 Analysis 7
Chen    11SEP89 Coding 2.5
Chen    11SEP89 Testing 8
Chen    11SEP89 Coding 8.5
Chen    11SEP89 Testing 6
Chen    11SEP89 Coding 4
Stewart 11SEP89 Coding 8
Stewart 11SEP89 Testing 4.5
Stewart 11SEP89 Coding 4.5
Stewart 11SEP89 Coding 10.5
Stewart 11SEP89 Testing 10
;
run;

proc tabulate data=timerec format=8.1;
  class employee week phase;
  var hours;
  table week, employee all, sum*hours=' *(phase all);
  table week, employee all, pctsum*hours=' *(phase all);
  keylabel sum='Total Hours'
           pctsum='Percentage of Hours';
  title 'Summary of Project Hours';
run;
```

#### Summary of Project Hours

1

```
week 11SEP89
```

-----				
	Total Hours			
	-----			
	phase			
	-----			
	Analysis	Coding	Testing	All
-----				
employee				
-----				
Chen	15.0	15.0	14.0	44.0
-----				
Stewart	.	23.0	14.5	37.5
-----				
All	15.0	38.0	28.5	81.5
-----				

11

```
week 11SEP89
```

-----				
	Percentage of Hours			
	-----			
	phase			
	-----			
	Analysis	Coding	Testing	All
-----				
employee				
-----				
Chen	18.4	18.4	17.2	54.0
-----				
Stewart	.	28.2	17.8	46.0
-----				
All	18.4	46.6	35.0	100.0
-----				