



SAS User Group Meeting

Means Procedure



Means Procedure

- Produces simple univariate descriptive statistics for numeric variables
- Nearly identical to Proc Summary
- Proc summary produces no printed output by default, but proc means does



Advantages

- Look at the reports on the output screen
- Print the reports out easily
- Specify statistics that you want to show on the report
- Output statement can turn output statistics to SAS data set



1st Example

- We have a dataset of (\$) Sales for each agent over all years
- Question?
 - What is the Maximum sales for each year?
 - What is the total amount of sales by year?
 - What is the variance of sales between agents?



Syntax

- **Proc sort data=sales;**

By Year;

Proc Means data=sales Max Sum Var;

Var Sales;

By Year;

Title ‘Summary of Sales by Year’;

Run;

Part of the Report

-----YEAR=2002-----

The MEANS Procedure

Analysis Variable : Sales

Maximum	Sum	Variance
95932	11582356	33251



Answer the Question

Max Sales in Year 2002 = \$95,932

Total Amount of Sales = \$11,582,356

Variance of sales in 2002 = \$33,251

- Other Statistics Keywords

N, NMISS, MIN, MAX, RANGE, SUM,
SUMWGT, MEAN, CSS, USS, VAR, STD,
STDERR, CV, SKEWNESS, KURTOSIS, T,
PRT



Output Statement

- Deliver the desired statistics to a new SAS data set
- No limit to the number of output statements
- Able to do further analysis on the results
 - Etc. define outliers, create scenarios, group data
- Same output statement can also be used with Summary Procedure



2nd Example

Data set of precipitations as follow:

Days	Year1973	Year1974	.....	Year2002	Year2003
1	10	0	.....	3	0
2	0	20	.....	5	0
.....
120	25	30	.....	45	20
121	12	25	.....	15	14
.....
364	0	0	.....	0	10
365	15	5	.....	20	0



Interested

- What is the total precipitations for each year?
- What is the highest rainfall during each year?
- What is the average rainfall for each year?
- What is the standard deviation of precipitations for each year?



Syntax

- Proc Means Data=Rain NOPRINT;
 Var Year1973 – Year2003;
 Output Out=Result Sum=Sum73-Sum03
 Max=Max73-Max03
 Mean=Avg73-Avg03
 Stddev =SD73-SD03;
Run;



Data Set “Result”

Sum 73	.	Sum 03	Max 73	.	Max 03	Avg 73	.	Avg 03	SD73	.	SD03
251 3	.	242 0	80	.	65	6.89	.	6.63	60.73	.	70.56

Other SAS Keywords can be used in the output statement:

CSS, CV, KURTOSIS, LCLM, MAXID, MEDIAN, MIN, MINID, N, NMISS, P1, P10, P25, P5, P50, P75, P90, P95, P99, PROBT, Q1, Q3, QRANGE, RANGE, SKEWNESS, STDERR, SUMWGT, T, UCLM, USS, VAR



Weight statement

- Able to put different weights on variables to calculate more meaningful statistics
- Also can output the sum of the weights to a SAS data set
- See more in the next example



3rd Example

- Raw data set consists the following variables:
 - ❖ Expenses to Sales ratio at different Branches
 - ❖ Profits to Sales ratio at different Branches
 - ❖ Total Sales at different Branches
 - ❖ Branch Identification Number
- What is the expenses to sales ratio and the profits to sales ratio across all the branches?



Syntax

- Proc Means data=sales NOPRINT;
 Var exp2sales prof2sales;
 Weight totsales;
 Output out=summary Mean=E2S P2S
 Sumwgt=Netsales;

Run;



SAS Output Dataset

E2S	P2S	Netsales
0.6578	0.3422	58985420

Weighted Average Expenses to Sales Ratio Across all Branches (E2S) = 0.6578

Weighted Average Profits to Sales Ratio Across all Branches (P2S) = 0.3422

Total Sales Across all Branches = \$58,985,420



Questions?



Thank You Very Much!
Enjoy the Rest of the
Meeting!