

How do you calculate standard deviation in SAS?

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Standard deviation is a statistical measure that quantifies the amount of variation or dispersion in a set of data values. In SAS, the standard deviation can be calculated by using the PROC MEANS procedure, which provides the mean, standard deviation, and other descriptive statistics for a given variable. The formula for standard deviation in SAS is based on the square root of the sum of squared deviations of each data point from the mean, divided by the total number of data points minus one. This procedure allows for quick and accurate calculation of standard deviation in SAS, providing valuable insights into the spread of the data and aiding in decision making and analysis.

Calculate Standard Deviation in SAS (3 Examples)

You can use the following methods to calculate the of values in SAS:

Method 1: Calculate Standard Deviation of One Variable

```
proc means data=my_data std;  
var variable1;  
run;
```

Method 2: Calculate Standard Deviation of All Numeric Variables

```
proc means data=my_data std;  
run;
```

Method 3: Calculate Standard Deviation by Group

```
proc means data=my_data std;
```

```
class grouping_variable;  
var values_variable;  
run;
```

The following examples show how to use each method with the following dataset in SAS:

```
/*create dataset*/  
data my_data;  
input team $ points rebounds;  
datalines;  
A 23 6  
A 31 5  
A 33 5  
A 18 8  
A 20 9  
A 25 12  
B 18 10  
B 20 7  
B 17 8  
B 14 3  
B 14 3  
B 15 6  
;
```

```
run;
```

```
/*view dataset*/
```

```
proc printdata=my_data;
```

Obs	team	points	rebounds
1	A	23	6
2	A	31	5
3	A	33	5
4	A	18	8
5	A	20	9
6	A	25	12
7	B	18	10
8	B	20	7
9	B	17	8
10	B	14	3
11	B	14	3
12	B	15	6

Example 1: Calculate Standard Deviation of One Variable

The following code shows how to calculate the standard deviation of just the points variable.

```
proc means data=my_data std;
```

```
var points;
```

```
run;
```

The MEANS Procedure**Analysis Variable : points****Std Dev**

6.2716292

The standard deviation of the points variable turns out to be 6.2716.

Example 2: Calculate Standard Deviation of All Numeric Variables

The following code shows how to calculate the standard deviation of all numeric variables in the dataset:

```
proc means data=my_data std;  
run;
```

The MEANS Procedure

Variable	Std Dev
points	6.2716292
rebounds	2.7247463

From the output we can see that the standard deviation for points is 6.2716 and the standard deviation for rebounds is 2.7247.

Since the standard deviation for points is larger, this tells us that the values are more spread out for the points variable compared to the rebounds variable.

Example 3: Calculate Standard Deviation by Group

The following code shows how to calculate the standard deviation of points, grouped by team:

```
proc means data=my_data std;  
class team;  
var points;  
run;
```

The MEANS Procedure

Analysis Variable : points		
team	N Obs	Std Dev
A	6	5.9665736
B	6	2.4221203

From the output we can see that the standard deviation of points for team A is 5.9665 and the standard deviation of points for team B is 2.4221.

Additional Resources

The following tutorials explain how to perform other

common tasks in SAS:

ARABPSYCHOLOGY.COM