

How to Calculate a Cumulative Sum in SAS (With Example)

Authored by
stats writer

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To calculate a cumulative sum in SAS, you first need to create a data set with values and then use the Cumulative Sum (CUSUM) function to calculate the cumulative sum of those values. You can then use a PROC PRINT or PROC MEANS statement to display the results. An example of how to calculate a cumulative sum in SAS would be to use the CUSUM function to calculate the cumulative sum of a variable called SALES over a set of observations and then use a PROC PRINT statement to display the results.

You can use the following basic syntax to calculate a cumulative sum in SAS:

```
data new_data;  
set original_data;  
retain cum_sum;  
cum_sum+sales;  
run;
```

This particular syntax creates a new dataset called **new_data** that contains a new column called **cum_sum** that contains the cumulative values of the column called **sales**.

The following example shows how to use this syntax in practice.

Example: Calculate a Cumulative Sum in SAS

Suppose we have the following dataset in SAS that shows the number of sales made by some store during 10 consecutive days:

```
/*create dataset*/  
data original_data;  
input day sales;  
datalines;  
1 7  
2 12  
3 14  
4 12  
5 16  
6 18  
7 11  
8 10  
9 14  
10 17  
;
```

```
run;
```

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

```
proc print data=original_data;
```

Obs	day	sales
1	1	7
2	2	12
3	3	14
4	4	12
5	5	16
6	6	18
7	7	11
8	8	10
9	9	14
10	10	17

The following code shows how to create a new dataset that calculates the cumulative sum of values in the sales column:

```
/*calculate cumulative sum of sales*/
```

```
data new_data;
```

```
set original_data;
```

```
retain cum_sum;
```

```
cum_sum+sales;
```

```
run;
```

```
/*view results*/
```

```
proc print data=new_data;
```

Obs	day	sales	cum_sum
1	1	7	7
2	2	12	19
3	3	14	33
4	4	12	45
5	5	16	61
6	6	18	79
7	7	11	90
8	8	10	100
9	9	14	114
10	10	17	131

The new column called **cum_sum** contains the cumulative sum of values in the **sales** column.

For example:

Cumulative Sum on Day 1: **7**

Cumulative Sum on Day 2: $7 + 12 = \mathbf{19}$

Cumulative Sum on Day 3: $7 + 12 + 14 = \mathbf{33}$

And so on.

The following tutorials explain how to perform other common tasks in SAS: