

How can I use the FLOOR function in SAS?

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June 23, 2024

RECOMMENDED CITATION

stats writer (2024). *How can I use the FLOOR function in SAS?*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=147982>

The FLOOR function in SAS is a mathematical function that allows users to round down a numeric value to the nearest whole number. This function is particularly useful in data analysis and reporting, as it helps to simplify numeric values and make them more easily understandable. To use the FLOOR function, simply input the desired numeric value as an argument and the function will return the rounded down value. This function can be applied to a single value or to an entire column of data in SAS. It is a valuable tool for data manipulation and simplification in SAS programming.

Use the FLOOR Function in SAS

You can use the FLOOR function in SAS to return the largest integer less than or equal to some numeric value.

The following example shows how to use the FLOOR function in practice.

Note: The opposite of the FLOOR function in SAS is the function.

Example: How to Use FLOOR Function in SAS

Suppose we have the following dataset in SAS that contains information about the average items sold by various employees at some company:

```
/*create dataset*/  
data my_data;  
input employee $ avg_sales;
```

datalines;

Andy 12.3

Bob 14.5

Chad 8.44

Derrick 12.87

Eric 8.01

Frank 10

George 11.5

Henry 11.99

Isaac 7.64

;

run;

/*view dataset*/

proc printdata=my_data;

Obs	employee	avg_sales
1	Andy	12.30
2	Bob	14.50
3	Chad	8.44
4	Derrick	12.87
5	Eric	8.01
6	Frank	10.00
7	George	11.50
8	Henry	11.99
9	Isaac	7.64

We can use the FLOOR function to return the largest integer less than or equal to each numeric value in the avg_sales column:

```
/*create new dataset*/  
data new_data;  
set my_data;  
floor_avg_sales = floor(avg_sales);  
run;  
  
/*view new dataset*/  
proc printdata=new_data;
```

Obs	employee	avg_sales	floor_avg_sales
1	Andy	12.30	12
2	Bob	14.50	14
3	Chad	8.44	8
4	Derrick	12.87	12
5	Eric	8.01	8
6	Frank	10.00	10
7	George	11.50	11
8	Henry	11.99	11
9	Isaac	7.64	7

Notice that the new column called floor_avg_sales contains the largest integer less than or equal to each

numeric value in the avg_sales column.

For example:

The value 12.30 becomes 12. The value 14.50 becomes 14. The value 8.44 becomes 8. The value 12.87 becomes 12.

And so on.

The Difference Between FLOOR vs INT Functions

The INT function in SAS returns the whole number portion of numeric values.

For positive values, the FLOOR and INT functions will return the exact same numbers.

Consider the following dataset as an example:

```
/*create dataset*/  
data my_data;  
input employee $ avg_sales;  
datalines;  
Andy 12.3  
Bob 14.5  
Chad 8.44
```

Derrick -12.87

Eric -8.01

```
/*create new dataset*/  
data new_data;  
set my_data;  
floor_avg_sales = floor(avg_sales);  
int_avg_sales = int(avg_sales);  
run;  
  
/*view new dataset*/  
proc printdata=new_data;
```

Obs	employee	avg_sales	floor_avg_sales	int_avg_sales
1	Andy	12.30	12	12
2	Bob	14.50	14	14
3	Chad	8.44	8	8
4	Derrick	-12.87	-13	-12
5	Eric	-8.01	-9	-8

For positive numeric values, the FLOOR and INT functions return the same results.

However, they don't return the same results for negative numeric values.

The **FLOOR** function essentially rounds negative numbers *down* to the next integer while the **INT** function rounds negative numbers *up* to the next integer.

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

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