How can I utilize the Proc Contents function in SAS, and what are some examples of its usage?”

Authored by

stats writer

June 26, 2024

The Proc Contents function in SAS is a powerful tool that allows users to view and manipulate the metadata of SAS datasets. It provides information on variables, formats, labels, and other attributes of a dataset. This function can be utilized in various ways, such as identifying the structure of a dataset, checking for missing values, and detecting duplicate observations. It can also be used to create reports and summaries of dataset attributes. Some common examples of using Proc Contents include data exploration, data cleaning, and data profiling. Overall, the Proc Contents function is essential for data analysis and management in SAS, providing users with valuable insights and facilitating efficient data manipulation.

Use Proc Contents in SAS (With Examples)

You can use proc contents in SAS to print a summary of the contents of a dataset.

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

Example: Using Proc Contents in SAS

Suppose we have the following dataset in SAS that contains information about various basketball players:

```
/*create dataset*/
data original_data;
input team $ points rebounds;
datalines;
A 12 8
A 12 8
A 12 8
```

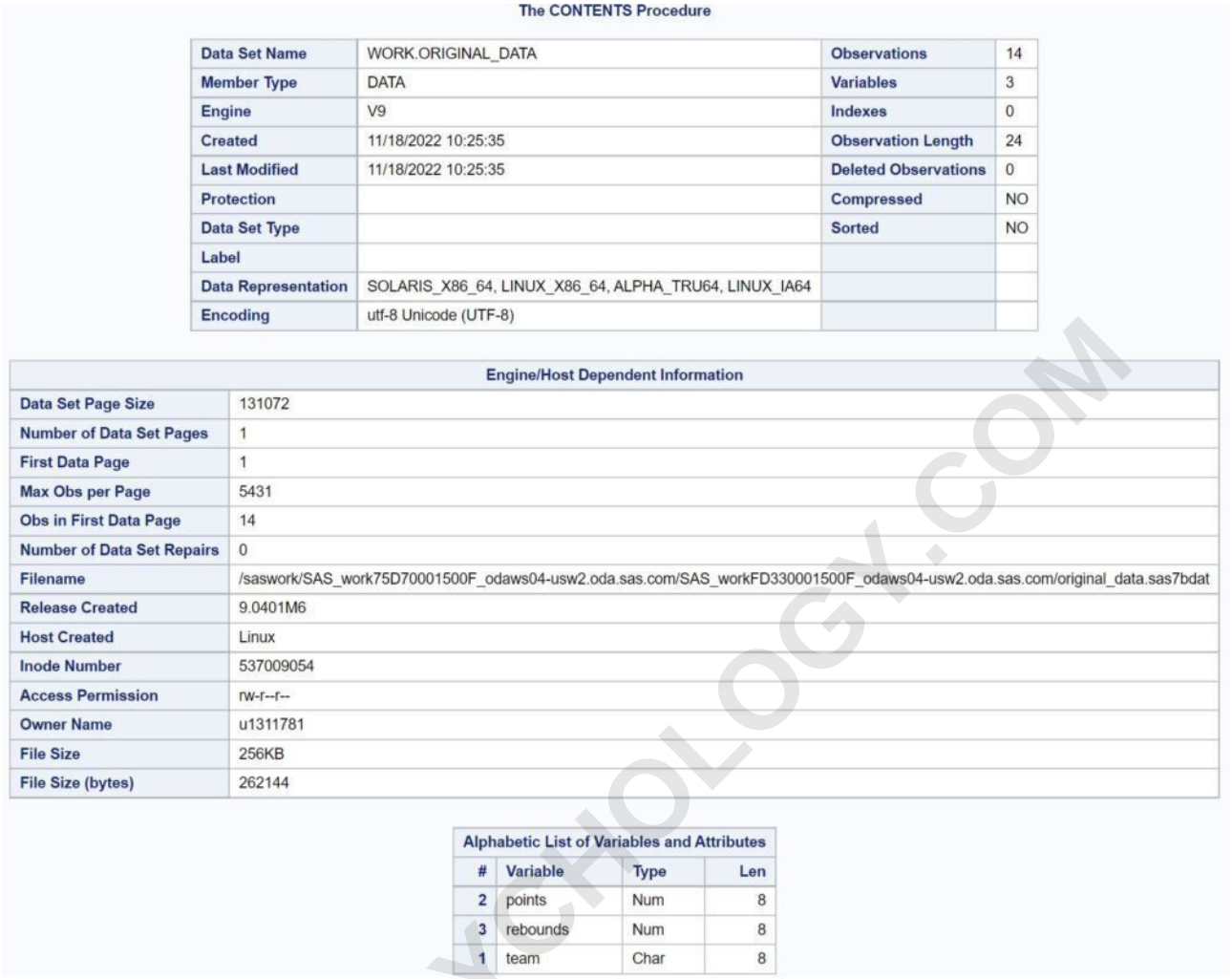
```
A 23 9
A 20 12
A 14 7
A 14 7
B 20 2
B 20 5
B 29 4
B 14 7
B 20 2
B 20 2
B 20 5
;
run;

/*view dataset*/
proc printdata=original_data;
```

Obs	team	points	rebounds
1	A	12	8
2	A	12	8
3	A	12	8
4	A	23	9
5	A	20	12
6	A	14	7
7	A	14	7
8	B	20	2
9	B	20	5
10	B	29	4
11	B	14	7
12	B	20	2
13	B	20	2
14	B	20	5

We can use proc contents to obtain a summary of the contents in the dataset:

```
/*view contents of dataset*/
proc contentsdata=original_data;
```



The CONTENTS Procedure

Data Set Name	WORK.ORIGINAL_DATA	Observations	14
Member Type	DATA	Variables	3
Engine	V9	Indexes	0
Created	11/18/2022 10:25:35	Observation Length	24
Last Modified	11/18/2022 10:25:35	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	5431
Obs in First Data Page	14
Number of Data Set Repairs	0
Filename	/saswork/SAS_work75D70001500F_odaws04-usw2.oda.sas.com/SAS_workFD330001500F_odaws04-usw2.oda.sas.com/original_data.sas7bdat
Release Created	9.0401M6
Host Created	Linux
Inode Number	537009054
Access Permission	rw-r--r--
Owner Name	u1311781
File Size	256KB
File Size (bytes)	262144

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
2	points	Num	8
3	rebounds	Num	8
1	team	Char	8

The first table in the output displays various information about the dataset but the most useful values include:

Data Set Name: The name of the dataset (original_data)Observations: The number of rows in the dataset (14)Variables: The number of columns in the dataset (3)

The second table in the output displays information about the engine and host used in SAS. In most cases, this information won't be particularly useful to you.

The third table displays an alphabetical list of the variables in the dataset along with their data type and length.

From this table we can see:

points is a numeric variablerebounds is a numeric variableteam is a character variable

If you would instead like these variables to be displayed in the order they appear in the dataset, you can use order=varnum as follows:

```
/*view contents of dataset and retain original order of variables*/
proc contentsdata=original_data order=varnum;
```


Variables in Creation Order			
#	Variable	Type	Len
1	team	Char	8
2	points	Num	8
3	rebounds	Num	8

Conclusion

In this tutorial we saw that proc contents can be used in SAS to obtain a summary of the contents of a dataset.

In particular, we saw that proc contents is useful for obtaining the following information:

The size of a dataset (number of columns and rows)The names and data type of each variable in the dataset

In practice, we often use proc contents before performing any type of statistical analysis just to gain a better understanding of the size and structure of a dataset.

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