Saturday, January 26, 2013

How to use MISSING(), NMISS() and the CMISS() functions

SAS provides several functions to test for missing values but in this post we will focus on MISSING(), CMISS() and NMISS() functions. The NMISS() function is reserved for numeric variables. The MISSING() and CMISS() functions can be used with either character or numeric variables. The CMISS() and NMISS() functions are designed by SAS to count the number of arguments with missing values whereas the MISSING function checks whether or not a variable is missing. The MISSING(), CMISS(), and NMISS() functions provide a simple approach to check for missing values and these functions let you write few lines of code by avoiding large if-statements when you need to check for missing values in several values at the same time.

MISSING() function is very useful when you need to check any variable has a missing value or not, but not sure if it's a character or numeric? MISSING function works for either character or numeric variables and it also checks for the special numeric missing values (.A, .B,.C ._ etc)as well. The MISSING() function produces a numeric result (0 or 1) if the data point is present or missing. MISSING(varname) is the same as MISSING(varname)=1. MISSING(varname)=0 specifies when the data point is present.

The MISSING function is particularly useful if you use special missing values since 'if varname=.' will not identify all missing values in such cases.

NOTE: Missing value is not consistent in SAS as it changes between numeric and character variables. A single period (.) represents the Numeric missing value. A single blank enclosed in single or double quotes (' ' or " ") represents the Character missing value. A single period followed by a single letter or an underscore (ex: .A, .B, .Z, ._) represents Special numeric missing values. Please note that these special missing values available for numeric variables only.

The NMISS() function will count the number of arguments with missing values in the specified list of numeric variables. NMISS() function is very useful if you want to make sure if at least one variable in the list is not missing.

The CMISS() is available with SAS 9.2 and SAS Enterprise Guide 4.3 and is similar to the NMISS() function. The only difference is that it counts the number arguments that are missing for both character and numeric variables.

The NMISS() function returns the number of argument variables which have missing values. NMISS works with multiple numeric values, whereas MISSING works with only one value that can be either numeric or character.

Examples:

```
* count the number of the variables A, B, and C which have missing values;
count=nmiss(A, B, C);
count=nmiss(of A B C);
```

```
* count the number of the variables from Var1 to Var10 which have missing values;
count=nmiss(of var1-var10);
```

Examples:

x1=nmiss(1,0,.,2,5,.);	2
x2=nmiss(1,0);	0
x3=nmiss(of x1-x2);	0

For more details refer to this page. (USING the CMISS, NMISS and MISSING FUNCTIONS)
For more details regarding the special missing values, please also refer to Special Missing Values in SAS (http://studysas.blogspot.com/2010/04/special-missing-values.html).

References:

1) Missing values in SAS (http://www.pauldickman.com/teaching/sas/missing.php);
2) MISSING! - Understanding and Making the Most of Missing Data: SUGI 31: Suzanne M. Humphreys, PRA International, Victoria, BC (Canada).
3) Special Missing Values in SAS (http://studysas.blogspot.com/2010/04/special-missing-values.html)
4) **Usage Note *36480* KNOWLEDGE BASE / SAMPLES & SAS NOTES from support.sas.com**
5) SAS(R) 9.2 Language Reference: Dictionary, Fourth Edition.
6) Carpenter's Guide to Innovative SAS Techniques, Art Carpenter (Page:99)

Posted by sarath at Saturday, January 26, 2013

Labels: cmiss vs nmiss in SAS, CMISS(), MISSING(), NMISS(), SAS Missing functions, Special missing characaters

Reactions: NICE (0) OK (0) NOT OK (0)

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Tips for Producing Comprehensive Integrated Summaries (ISS and ISE)
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Submission Standards

21CFR Part 11
A concept for define.xml generated in SAS
ADaM Dataset Checking Toolkit
ADaM Implementation Guide
ADaM Standards: Introduction
ADaM Version 2.0 Final
ADaM Version 2.1
Analysis Datasets for FDA submissions
CDER Common Data Standards Issues Document
CDISC ADaM Datasets-SDTM to Submission
CDISC Discussion Forum
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CDISC Implementation process
CDISC Implementation Process by Michael Todd (MP3)
CDISC Perspective: Clinical Trial Process
CDISC SDTM 3.1.1 Validation Rules
CDISC SDTM 3.1.2 Validation Rules
CDISC SDTM Basics
CRT's for FDA Submission
Data Definition Tables – Definition and Automation
Date Conversions in SDTM and ADaM Datasets
FDA Study Data Standards Links

SAS Programs (Examples)

Cornell University Sample Programs
SAS Graphs (Replay 4 graphs per page)
Three SAS Programs that use Arrays
University Of Arizona (Sample Programs #1 #2 and #3)
Georgia State University (Sample Programs #1 #2 and #3)

SAS Tips and Sample Codes

?? Format Modifier
Add leading zeros to numeric vars
Call Execute: Easy way to Print or Sort Multiple files
Check How easy to find ERROR/WARNING/UNINITIALIZED messages in the LOG window
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Customize pageno in RTF output
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Lost the SAS Code, No problem....
MDY Function

Macro to check the max. length of variable

More About SAS Macros

P-Value Calculation Made Easy with the SAS® Call Execute

SAS Macros that Convert a Directory of Transport Files

Standard Macros for P-values

Why use Macros

SAS Webinars/Presentations

Cynthia Zender and Michele Burlew offer their vast expertise in a new Webinar presentation: Output Delivery System: The Basics and Beyond

Programmatically Measure SAS Application Performance on any Platform with the New LOGPARSE SAS Macro (Michael Raithel)

Exploring Dictionary Tables with PROC SQL (Kirk Lafler)

Tips and Techniques for Producing Quick Results with PROC SQL (Kirk Lafler)

Statistical Programming in the Pharmaceutical Industry: Moving Forward, Confronting Challenges, and Embracing Opportunities (Jack Shostak)

Using SAS Software in the Design of Clinical Trials (Alex Dmitrienko)

Role of Statistics in Clinical Trials

Clinical Trials in INDIA: Opportunities

Clincal Data Exchange

Define.XML

Developing e-Stds for Clinical Trials Data

Exploring the Analysis Data Model – ADaM Datasets

From SAP to ADaM: The Nuts and Bolts

Future of ODM/SDTM and CDISC

GENERATING Define.xml

How Do I Map That? - SDTM Implementation Challenges

How to build ADaM from SDTM: A real case study

Implementation of CDISC

Implementing SDTM and ADaM Stds

Important Documents from FDA Website

Introducing the CDISC Analysis Data Model(ADaM) Implementation Guide

New Tips and Tricks for Creating a Harmonized, Report-Friendly SDTM and ADaM Lab Data for a CSR

Practical Methods for Creating CDISC SDTM Domain Data Sets from Existing Data

Producing clinical laboratory shift tables from ADaM data

Review and Implementation of CDISC Standards In the Pharmaceutical Industry

SAS Transport Files/ (XPORT) .XPT files

SDTM (Study Data Tabulation Model) V 1.1

SDTM Datasets: Unlocking CDER's 7 Most Commonly Found Problems

SDTM Implementation process

SDTM V 3.1.2 Implementation guide

SDTM Validation Tools or Compliance Checks

Standards for e-sub of data to FDA

Study Data Specifications

Study Data Specifications

The 5 Biggest Challenges of ADaM

Validation Checks for SDTM datasets

Why CDISC Standards

XML Schema Validation for Define.xml

Must read information

Character Functions

Choosing between the DATA Step and PROC SQL

Coming to SAS® from SPSS

Debugging SAS Programs: Understanding the Types of Errors

Don't Be a SAS® Dinosaur: Modernize Your SAS Programs

Little SAS Book (Chapter 1) Getting Started Using SAS® Software

Little SAS Book (Chapter 1) SAS® Enterprise Guide Basics

Performing Queries Using PROC SQL

MDYAMPMw.d and ANYDTDTMw.d Formats

Missing Values: How To detect using Arrays

MMDDYY+: Format that inserts a slash, space or "-" between the date, month and year

New IF functions: IFC and IFN

Option Missing='0'

Option nofmterr; fmtsearch option

Options in SAS INFILE statement:

PROC SQL vs Datastep:

Proc STDIZE: Replace Missing Values

PRXMATCH Function

Random Sample Selection (RANUNI Function)

Read next record while working on the current record (Opposite to LAG function)

Renaming variables using SASHELP views

Reordering variables to be in alphabetical order

Replace missing values into zeros

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SAS Tip 1_Use less code

SAS Tip of the Month: Archive

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SAS Toolbar settings

SAS-L Tips

Saving the LOG file

Sending E-Mail from Within SAS

Special Missing Values (.A -.Z)

Study Day Calculation

Sub&Super scripts in footnotes/titles of report

tod8. format:Format that doesn't remove leading zeros in dates

Top 10 most powerful functions for Proc SQL

Transport Files conversion(.XPT)

Transporting SAS Files using Proc Copy and or Proc Cport/Proc Cimport

Upcasing the variables names

VALIDVARNAME=UPCASE

Variable exists in dataset or not

Ron Cody's Data Cleaning Techniques Using SAS (Chapter 1: Checking Values of Character Variables)

SAS Formats Pocket Reference

SAS Programming in the Pharmaceutical Industry (Chapter 1) Environment and Guiding Principles

SAS® 9.1 SQL Procedure (Users Guide)

SAS® Certification Prep Guide (Chapter 1): Base Programming

Step-by-Step Programming with Base SAS® Software

Validating Clinical Trial Data Reporting with SAS (Chapter 1) Pharmaceutical Industry Overview

Writing Reports with SAS