

## Paper 96-27

## A Utility Program for Checking SAS® Log Files

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### ABSTRACT

Validating a SAS program can be a tedious task, especially when you have to check hundreds and possibly thousands of lines of code in a SAS log file. CHECKLOG is a utility program that is designed to assist you in this task of checking SAS log files. The CHECKLOG program scans one or more SAS log file(s) for: 1) serious errors, 2) errors which may or may not be serious (e.g., warning messages and SAS notes), 3) the number of observations and variables in a data set, and 4) whether or not the program completed execution. You can then print out the output from CHECKLOG and see in one printout all of the possible errors in the SAS log file(s). Reviewing the CHECKLOG output is much easier than going through hundreds and possibly thousands of lines of a SAS log file by yourself in order to find all of the errors. This program was developed on a VMS computer and works with both version 6.12 and 8.2 of SAS.

### INTRODUCTION

Validating SAS programs can be a tedious task. Quite often SAS log files can have hundreds and even thousands of lines of SAS code. While it is possible for you to search a SAS log file by yourself and find all of the errors, it can be a time consuming task and not very efficient. CHECKLOG is a program that is designed to help you find errors in a more efficient manner.

### DESCRIPTION OF CHECKLOG

CHECKLOG is a utility program which scans one or more SAS log file(s) for: 1) serious errors, 2) errors which may or may not be serious (e.g., warning messages and notes), 3) the number of observations and variables in a data set, and 4) whether or not the program completed execution. The CHECKLOG output allows you to see all of this information in an organized manner.

Serious errors are errors that must be fixed in order for the program to run correctly. Examples of serious errors are: 1) SAS error messages, 2) user written error messages, 3) "MERGE statement has more than one data set with repeats of BY values" and 4) "observation(s) outside the axis range" (SASGRAPH®).

Errors that may or may not be serious are errors that need to be checked out, but may or may not affect whether or not the program runs correctly. Examples of these types of errors are: 1) SAS warning messages, 2) user written warning messages, 3) uninitialized variable messages, 4) "At least one W.D format was too small for the number to be printed", 5) "invalid" messages (e.g., "Invalid second argument to function BETAINV"), and 6) "Mathematical operations could not be performed at the following places" (e.g., "Division by zero detected").

CHECKLOG also scans SAS log file(s) for the following message: "observations and." This allows you to check the number of observations and variable in each data set. Here is a sample of CHECKLOG output for the number of observations and variables in a data set.

Finally CHECKLOG checks the end of the SAS log file for the following message: "SAS Campus Drive". If this message is present then CHECKLOG prints a message that the program completed execution. However, if this message is not present then CHECKLOG prints an "alert" that the program did not complete

execution.

The CHECKLOG program was developed on the VMS operating system. Therefore, the CHECKLOG program does have some code that is specific to VMS. However, it should be possible to adapt this program to other operating systems.

### DETAILS OF CHECKLOG

The CHECKLOG program has five major steps. In Step #1, the program gets the name of the log file(s) to be checked. If you do not specify a log file(s), then the program checks all of the log file(s) in the directory.

In Step #2, the source line that is printed at the bottom of each page of the CHECKLOG output is created.

In Step #3, the program gets the full directory name of the SAS log file. The full directory name is printed at the top of each page of the CHECKLOG output.

In Step #4, the program inputs each line of the SAS log file and scans each line for: 1) serious errors, 2) errors which may or may not be serious, 3) the number of observations and variables in a data set and, 4) "SAS Campus Drive" (to check for whether or not the program completed execution). These checks are then outputted and sorted in descending order.

```
do until (upcase(substr(left(line),1,6))='ERROR:' or
         upcase(substr(left(line),1,8))='WARNING:' or
         index(line,'is uninitialized') > 0 or
         index(line,'repeats of BY values') > 0 or
         index(line,'observations and') > 0 or
         index(line,'W.D format') > 0 or
         index(line,'Invalid') > 0 or
         index(line,'Mathematical operations could not') > 0 or
         upcase(substr(left(line),1,10))='USER ERROR' or
         upcase(substr(left(line),1,12))='USER WARNING' or
         index(line,'outside the axis range') > 0 or
         stop);
input line $varying132. v;
end;
```

In Step #5, the program prints out these checks and groups them by the type of check. Serious errors are printed first, followed by errors that may or may not be serious, the number of observations and variables in a data set and whether or not the program completed execution.

### SAMPLE OUTPUT

#### SERIOUS ERRORS

```
*** These errors are serious and must be fixed. ***;
ERROR: Variable BMI not found.
ERROR: Errors printed on page 3.
```

#### ERRORS WHICH MAY OR MAY NOT BE SERIOUS

```
*** These warnings and/or notes may or may not be serious. ***
WARNING: The variable REASON in the DROP, KEEP, or
RENAME list has never been referenced.
```

```
NOTE: Variable GROUP is uninitialized.
```

## NUMBER OF OBSERVATIONS & VARIABLES

\*\*\* This documents the number of observations and variables in the data set. \*\*\*

NOTE: The data set WORK.TEST18 has 14 observations and 45 variables.

## PROGRAM COMPLETES EXECUTION

\*\*\* The SAS Address below indicates that the program completed execution. \*\*\*

NOTE: SAS Institute Inc., SAS Campus Drive, Cary, NC USA  
27513-2414

\*\*\* The SAS Address below indicates that the program completed execution. \*\*\*

ALERT: Program Did Not Complete Execution

## CONCLUSION

CHECKLOG is a useful utility program that can assist you in the process of validating a SAS program. While CHECKLOG is useful in this process, it does not totally replace carefully looking at a SAS log file to make sure that one does not miss any important SAS notes. However, using CHECKLOG can make this task of validating SAS programs much less tedious and much more efficient.

## CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

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