Paper 98

Shortcuts

Janet E. Stuelpner, ASG, Inc., Cary, North Carolina

ABSTRACT

There are many ways to write a variable list. Of course, you can list every variable, which requires a great deal of typing, if you have a large number of variables. However, there are some shortcuts. This paper will discuss several ways within the base SAS product to cut down on the amount of typing that is usually done when listing variables.

INTRODUCTION

Every time you write a program, it is inevitable that you will be creating and using a large number of variables. Every time you need to reference several variables, each must be typed individually. If the list is long, it will require a significant amount of typing. The larger the number of variables to be typed, the greater the possibility of making an error. To avoid errors, it would be nice to have some type of shortcut. This would reduce the amount of typing and the risk of making mistakes. Variable lists are the answer.

Variable lists are a list of variable names following a specific format. There are many ways to write a variable list. Of course, you can list every variable. However, there are some shortcuts that you can use to reduce the number of variables that need to be typed. The shortcuts involve using abbreviated variable lists. These techniques are useful after you have defined all of the variables in your DATA step.

TYPES OF LISTS

There are three kinds of abbreviated lists. It takes a bit of planning to determine which type of list best suits your needs. The key to all of the lists is the manner in which you define your variable names. The three types of lists are the numbered range, the name range and the special SAS names. Below is a discussion of each with examples.

Numbered Range

The numbered range allows you to have a series of variables with the same name. The last character or characters in that name must be consecutive numbers. The number with which you begin can be any number, as long as the numbers are consecutive and the name conforms to the SAS naming conventions. (The naming conventions are defined here. In version 6.12 and before, a SAS name can be no longer than 8 characters. The first character must be a letter or an underscore. Later characters may be letters, numbers or underscores.) In the examples below, the first line is the list of all the variables and the second line is the shortcut.

```
VAR1  VAR2  VAR3  VAR4  VAR5

VAR1-VAR5


DAY1 DAY2 DAY3 DAY4 DAY5 DAY6 DAY7

DAY1-DAY7


ACCT111 ACCT112 ACCT113 ACCT114

ACCT111-ACCT114
```

Name range

SAS keeps the values of all of the variables that are kept in a step in a block of memory called the program data vector (PDV). The name range relies on the position of the variable in the PDV. It will include all variables in the order that they appear in the data vector: firstvar--lastvar. Please note that there is a double dash in between the two variables. In the examples below, the first line is a representation of the variables in the PDV. The second line is the shortcut.

```
JAN FEB MAR APR MAY JUN

JAN -- JUN


AMEX OPTIMA VISA MC DISCOVER

AMEX -- DISCOVER

HEALTH AUTO LIFE DISABLE LIABLE
LONGCARE HOME APT

HEALTH -- APT
```

Be forewarned when using the name range variable list. Using the double dash is very different than using the single dash. The double dash is dependent on the position of the variables in the program data vector. An example of a program data vector and its contents:

```
MON01  MON02  MON03  QTR01  MON04  MON05
MON06  QTR02  MON07  MON08  MON09  QTR03
MON10  MON11 MON12  QTR04
```

The following statement holds true:

```
sum(of mon01--mon12) ne sum(of mon01-mon12)
```

Special SAS names

There are three special names that comprise this category. The name gives you an indication of the type of variable that is included in the variable list.

NUMERIC specifies all of the numeric variables that are included in the current DATA step.

CHARACTER specifies all of the character variables that are included in the current DATA step.

ALL specifies all variables, in the current DATA step, no matter what type

Below are several examples of statements using the special name shortcuts:

```
FINAL=MEAN(OF _NUMERIC_);


ARRAY STUDENT _CHARACTER_;


PROC CONTENTS DATA=DB._ALL_;

%PUT _ALL_;
```

CONCLUSION

Variable lists are very effective short cuts within the SAS system. It gives the programmer the ability to do a significant amount of work with very little coding. Because of the fact that the amount of typing is limited, the number of errors and the amount of debugging are decreased. If planned well, the programmer can utilize this special means of shortening the program. In other words, when naming the variables in the steps of your program, keep in mind when and where you might want to use variable lists.

REFERENCES

SAS Institute Inc.(1990) *SAS Language, Reference Version 6 First Edition*, Cary, NC: SAS Institute Inc.

Aster, Rick and Seidman,Rhena(1991), *Professional SAS Programming Secrets*, Windcrest/McGraw-Hill

DiIorio, Frank C.(1991), *SAS Applications Programming: A Gentle Approach*, Duxbury Press

ACKNOWLEDGMENTS

I would like to take this opportunity to acknowledge all of the help and support given to me by my husband, Bob Stuelpner. He diligently read and reread this paper in an effort to correct the obvious errors and keep me on the right track. His criticisms were constructive and his support never ending.

AUTHOR CONTACT

Janet Stuelpner
ASG, Inc.
1100 Summer Street
2nd floor
Stamford, CT 06905

(203) 356-9540 (voice)
(203) 363-3746 (fax)
jes@asg-inc.com