# Building Dynamic Programs and Applications Using the SAS® Macro Language

***Written and Presented By:***

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*Author, Carpenter's Complete Guide to the SAS® Macro Language, 2nd ed.*

## Course Overview

**This one-day seminar shows you how to take advantage of SAS Macro Language capabilities that enable you to write dynamic programs and applications. By mastering the concepts and techniques presented in this class your programs will become free of hard-coded data dependencies, thus eliminating the need to re-write the code every time a data set name, variable name, or other data attribute, changes. Let "them" change the project's specifications as often as "they" want…your code is ready!**

**The dynamic programs and applications that you will learn how to develop during this seminar:**
• are flexible and are easily adaptable to changing data structures, data table names, and variable (field) attributes
• reduce maintenance requirements by removing data dependencies from within the programs
• provide significant resource savings during program/application development cycles
• give~~s~~ the end-user extensive control over program execution by using tables such as SAS data dictionaries, SAS data sets, and Excel tables
• reduce program validation efforts by providing reusable and generalized code that can be applied to many different applications
• establish controlled data environments and data integrity, thus insuring data consistency throughout your organization

This session emphasizes the techniques needed to make your application as free of hard-coded data dependencies as possible. You will learn the essential elements of writing dynamic code, and throughout the course you will see numerous examples of SAS macros that exploit these capabilities in the SAS System. And, you will learn how to modify these example macros to suit your own projects and programs,

By the end of the day, you will know:

- the essential components of a dynamic application
- about different sources of information on the operating environment, and how to use them when
- developing a dynamic application or program
- how to build and use metadata for dynamic applications
- ways to structure the operating system and SAS environments in which your application will reside
- how to build and use macro libraries to optimal advantage
- styles and methods of dynamically generating code
- the role of SAS-supplied and user-defined macro functions and how to apply them

***Who Should Attend***
Building Dynamic Programs and Applications Using the SAS Macro Language is especially appropriate forSAS programmers responsible for building and/or maintaining SAS programs and/or applications, including collections of interrelated programs.

The materials assume your have a strong background in SAS data step programming, as well as a thorough understanding of SAS Macro Language capabilities.

Prior participation in *Advanced Topics in the SAS Macro Language,* or a comparable level of education/experience with this aspect of the SAS System is ***strongly*** encouraged.

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