

# From %MACRO to %MEND:

## An Introduction to the SAS Macro Language

This one-day course is designed for the SAS programmer who is new to the Macro Language. We will start at the basics and cover the fundamentals necessary to start applying SAS macros in your programs. By the end of the day you will understand how the Macro Language works, what the Macro Symbol Table is and how to values stored in it, how the SAS System uses Macro Variables, key Macro Language concepts, important SAS Macro Language Functions, and how to invoke Macros in your programs. The example Macros shown in the course materials demonstrate the power and flexibility of this part of the SAS System and will enable you to apply its functionalities to your own programs right away.

### **Intended Audience**

This session is suited for the SAS user who already has a basic understanding of the Data Step and Procedure Steps, and who is new to the Macro Language facility in SAS System software. It is a beginning-level course that assumes no prior understanding of the SAS Macro Language. It is also suitable for SAS users who want to understand the Macros found in programs then have "inherited" from other programmers.

### ***Introduction***

- Macro Facility Overview and Terminology
- Macro Execution Phases
- Referencing Environments

### ***Defining and Using Macro Variables***

- Naming, Defining and Using Macro Variables
- Displaying and Resolving Macro Variables
- Automatic Macro Variables

### ***Defining and Using Macros***

- Defining and Invoking A Macro
- System Options Used With The Macro Facility
- Display Manager Command Line Macros
- Statement and Command Style Macros

### ***Macro Parameters***

- Introducing Macro Parameters
  - Positional Parameters and Keyword Parameters
- Using Keyword and Positional Parameters Together

### ***Program Control Through Macros***

- Macros That Invoke Macros
- Using Conditional Macro Statements
- Iterative Execution Using Macro Statements
- Macro Program Statements

### ***Interfacing With The DATA Step***

- Using The SYMPUT Routine
- Using a SAS Data Set
- Using a Flat File
- && Macro Variables and Dynamic Coding
- Moving Text From Macro to DATA Step Variables

### ***Using Macro Functions***

- Character Functions
- Evaluation Functions
- Using DATA Step Functions and Routines