



# SAS Macro

## Two Days

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### Audience

SAS users seeking to extend their Programming Skills.

### Prerequisites

Ideally the delegate will have attended the SAS Fundamentals course or have an equivalent level of competence. We recommend that attendees have three to six months of regular SAS programming experience to gain the most benefit from this course.

### Objectives

This course covers the SAS Macro Language in depth. The theory and methods of the Macro facility are discussed through examples and applications. You will be able to write your own Macros, understand the structure of the SAS Macro Language and deal with the various functions available in the Macro Language.



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### Topics

#### M1 Introduction

- > Common Coding Tasks
- > General Strategy

#### M2 Macro Variables

- > Introduction
- > Automatic Macro Variables
- > Determining the Values of Macro Variables
- > User-Defined Macro Variables
- > Resolution Considerations
- > Macro Variables vs. DATA Step Variables

#### M3 Macros

- > Definition of a Macro
- > Passing Parameters
- > Compilation and Execution Phases

#### M4 Behind the Scenes

- > Symbol Table Rules
- > Deleting Macro Variables
- > Nested Macros
- > GLOBAL and LOCAL Variables

#### M5 Macro Programming

- > Directing Macro Execution
- > Conditional Termination of Macro Flow
- > String Manipulation
- > %SYSFUNC and %QSYSFUNC and %SYSCALL

#### M6 The DATA Step Interface

- > Functions and Call Routines
- > SYMGET
- > Call SYMPUT

#### M7 Handling Special Characters

- > Introduction
- > Numeric Evaluations
- > Introduction to Quoting Functions

#### M8 Working with Macros

- > Using the %INCLUDE Statement
- > The Autocall Library
- > How SAS Resolves Macro Calls
- > Writing Successful Macros