

# SAS Macro Language 2: Advanced Techniques

Course Code: **SIMAC2**

Delivery Method: Instructor-led (classroom)

Duration: 2 Days

## OVERVIEW

Learn how to:

- Creating hierarchical, menu-driven macro applications
- Exploit stored compiled and autocall macro facilities
- Exploit macro quoting functions
- Generate data-driven macro calls
- Perform table lookup operations
- Apply SAS or user-defined formats to macro variables
- Automatically convert data set variables to macro variables
- Search for all CSV, Excel, or Microsoft Access files in a directory and all subdirectories and automatically import each file, worksheet, or table into a SAS data set
- Search for all SAS programs in a directory and all subdirectories and automatically submit every program
- Exploit SAS I/O and external file functions
- Create your own macro functions
- Create macro functions that return the number of observations in a data set or a subset of a data set
- Create a macro function that validates whether a selected variable exists in a selected data set and returns the variable's type
- Create custom windows and menus that interactively gather and validate user-supplied parameter values

## WHO SHOULD ATTEND

Experienced SAS macro programmers who want to learn advanced techniques

### AVANTUS TRAINING PTE LTD

79 Robinson Road #15-04 CPF Building Singapore 068897

Main Tel: (65) 6416 3068

Email: [enquiries@AvantusTraining.com](mailto:enquiries@AvantusTraining.com)

[www.AvantusTraining.com](http://www.AvantusTraining.com)

## PREREQUISITES

In order to be successful in this course, you should have completed the SAS Macro Language 1: Essentials course or have equivalent knowledge and experience. Specifically, you should be able to

- Write macro programs that contain iterative processing and conditional processing
- Create local and global macro variables
- Create macro variables using the SYMPUTX routine
- Utilize indirect macro variable references
- Utilize the SQL procedure SELECT statement INTO clause

This course addresses Base SAS software

## COURSE OUTLINE

### Macro Storage

- Stored compiled macro facility
- Autocall macro facility

### Protecting Special Characters

- Protecting constant text
- Protecting resolved values

### Reading SAS Data

- Data-driven macro calls
- SAS I/O functions

### Reading External Data

- Importing CSV files
- Importing Excel files

### Table Lookup Techniques

- Macro variables
- formats

### Validating User Input

- macro parameters
- macro windows

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