



***Harness the power of SAS' implementation of Structured Query Language (SQL) tools by attending this intensive two-day seminar. Appropriate both for SAS users with no prior exposure to SQL and for experienced SQL programmers who want to implement SQL queries from within the SAS System.***

**After taking this seminar you will be able to:**

- Select rows and/or columns from a file using the **HAVING** and **WHERE** commands
- Create various kinds of summary reports
- Assign values to new columns (variables)
- Execute both correlated and un-correlated sub queries from one or more files
- Use aggregation functions to calculate statistics from the columns in your files
- Easily export your PROC SQL-generated results to an Excel file using SAS' EXCEL LIBNAME Engine
- Understand and use SQL Dictionary Tables
- Implement "fuzzy merges" with SQL commands
- Insert or delete rows and/or columns from your tables
- Display the results of your query using SAS Output Delivery System tools
- Applying "DISTINCT" Syntax to save coding time

# Getting the Most from the SAS® System's PROC SQL



**Presentation Format:**  
**Two days with hands-on exercises and customization of seminar materials**

## Overview

This two-day seminar provides an intensive exposure to features of the SAS System's implementation of the Structured Query Language (SQL) for preparing summaries and reports of information contained in SAS data sets as well as managing data sets by executing commands in the BASE SAS module's PROC SQL. It is presented utilizing a combination of instructor demonstrations, animated visual presentations and code samples. The educational experience is further enhanced by hands-on exercises giving attendees opportunities to practice the core skills and concepts presented in the course materials.

## Intended Audience

This session is designed for SAS users with no experience with SQL concepts. Attendees will be exposed to an effective "mental model" of how PROC SQL "works" enables them to quickly apply what they have learned in the class to their projects, and to explain the results of their work to non-technically oriented team members. Attendees with experiencing using SQL in other software products will appreciate learning how SAS' non-ANSI standard methods of data summarization and grouping make PROC SQL an effective alternative to SQL's implementation in other software products. The materials assume attendees have an understanding of core programming concepts such as data file, observation (row) and variable (column) and are comfortable with basic arithmetic concepts such as sum and mean.

## Topics and Agenda

By attending this session you will learn the core concepts and capabilities underlying the SAS SQL Procedure and how to apply them in your projects and programs. Among the topics presented are:

- Introduction to the Power of PROC SQL
  - Selecting rows and columns from an existing table (data set)
  - Assigning values to new variables/columns using either algebraic coding syntax or the CASE Statement
  - Sorting, summarizing and grouping rows to create a report
  - Using the WHERE and HAVING Clauses to select subsets of rows and/or columns from an existing table or query.
- Executing Common Tasks with PROC SQL
  - Creating Listing and Overall Summary Reports
  - Generating a Summary Report Grouped by the Levels/Values of a Variable/Column
  - Creating a Report with Both Listing and Summary Information
  - Obtain Summary Statistics with Aggregating Functions (e.g., SUM, MEAN)
- Obtaining Data from Two or More Files for Your Report Using Correlated and Un-Correlated Sub-Queries
- Implementing "Joins" to Combine Two or More Files Together
  - Inner, Left, Right, Full, Cross, Union and Natural Joins
  - Reflexive Joins
- Applying SET Operators
- Creating and Managing Tables with SQL
  - Using the "LIKE" Syntax
  - Inserting new rows in to a table
  - Ordering the rows in the tables and reports you create
- Useful PROC SQL Options
- Table Maintenance Tasks
  - Inserting Query Results in to an Existing Table
  - Adding or Deleting Rows and/or Columns from a Table
- Applying SQL Data Views to Improve Efficiency
- SQL Dictionary Tables and How to Use Them
- Using the EXCEL LIBNAME Engine to create Excel files from your SQL query results
- PROC SQL and the SAS Output Delivery System (ODS)

**Contact Sierra Information Services For More Information:**

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