

SAS COURSE CONTENT

Accessing Data :

- Use FORMATTED and LIST input to read raw data files.
- Use INFILE statement options to control processing when reading raw data files.
- Use various components of an INPUT statement to process raw data files including column and line
- pointer controls, and trailing @ controls
- Combine SAS data sets.
- Access an Excel workbook.

Creating Data Structures

- Create temporary and permanent SAS data sets.
- Create and manipulate SAS date values.
- Export data to create standard and comma-delimited raw data files.

Managing Data

- Investigate SAS data libraries using base SAS utility procedures.
- Sort observations in a SAS data set.
- Conditionally execute SAS statements.
- Use assignment statements in the DATA step.
- Modify variable attributes using options and statements in the DATA step.
- Accumulate sub-totals and totals using DATA step statements.
- Use SAS functions to manipulate character data, numeric data, and SAS date values.
- Use SAS functions to convert character data to numeric and vice versa.
- Process data using DO LOOPS.
- Process data using SAS arrays.
- Validate and clean data.

Generating Reports

- Generate list reports using the PRINT procedure.
- Generate summary reports and frequency tables using base SAS procedures.
- Enhance reports through the use of user-defined formats, titles, footnotes and SAS System reporting.
- Generate reports using ODS statements.

Handling Errors

- Identify and resolve programming logic errors.
- Recognize and correct syntax errors.

- Examine and resolve data errors.

Advanced SAS :

Accessing Data Using SQL

- Generate detail reports by working with a single table, joining tables, or using set operators in the SQL procedure.
- Generate summary reports by working with a single table, joining tables, or using set operators in the SQL procedure.
- Construct sub-queries and in-line views within an SQL procedure step.
- Compare solving a problem using the SQL procedure versus using traditional SAS programming techniques.
- Access Dictionary Tables using the SQL procedure.

Macro Processing

- Create and use user-defined and automatic macro variables within the SAS Macro Language.
- Automate programs by defining and calling macros using the SAS Macro Language.
- Understand the use of macro functions.
- Use various system options that are available for macro debugging and displaying values of user-defined and automatic macro variables in the SAS log.
- Create data-driven programs using SAS Macro Language.

Advanced Programming Techniques

- Demonstrate the use of advanced data look-up techniques such as array processing, hash objects, formats, and combining/merging data.
- Reduce I/O by controlling the space required to store SAS data sets using compression techniques, length statements, or eliminating variables and observations.
- Reduce programming time by developing reusable SAS programs which incorporate data step views, DATA steps that write SAS programs, and the FCMP procedure.
- Perform effective benchmarking by using the appropriate SAS System options and interpreting the resulting resource utilization statistics.
- Determine the resources used by the SORT procedure and avoid unnecessary sorts by using appropriate indexes, data set options, BY statement options, and the CLASS statement.
- Identify appropriate applications for using indexes and create them using the DATA step, the DATASETS procedure, or the SQL procedure.
- Compare techniques to eliminate duplicate data using the DATA step, the SORT procedure, and the SQL procedure.