e-Learning Reporting
Training Content

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Course Aims

After completing this course attendees should be familiar with the different methods of creating tabular reports with the SAS System and able to choose the appropriate method for a particular report.

Duration

3 days

Required Knowledge

Attendees should have completed Base Programming or have at least five months' experience of programming with the SAS System.

Reporting Course

1. Reporting
    - 1.1 Basic Reporting Procedures
        - Creating list reports – the PRINT procedure
        - Producing summary statistics – the MEANS & SUMMARY procedures
        - Creating frequency tables – the FREQ procedure
    - 1.2 Specialised Reporting
        - Creating tabular reports – the TABULATE procedure
        - Producing custom reports – the REPORT procedure
        - Reporting with the DATA step
    - 1.3 What is the ODS?
        - ODS Destinations

2. The Output Delivery System
    - 2.1 How Does the ODS Work?
        - Opening and Closing Destinations
        - Tracing output objects - ODS TRACE
        - Referencing output objects
        - 2.1 Exercises
        - 2.1 Solutions
    - 2.2 Sub-Setting Output Objects
        - Selection and Exclusion Lists
        - The PERSIST argument
        - Sub-Setting Objects - ODS OUTPUT
        - 2.2 Exercises
        - 2.2 Solutions
    - 2.3 Producing HTML Output
        - The ODS HTML destination
        - Concatenating output from multiple procedures
        - Indexing results
        - 2.3 Exercises
        - 2.3 Solutions

3. Basic Reporting Procedures
    - 3.1 The PRINT Procedure
        - The PROC PRINT statement
        - PROC PRINT statement options
        - PROC PRINT procedure statements
        - 3.1 Exercises
        - 3.1 Solutions
    - 3.2 The MEANS & SUMMARY Procedure
        - The PROC MEANS statement
        - PROC MEANS statement options
        - PROC MEANS procedure statements
        - Automatic variables
        - 3.2 Exercises

3.2 Solutions
3.3 The FREQ Procedure
- The PROC FREQ statement
- PROC FREQ statement options
- The TABLES Statement
- Frequency and Cross-tabulation tables
- The OUTPUT Statement
3.3 Exercises
3.3 Solutions

4. The TABULATE Procedure
4.1 The TABULATE Procedure
- Reporting with the TABULATE procedure
- The PROC TABULATE statement
- PROC TABULATE statement options
- PROC TABULATE procedure statements
4.2 Defining a Table
- Column dimension reports
- Concatenating expressions
- Adding a row dimension
- Adding a page dimension
- BY-Group Processing vs. the Page Dimension
4.2 Exercises
4.2 Solutions
4.3 Customising a Table
- Customising column headings
- Formatting cells
- Adding summary rows & columns
- Ordering output based on a format definition
- Customising table outlines - FORMCHAR Option
4.3 Exercises
4.3 Solutions
4.4 The TABULATE Procedure & ODS
- Producing Web-ready reports
- Customising tabular output - STYLE= Option
- The KEYWORD Statement
4.4 Exercises
4.4 Solutions

5. The REPORT Procedure
5.1 The REPORT Procedure
- The PROC REPORT statement
- PROC REPORT statement options
- PROC REPORT procedure statements and options
5.2 Creating a Report
- Detail reports
- Summary reports

- Aligning headers
- ACROSS variables
- Adding summary lines - BREAK/RBREAK Statements
5.2 Exercises
5.2 Solutions

5.3 Creating Computed Items
- COMPUTE blocks
- The CALL DEFINE statement
5.3 Exercises
5.3 Solutions

5.4 The Report Building Process
- REPORT procedure variables
- Building Detail Rows
- Building summary lines

5.5 The REPORT Procedure & the ODS
- Producing HTML with the REPORT procedure
- The STYLE= option
5.5 Exercises
5.5 Solutions

5.6 Storing & Using a Report Definition
- Storing a report definition - OUTREPT= Option
- Using a report definition - REPORT= Option
- Creating an output data set

6. Interface with Microsoft Excel

6.1 Viewing a SAS Data Set in Excel, PROC IMPORT & PROC EXPORT
- Viewing a SAS Data Set in Excel
- Converting a SAS Data Set to an Excel workbook/sheet - PROC EXPORT
- Converting an Excel workbook/sheet to a SAS Data Set - PROC IMPORT
6.1 Exercises
6.1 Solutions

6.2 Libname Engines
- LIBNAME Engines to access Excel Files
- Compatibility issues
6.2 Exercises
6.2 Solutions

6.3 XMLSS: XML Spreadsheet Schema
- What is XMLSS?
- Writing XMLSS with a DATA Step

6.4 ODS Tagset.ExcelXP
- General Syntax
- PROC TEMPLATE and ODS Options
- Style attributes
- Formats in Excel
6.4 Exercises
6.4 Solutions

7. Reporting with The DATA Step

- 7.1 Writing Data with the DATA Step
  - Writing raw data
  - The FILE statement
  - The PUT statement
- 7.2 Customising Report Layout
  - Adding titles & footnotes
  - Writing to PRINT and external files
  - Customising List reports
  - Adding column headers
  - Controlling new pages
  - Writing column headers to all pages
  - 7.2 Exercises
  - 7.2 Solutions
- 7.3 Formatting Report Values
  - The FORMAT statement
  - Aligning formatted values
  - 7.3 Exercises
  - 7.3 Solutions
- 7.4 Creating Totals in DATA Step Reports
  - Totalling values - Producing sub/grand totals
  - Executable & Declarative Statements
- 7.5 The DATA Step & the ODS
  - The DATA step & the ODS
  - The FILE statement - ODS= Option
  - The PUT statement - _ODS_ Option
  - Pointer controls & the ODS
  - Applying column attributes