

## QMF for Developers

### Course Summary

#### Description

This course begins with an overview of the Structured Query Language (SQL) as used within the Query Management Facility (QMF). Participants will develop QMF queries using Structured Query language (SQL) as well as exploring the prompted Query approach. They will also develop QMF procs to automate many tasks within QMF.

The course provides comprehensive coverage of the capabilities and uses of QMF, with a focus on learning the Structured Query Language (SQL) and the different types of reports that can be produced using QMF forms. In addition, QMF's "Prompted Mode" capability, Forms, Procedures and Global Variables are introduced. Workshops are used throughout the course to reinforce newly learned topics.

#### Objectives

At the end of this course, students will be able to:

- Chiefly, learn to develop and execute an SQL or Prompted Mode query
- Know the fundamentals of Structured Query Language (SQL)
- Be able to access the different forms that comprise QMF
- Know what each form does and when you should use each of them
- Understand the benefits of using the prompted query approach instead of SQL
- Ability to create and maintain objects such as queries, forms and procedures within QMF

#### Topics

- QMF Overview
- Introduction to SQL
- QMF Formatting
- QMF Control Breaks
- QMF Edit Codes, Usage Codes and QMF Variables
- Flexible Search Queries
- Advanced Reports
- QMF Object Management
- Advanced Topics
  - Joins
  - Join Terminology
  - Intersection
  - Joining a Table to Itself
  - Creating a QMF Procedure (PROC)
  - LISTPROCS

#### Audience

This course is for developers who need to create and execute SQL statements within the QMF environment to retrieve data, build reports, and automate procedures.

#### Prerequisites

Participants must have the ability to use TSO and ISPF, but no previous experience in SQL is required.

#### Duration

Three days

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### Course Outline

- I. QMF Overview**
  - A. QMF Panels
  - B. QMF Queries
  - C. QMF Formatting
  - D. Basic SQL SELECT Statements
  - E. SQL Searching and Sorting
  - F. QMF Control Breaks
  - G. QMF Object Management
  - H. QMF Formatting: FORM.DETAIL
  - I. QMF Summarization
  - J. Prompted Query
  - K. QMF HELP
  - L. QMF Profile
  - M. ISPF Editor
  - N. Saving and recalling queries
- II. Introduction to SQL**
  - A. Creating and executing SQL queries within QMF
  - B. Negative Expressions (NOT)
  - C. Nulls, Not Null
  - D. Between, In, Like
  - E. Order By
  - F. SQL Dates, Times, and Timestamps
  - G. How Dates Are Stored and Displayed
  - H. Date Formatting
  - I. Date Arithmetic and Date Functions
  - J. Labeled Durations
  - K. Time Functions
  - L. Timestamps
- III. QMF Formatting**
  - A. Creating a report layout (FORM)
  - B. FORM.DETAIL (report's characteristics)
  - C. FORM Panels (FORM.MAIN, FORM.DETAIL, FORM.CALC, FORM.PAGE, FORM.BREAK1-6, FORM.FINAL, FORM.OPTIONS, FORM.CONDITIONS)
  - D. Adding Detail Headings and Footings
  - E. Adding Detail Block Text
  - F. Modifying Forms
  - G. Specifying New Column Values and Alignment
  - H. The LAYOUT Command
  - I. The LIST FORMS Command
- IV. QMF Control Breaks**
  - A. Control Break Concepts
  - B. Creating a Control Break
  - C. Nested Control Breaks
  - D. Control Break Rules
  - E. Control Break Text
  - F. Breaking on Omitted Column
  - G. FORM.OPTIONS
- V. QMF Edit Codes, Usage Codes and QMF Variables**
  - A. Character Columns
  - B. Numeric Columns
  - C. Date Columns
  - D. OMIT, SUM, COUNT, FIRST, LAST, MAXIMUM, MINIMUM
  - E. CSUM, AVG, STDEV, PCT, CPCT, TCPCT, GROUP, ACROSS
  - F. &DATE, &TIME, &PAGE, &ROW, &n, &AVGn, &CALCn, &COUNT, &CPCTn, &CSUMn, &FIRSTn, &LASTn, &MAXn, &MINn, &SUMn
  - G. Flexible Search Queries
  - H. Using Variables
  - I. Letting QMF Calculate Data Values
- VI. Advanced Reports**
  - A. Grouping and Across Reports
  - B. ACROSS with GROUP
  - C. Changing the format for Control Break reports
  - D. Effect of outlining NO
  - E. Two or more levels of control break
  - F. ADDING CONTROL BREAK TEXT AND SUMMARY STATISTIC
  - G. Statistical analysis functions
  - H. Adding multiple lines of control text
  - I. Detail Blocks: Complete control over formatting of rows
  - J. Letting QMF Calculate Values: FORM.CALC

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### Course Outline (cont'd)

#### VII. QMF Object Management

- A. Summary of QMF Commands
- B. LIST OF QMF COMMANDS
- C. QMF COMMANDS LISTED BY FUNCTION GROUP
- D. QMF COMMANDS LISTED BY FUNCTION KEYWORD
- E. STORING YOUR QMF WORKSPACE OBJECTS PERMANENTLY: SAVE
- F. Using a simple PROC with saved objects
- G. Examples of SAVE commands
- H. GETTING A COPY OF A SAVED OBJECT: DISPLAY
- I. OBTAINING A LIST OF SAVED OBJECTS: LIST
- J. CREATING A SKELETON QUERY: DRAW
- K. PRINTING
- L. VIEWING WHAT YOUR PRINTED REPORT WILL LOOK LIKE: DPRE
- M. EXECUTING A QUERY OR A PROC: RUN
- N. JUMPING TO A PANEL: SHOW
- O. CLEARING A PANEL AND WORKSPACE OBJECT: RESET
- P. PUTTING A COPY OF AN OBJECT INTO A TSO FILE: EXPORT
- Q. RETRIEVING OBJECTS FROM TSO: IMPORT
- R. WHAT TO DO WHEN YOU DON'T KNOW THE SYNTAX

#### VIII. Advanced Topics

- A. Joins
- B. Join Terminology
- C. Intersection
- D. Joining a Table to Itself
- E. Creating a QMF Procedure (PROC)
- F. LISTPROCS