

## QMF for Programmers (3 Day)

### Description:

Students who complete this course will be able to code SQL statements to access DB2 objects using QMF. The student also learns how to use QMF forms to tailor the presentation of results from QMF queries.

### Audience:

Application programmers who need to work with DB2 data using QMF, and who need to develop applications that incorporate QMF functions.

### Prerequisites:

Application programmers who need to work with DB2 data using QMF, and who need to develop applications that incorporate QMF functions.

### Major Topics Include

- DB2 concepts
- QMF commands
- QMF procedures
- SELECT, UPDATE, DELETE, INSERT
- Data aggregation
- Joined and nested queries
- Creating DB2 tables
- DB2 objects
- DB2 system catalog tables
- QMF forms
- Report tailoring
- Batch QMF

### Exercises

There are nine machine exercises and one optional machine exercise.

## **QMF For Programmers - Topical Outline**

### **Introduction**

Overview of DB2

The course data base

*Computer Exercise: Course setup*

### **Relational Operations - Select, Project, And Join**

Introduction To SQL

Introduction To QMF

*Computer Exercise: A First Exploration of SQL*

### **More complex SQL**

SELECT DISTINCT

SELECT with multiple conditions

SELECT with computed values

NULL and LIKE in SELECT statements

QMF Objects

QMF Commands: HELP, DISPLAY, RESET, ERASE, LIST, SHOW, SAVE

*Computer Exercise: SELECT with Complex Conditions*

### **More On SQL**

FETCH FIRST “n” ROWS ONLY

Built-in Column Functions

GROUP BY

HAVING

ORDER BY

QMF Commands: EXPORT and IMPORT

*Computer Exercise: Data Aggregates*

### **More On SQL**

Special Registers

Dates, Times, and Timestamps

Labeled Durations

Built-in Scalar Functions

Categories of Scalar Functions

Commonly Used Scalar Functions

QMF Variables

QMF Commands: SET GLOBAL, RESET GLOBAL, SHOW GLOBALS, and RUN

*Computer Exercise: Special Registers and Scalar Functions*

## **Joins**

- Ambiguity and Name Specification
- Three or more Tables
- Multi-column Joins
- Joining a Table to Itself
- Joins with Aggregates
- Outer Joins
- The "Classic" Join
- QMF Procedures
- Linear Procedures
- Procedures with Logic
- Computer Exercise: Joins*

## **Subqueries**

- With IN / NOT IN
- With Comparison Operators
- With ANY and ALL
- With EXISTS / NOT EXISTS
- Correlated Subqueries
- Finding Mismatches
- Scalar Fullselects
- UNION, EXCEPT, and INTERSECT
- QMF Commands: EDIT, CONNECT, DRAW, PRINT, ISPF, TSO, RETRIEVE, QMF, INTERACT, MESSAGE, GET GLOBAL
- Computer Exercise: Subqueries and UNION*

## **Data Definition**

- CREATE, DROP, and ALTER
- Data Types
- UPDATE
- DELETE
- INSERT
- Views
- DB2 Security for Tables
- DB2 Catalog Tables
- Computer Exercise: Defining Views and Changing Tables*

## **QMF Forms**

FORM.MAIN

Usage Codes and Edit Codes

FORM.BREAK - Subtotals

FORM.CALC - Derived Fields

FORM.COLUMNS - Column Specification

FORM.CONDITIONS - Conditional Formatting

FORM.DETAIL - Non-columnar Reports

FORM.FINAL - Report Trailers

FORM.OPTIONS - Customizing Reports

FORM.PAGE - Page Headings and Footings

*Computer Exercise: Report Tailoring with the Forms Panel*

## **Odds and Ends**

QMF Charts

Prompted Query

QMF in Batch

The Table Editor

Query-by-Example

Programming Interfaces

*Computer Exercise: Batch QMF*