QMF - Query Management Facility

Course Summary

Description

This course aids the student with learning to manipulate and retrieve data from DB2 tables. The student will understand the DB2 environment and the data structures within the DB2 environment. Lab assignments will be used to provide a better comprehension of the lectured material.

Objectives

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

- Manipulate DB2 tables using SQL or QBE
- Understand the DB2 environment and the data structures within the DB2 environment
- Utilize basic SQL retrieval and update functions within the Query Management Facility (QMF)
- Customize reports and understand the report formatting procedures within the Structure Query Language (SQL) or Query By Example (QBE) under QMF
- Understand advanced SQL functions such a joining DB2 tables, using aggregate functions, correlated subselects and the union of DB2 tables
- Understand basic Query By Example (QBE)

Topics

- DB2 Concepts and Terminology
- QMF Concepts and Terminology
- Basic and Advanced SQL Overview
- Basic QBE
- QMF Command Overview
- Report Formatting
- Security Overview

Audience

This course is intended for application programmers, consultants and end users who will be manipulating and retrieving data from DB2 tables.

Prerequisites

The student should have minimal experience with TSO and ISPF Panels.

Duration

Three days

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Course Outline

I. DB2 Concepts and Facilities
- A. What Is DB2?
- B. What Is The History Behind DB2?
- C. What Are DB2's Objectives?
- D. What Is A Relational DBMS?
- E. DB2 Terminology
- F. Physical Hierarchy of DB2 Objects
- G. Naming Conventions
- H. Object Naming Conventions
- I. Base Tables
- J. View Table
- K. Synonym
- L. Indexes
- M. DB2 Alphanumeric Data Types
- N. DB2 Numeric Data Types
- O. Date and Time Data Types
- P. Display Formats
- Q. Null Characteristic
- R. DB2 Catalogs

II. Introduction to QMF
- A. Query Management Facility
- B. QMF Environment
- C. QMF Home Panel
- D. Query Profile Panel
- E. QMF Query Panel
- F. Preparing a Query
- G. QMF Report Panel

III. Basic Data Manipulation
- A. Structured Query Language (SQL)
- B. Table Names
- C. Basic SELECT Statement
- D. WHERE Clause
- E. Inequalities
- F. Specific Column Selection
- G. CASE Expression
- H. Derived Columns
- I. Date and Time Usage
- J. Common Special Registers
- K. ORDER BY Clause - The Results Table Sort
- L. Ordering Derived Columns
- M. Distinct Operand
- N. Expanding on the WHERE Clause
- O. Multiple Conditions
- P. BETWEEN Clause
- Q. IN Clause
- R. LIKE Clause
- S. Negative Logic
- T. Nulls
- U. IS DISTINCT FROM
- V. Types of Built-In Functions
- W. Aggregate Functions
- X. Functions Involving Null Values
- Y. Null Values Are Considered In
- Z. Scalar Functions
- AA. Scalar Function - CHAR
- BB. Scalar Function - Date or Time
- CC. Scalar Function - Hour, Minute, Second, Year, Month, Day
- DD. Scalar Function - Days
- EE. Scalar Function - Decimal
- FF. Scalar Function - TRUNC
- GG. Scalar Function - ROUND
- HH. Scalar Function - Digits
- II. Scalar Function - Integer
- JJ. Scalar Function - CAST
- KK. Scalar Function - Value
- LL. Scalar Function – UCASE and LCASE
- MM. Scalar Function - STRIP
- NN. Scalar Function - POSSTR
- OO. Scalar Function - SUBSTR
- PP. Scalar Function - Concatenation
- QQ. GROUP BY Clause
- RR. HAVING Clause

IV. Advanced Data Manipulation
- A. Join
- B. Inner Join
- C. Full Outer Join
- D. Left - Right Outer Joins
- E. Join of More than Two Tables
- F. Subquery
- G. Single Value Subquery
- H. Multi-valued Subqueries
- I. Multi-valued Subqueries - All
- J. Multi-valued Subqueries – Any or Some
- K. Multi-Column Subqueries
- L. Correlated Subqueries
- M. Correlated Subqueries - Exists
- N. Using Correlation Variable to Check R.I.
- O. Nested Table Expression
- P. UNION
- Q. UNION All
- R. Rules for UNION
- S. Performance Considerations

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Course Outline (cont'd)

V. Query By Example
- A. QBE - Query By Example
- B. QBE Query Screen
- C. QBE Framework
- D. Selecting Specific Columns
- E. Ordering The Query Result (AO, DO)
- F. Ordering By More Than One Column
- G. Eliminating Duplicate Rows
- H. QBE Example Table Graphic Adjustment
- I. To Add Or Delete QBE Example Table Rows
- J. Multiple Conditions
- K. Conditions Boxes
- L. Conditions Box Example

VI. Prompted Query
- A. Prompted Query
- B. Prompted Main Panel
- C. Specifying Tables
- D. Specify Panel
- E. Selecting Columns
- F. Row Conditions
- G. Comparison Operators
- H. Running The Query

VII. Update Data Manipulation
- A. INSERT
- B. UPDATE
- C. DELETE
- D. DB2 Valid SQL Return Codes For Updating

VIII. QMF Report Formatting
- A. QMF Report Formatting Features
- B. Running The Query
- C. Form.Main Panel
- D. Form.Options Panel
- E. Form.Columns Panel
- F. Changing The Column Titles and Sequence
- G. Changing The Column Width
- H. Changing The Column Indents
- I. EDIT Codes
- J. USAGE Codes
- K. USAGE Code Example
- L. FORM.BREAKx Panel
- M. FORM.BREAK1 Example
- N. FORM.PAGE
- O. FORM.PAGE Example
- P. FORM.FINAL
- Q. FORM.FINAL Example
- R. Creating Summary Reports
- S. Group Example
- T. Across Summary Reports
- U. Across Example

IX. QMF Commands
- A. Ways to Issue QMF Command Codes
- B. SAVE Command
- C. ERASE Command
- D. DISPLAY Command
- E. DPRE Command
- F. DRAW Command
- G. EDIT Command
- H. EXPORT Command
- I. IMPORT Command
- J. ISPF Command
- K. LIST Command
- L. PRINT Command
- M. RESET Command
- N. RETRIEVE Command
- O. RUN Command
- P. SET PROFILE Command
- Q. SET GLOBAL Command
- R. TSO Command
- S. BATCH Command

X. QMF Procedures
- A. QMF Procedures
- B. The PROC Panel
- C. PROC Example
- D. Using Variables in Queries
- E. Using Variables in Procedures

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