Db2 Concepts and Facilities

Course Summary

Description

This two-day course is designed to provide students with a high-level overview of Db2 z/OS. You will learn about terminology, database concepts, basic SQL, as well as an introduction to application programming concepts and QMF reporting.

Objectives

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

- Understand the concept of relational databases and the Db2 environment
- Illustrate the application analysis and design process for Db2 tables
- Identify the Db2 design and performance considerations during the design process
- Implement the normalization process used with relational databases
- Understand implementation of referential integrity including proper delete rule selection
- Understand basic and advanced SQL coding syntax
- Utilize coding conventions and syntax in SQL statements used to develop Db2 applications
- Understand Db2 physical structure including indexes
- Describe the process necessary to embed SQL statements in COBOL, PL/1, or C programs and prepare them for execution in a Db2 environment
- Learn how to code SQL statements that manipulate and define Db2 tables
- Overview of QMF

Topics

- Db2 Concepts and Terminology
- The Application Design Process
- Db2 Table Design
- Basic and Advanced SQL Topics
- Application Programming Considerations
- Db2 Physical Storage
- Referential Integrity Overview
- Program Preparation
- Overview of QMF

Audience

Application programmers and programmer/analysts who will be using SQL statements in a high level programming language (COBOL or C) to manipulate Db2 tables in a CICS, TSO or IMS/TM environment This course would also be beneficial to analysts and database administrators who support application teams

Prerequisites

Before taking this course, students should have knowledge of one the programming languages listed. Students also need experience with TSO/ISPF and knowledge of file structures such as VSAM, IMS, or QSAM.

Duration

Two days

Db2 Concepts and Facilities

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. What are Db2's features?
- F. DM2 TMP interfaces
- G. Operational environment
- H. SQL
- I. Program preparation process
- J. Unit of recovery
- K. Commit/rollback
- L. Db2 terminology
- M. Physical hierarchy of Db2 objects
- N. Db2 catalogs

II. Basic Data Manipulation
- A. Structured Query Language (SQL)
- B. Basic SELECT statement
- C. Table names
- D. WHERE clause
- E. Derived columns
- F. Data and time usage
- G. Special registers
- H. Expanding on the WHERE clause
- I. Aggregate functions
- J. Scalar functions
- K. Scalar function-date or time
- L. Scalar function-days
- M. Scalar function-substr
- N. Scalar function-concatenation

III. Advanced Data Manipulation
- A. Join
- B. Subquery
- C. Union

IV. Update Data Manipulation
- A. INSERT
- B. UPDATE
- C. DELETE
- D. Db2 valid SQL return codes for updating

V. Application Program Considerations
- A. Db2 program components
- B. Db2 additions to a program structure
- C. DCLGEN utility
- D. Expanded include member
- E. Mainline considerations: CURSOR processing, NON-CURSOR processing

VI. Program Preparation Process

VII. Data Definition Language
- A. Structured Query Language (SQL)
- B. DDL-referential integrity
- C. DDL-CREATE TABLE statement
- D. DDL-views

VIII. Data Control Language
- A. Structured Query Language (SQL)
- B. DCL-security
- C. DCL-GRANT/REVOKE
- D. DCL-SECONDARY AUTH-ID

IX. Introduction to QMF
- A. Query Management Facility
- B. QMF environment
- C. QMF home panel
- D. Preparing a Query
- E. QMF report panel

X. QMF Report Formatting
- A. QMF report formatting features
- B. Running the Query
- C. FORM.COLUMNS panel
- D. Changing the column titles and sequence