

Duration: 5 days

Course Number: ISI-DB2-01

Description

This class teaches students the concepts, skills, and techniques required to write SQL and application programs to access DB2 data. The concepts of DB2 are presented, and Structured Query Language (SQL) is taught as the means to create, access, and secure DB2 data. The use of QMF and/or SPUFI to execute SQL statements is taught. The concept of referential integrity concepts and implementation are covered. DB2 SQL programming / embedding SQL in a COBOL application program is presented and discussed in detail. DB2 performance guidelines are discussed. Upon successful completion of this class, students will be able to:

- Explain DB2 concepts, terminology and components.
- Discuss the concept of Primary Key (PK), Unique Key (UK), and Foreign Key (FK).
- SELECT rows of data from DB2 tables.
- Use QMF and/or SPUFI to execute SQL statements.
- Use the WHERE clause to SELECT specific rows of a DB2 table.
- Build queries using the ORDER BY, GROUP BY, HAVING clauses.
- Use the CASE expressions and several scalar / column functions.
- Access multiple tables via joins, unions, subqueries, and nested table expressions.
- Create tables, indexes, and views.
- Modify table data using INSERT, UPDATE, and DELETE statements.
- Describe the security provided by the GRANT and REVOKE statements.
- Discuss the design considerations of referential integrity.
- Perform DCLGENs to build table definitions and I/O areas.
- Write COBOL programs to select a single row or multiple rows, and change rows.
- Discuss the importance of the SQLCODE and how to test for it.
- Discuss overall DB2 performance considerations.
- Run the EXPLAIN PLAN SQL statement and analyze results.

A series of written and lab exercises will be used to reinforce the classroom education.

Audience

Application programmers who need use SQL to design and develop programs to access DB2 data.

Prerequisites

- TSO/ISPF, or equivalent experience
- Six months of COBOL programming experience is recommended.

Course Agenda

Day 1

Introduction to DB2

- Course Introduction
- DB2 Concepts and Terminology

Structured Query Language

- The SELECT Statement
- Hands-on Lab: SELECT
- Using SPUFI and DB2 Commands
- SQL Functions
- Hands-on Lab: SELECT / Special Features
- ORDER BY, GROUP BY, HAVING clauses
- Hands-on Lab: ORDER BY, GROUP BY, HAVING

Day 2

Structured Query Language (continued)

- Joins, Subselect, UNION
- Hands-on Lab: Join, Subselect, UNION
- Data Definition Language
- INSERT, UPDATE, DELETE Statements
- Hands-on Lab: Creating DB2 Components and INSERT, UPDATE, DELETE
- Other SQL Topics

Day 3

DB2 Application Programming

- Overview
- Data and Procedure Division Changes
- Hands-on Lab: SELECT a single row into a program
- SELECTing Multiple Rows
- Hands-on Lab: SELECT more than one row - the Cursor

Course Agenda (continued)

Day 4

DB2 Application Programming (continued)

- Locking
- INSERT, UPDATE, DELETE
- Hands-on Lab: Updating and Referential Integrity

Day 5

DB2 Application Programming (continued)

- Hands-on Lab: Updating and Referential Integrity
- Additional Topics
- Other Programming Considerations
- DB2 Performance Introduction
- Hands-on Lab: Analyze SQL Statements