

Duration: 3 days

Course Number: ISI-DB2-21

Description

This course introduces students to advanced features of SQL used to access DB2 tables in COBOL programs in an AS/400 environment. First, DB2 programming is reviewed in detail. Differences in DB2 between z/OS and OS/400 are discussed, and the following areas are presented, discussed and build into programs:

- DB2 referential integrity.
- Inner and outer joins.
- 3-, 4-, 5- and 6-way joins.
- Scrollable cursors.
- Use the expanded use of unions.
- Fetching 1 (or 2 or 15) row only.
- Indicator variables.
- Dynamic SQL.
- Nested table expressions.
- The CASE expression and column functions and scalar functions.
- Check constraints.
- Create tables, views and indexes.

DB2 performance guidelines are discussed in detail. The SQL statement EXPLAIN PLAN is used to help to evaluate the efficiency of SQL statements. Advanced programming performance considerations are presented to tuned programs to perform better than their untuned counterparts.

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

Audience

Application programmers who need SQL to access DB2 tables in AS/400 COBOL programs.

Prerequisites

- At least six months of DB2 COBOL Programming experience is required.

Course Agenda

Day 1 - Single Table Access

DB2 Programming review and z/OS – OS/400 environment differences

Create tables, views and indexes.

- Hands-on Lab: Create tables and Read a table with a program

DB2 Referential Integrity

- Hands-on Lab: DB2's RI

Indicator Variables

- Hands-on Lab: Handling Nulls – Select, Insert, Update

Dynamic SQL

- Hands-on Lab: Dynamic SQL – Update, Delete, Select

Nested Table Expressions

- Hands-on Lab: Nested table Expression – Single table

The CASE expression and column functions and scalar functions

- Hands-on Lab: CASE and Scalar/Column Functions

Day 2 - Multiple Table Access

Nested Table Expressions

- Hands-on Lab: Nested table Expression – Multiple tables

Scrollable Cursors

- Hands-on Lab: Scrollable Cursors (Version 7)

Unions Everywhere

- Hands-on Lab: UNION Everywhere (Version 7)

Inner and Outer Joins

- Hands-on Lab: Inner/Outer Joins

Course Agenda (continued)

Day 2 - Multiple Table Access

Joining more than 2 tables

- Hands-on Lab: More than 2 table Joins

Fetching 1 (or 2 or 15) Row only

- Hands-on Lab: Limiting Rows Fetched (Version 7)

Day 3 -Additional Advanced Programming Considerations

Other Topics – Update Triggers, Check Constraints, UDT, UDF

- Hands-on Lab - Other Topics - Triggers, Check Constraints, UDT, UDF

Performance Considerations

- Performance Advanced DB2 Programming Considerations
- Visual Explain
- PLAN_TABLE and DSN_STATEMENT_TABLE