

## **DB2 Application Programming**

### **Course Summary**

#### **Description**

This workshop is designed to provide knowledge of using SQL in DB2 for OS/390 or z/OS. This knowledge can be applied to implementing SQL into programs (COBOL programs will be used). Hands-on practice with DB2 will be included, in order to reinforce the concepts and techniques studied in the course. Performance improving techniques will be discussed and the output from the DB2 optimizer will be analysed, using the EXPLAIN facility.

#### **Objectives**

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

- Understand the concepts of a relational database system.
- Use SPUFI (on TSO/ISPF) to write SQL queries.
- Embed SQL commands into a batch COBOL program to read and update data from tables.
- Code a SQL in a program to access multiple rows of data.
- Prepare and execute programs.
- Know the locking strategies available with DB2.
- Understand the basic features and options available when using DB2 packages and plans.
- Be familiar with several DB2 objects.
- Identify SQL performance improving techniques and use EXPLAIN to analyse SQL statements.
- Design DB2 indexes for performance.
- Identify design issues in batch programs that require SQL COMMIT commands. Identify techniques for recovery and restart ability in programs.

#### **Topics**

- Basic Theory
- SQL Table Joins
- Preview (optional)
- Program Preparation
- COMMITTS and BATCH PROGRAMS

#### **Audience**

This class is designed for Programmers, Analysts, Project leaders, managers and end users, who need to access DB2 data on OS/390 or z/OS.

#### **Prerequisites**

Students should have COBOL programming experience.

#### **Duration**

Five days

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### **Course Outline**

#### **I. Basic Theory**

- A. SQL Introduction
- B. SPUFI
- C. SQL Lab 1
- D. SQL Basics
- E. SQL Lab 2
- F. SQL Basics (continued)
- G. SQL Lab 3

#### **II. SQL Table Joins**

- A. SQL Lab 4
- B. SQL Subselect
- C. SQL Lab 5
- D. DML and Objects
- E. SQL Lab 6

#### **III. Preview (optional)**

- A. SQL in PROGRAMS
- B. LAB preparation and workshop #1
- C. Error Handling
- D. workshop #2

#### **IV. Program Preparation**

- A. DB2 Security
- B. workshop #3
- C. DB2 Objects
- D. DB2 Locking
- E. SQL - OUTER JOINS/CASE Expressions
- F. workshop #4
- G. SQL for PERFORMANCE
- H. The DB2 CATALOG
- I. workshop #5

#### **V. COMMITS and BATCH PROGRAMS**

- A. ONLINE PROGRAMMING
- B. Using EXPLAIN
- C. workshop #6
- D. REVIEW of the latest enhancements in DB2