

DB2 Application Programming

Length	5 days
Audience	Application Developers who need to develop COBOL or Java applications in a DB2 for OS/390 environment, using any version through version 7.
Prerequisites	Experience programming in COBOL or Java, or other high-level programming language; and experience using TSO and ISPF.
Objectives	After successful completion, each student will be able to write the most common types of SQL SELECT, INSERT, UPDATE and DELETE statements, embed them in application programs, use cursors for read and update (including scrollable and sensitive cursors), compile, run and test programs, and develop stored procedures, triggers and user-defined functions.
Hardware, software	One workstation per student, with access to a test DB2 system.
Exercises	Students spend at least half of the class time in hands-on exercises.

DB2 Application Programming

- ◆ Introduction to DB2 and SQL
 - ◆ How DB2 relates to the operating system and other software
 - ◆ DB2 database components: tables, indexes, tablespaces, etc.
 - ◆ SQL syntax rules
 - ◆ Using the editor, getting to know the sample data base
 - ◆ Version 6 and 7 new features
- ◆ SELECT statements
 - ◆ The SELECT and FROM clauses
 - ◆ WHERE predicates, comparison operators, compound predicates
 - ◆ The ORDER BY clause
- ◆ SQL Functions and Expressions
 - ◆ Arithmetic expressions
 - ◆ Functions for handling nulls, strings, dates, etc.
 - ◆ Nested table expressions
 - ◆ Case structures
 - ◆ Expressions in ORDER BY
- ◆ SQL Updating
 - ◆ The UPDATE, INSERT and DELETE statements
 - ◆ Referential Integrity considerations
- ◆ SQL Joins
 - ◆ Inner joins, using the WHERE clause or the ON clause; using correlation names
 - ◆ Right, left, and full outer joins
 - ◆ Self-joins
- ◆ DB2 Application Programs
 - ◆ Single-row SELECTs in COBOL or Java (JDBC or SQLJ)
 - ◆ Variables in programs
 - ◆ Handling errors
 - ◆ Program preparation; binding plans and/or packages
 - ◆ Multiple-row SELECTs in COBOL or Java with cursors or ResultSets, including scrollable cursors
 - ◆ INSERT, UPDATE, DELETE
 - ◆ Updating via cursors, including sensitive cursors
 - ◆ Units of work: COMMIT and ROLLBACK
- ◆ Additional Programming Topics
 - ◆ Stored Procedures, Triggers and User-Defined Functions
 - ◆ Using Dynamic SQL in programs
 - ◆ SQL on remote systems
 - ◆ Locking and Isolation
 - ◆ SQL performance issues; access paths, the Optimizer, and using EXPLAIN
- ◆ DB2 Table Design and Creation
 - ◆ Designing and creating tables, columns, check constraints
 - ◆ Using views
 - ◆ Creating indexes, Referential Integrity
 - ◆ Overview of commands and utilities