Advanced DB2 for Programmers

Course Summary

Description

This course is designed to provide instruction to application programmers in advanced DB2 programming techniques. Performance improving techniques will be stressed.

Objectives

At the completion of this course, the student will be able to:

- Understand the concepts of storage, data definition language and translations most frequently used by programmers
- Understand the effects of Referential Integrity
- Utilize the DB2 catalogs for troubleshooting and researching problems
- Comprehend the effects of TABLESPACE, PAGE and index locking strategies as well as concurrency
- Utilize the DB2 EXPLAIN feature to anticipate potential query performance problems
- Understand DB2 database utilities used by programmers and DBA's
- Implement improved SQL programming techniques
- Definition and usage of the EXPLAIN feature

Topics

- DB2 Storage Concept Review
- Data Definition Language Review
- Referential Integrity Review
- DB2 Catalogs for Programmers
- Application Programming Locking Considerations
- Utilities for Programmers
- Application Coding Considerations

Audience

This course is designed for programmers and analysts who need a better understanding of DB2 structure, capabilities and performance considerations.

Prerequisites

Students should have completed a qualified DB2 Application Programming course or experience with DB2 programming.

Duration

Three days

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Course Summary

I. DB2 Storage Concepts
- A. What are DB2's Features?
- B. DB2 TMP Interfaces
- C. Operational Environment
- D. DB2 Terminology
- E. Physical Hierarchy of DB2 Objects
- F. Naming Conventions
- G. Object Naming Conventions
- H. Databases
- I. DB2 and VSAM
- J. Storage Groups
- K. Page Management
- L. Tablespace
- M. Simple Tablespace
- N. Segmented Tablespaces
- O. Partitioned Tables
- P. Base Tables
- Q. View Table
- R. Synonym
- S. Indexes
- T. DB2 Alphanumeric Data Types
- U. DB2 Numeric Data Types
- V. Date and Time Data Types
- W. Display Formats
- X. Null Characteristic
- Y. DB2 Catalogs

II. Data Definition Language
- A. Structured Query Language (SQL)
- B. DDL - Create STORAGE GROUP Statement
- C. DDL - Managing Your Own VSAM
- D. DDL - Create DATABASE Statement
- E. DDL - Create TABLESPACE Statement
- F. Implicit Creation
- G. VSAM Managed by DB2
- H. VSAM Managed by User
- I. PARTITIONED Tablespaces
- J. Why PARTITIONED Tablespaces?
- K. SEGMENTED Tablespaces
- L. DDL - Alter TABLESPACE Statement
- M. DDL - CREATE TABLE Statement
- N. DDL - Alter TABLE Statement
- O. DDL - NOT NULL With DEFAULT
- P. DDL - TABLESPACE Fragmentation
- Q. DDL - Synonyms
- R. DDL - Deleting DB2 Objects
- S. DDL - Index
- T. DDL - UNIQUE Versus NON-UNIQUE
- U. DDL - CLUSTER Versus NON-CLUSTER
- V. DDL - CLUSTER INDEX
- W. DDL - Index Create
- X. DDL - PARTITIONED INDEX
- Y. DDL - Index Space
- Z. DDL - Index Subpages
- AA. DDL - Views

III. Referential Integrity
- A. Referential Integrity
- B. DELETE Rules
- C. INSERT and UPDATE Implications
- D. Referential Integrity Summary
- E. DDL - Referential Integrity

IV. DB2 Catalogs for Programmers
- A. SYSIBM.SYSTABLES
- B. SYSIBM.SYSFOREIGNKEYS
- C. SYSIBM.SYSINDEXES
- D. SYSIBM.SYSKEYS
- E. SYSIBM.SYSPLAN
- F. SYSIBM.SYSPLANDEP
- G. SYSIBM.SYSRELS
- H. SYSIBM.SYSSTMT
- I. SYSIBM.SYSSYNONYMS
- J. SYSIBM.SYSTABLESPACE
- K. SYSIBM.SYSVIEWS
- L. SYSIBM.SYSVIEWDEP

V. Application Program Locking Considerations
- A. BIND Review - Overall Procedure
- B. BIND Review - Precompile
- C. BIND Review - Conversion
- D. BIND Review - BIND Procedure
- E. BIND Review - BIND Panel
- F. BIND Review - REBIND and FREE
- G. BIND Review - VALIDATE Option
- H. Program Isolation
- I. LOCK TABLE
- J. LOCK Duration
- K. LOCK Summary

VI. Utilities for Programmers
- A. Utility Execution
- B. LOAD Utility
- C. CHECK DATA
- D. DSNTIAUL
- E. COPY
- F. DB2 Logging
- G. QUIESCE
- H. REPORT
- I. RECOVER
- J. RUNSTATS
- K. REORG
- L. DSN1COPY

VII. Application Coding Considerations
- A. Appl. Tuning and Review - PERFORMANCE
- B. Appl. Tuning and Review - EXPLAIN

VIII. Security Review / Data Control Language
- A. Structured Query Language (SQL)

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