

DB2 Data Base Design & Administration

Length	5 days
Audience	Data Base Administrators and Application Developers working in a DB2 for OS/390 environment, in any DB2 version through version 7.
Prerequisites	Experience in file or database design or administration in some other system such as VSAM or IMS is highly recommended; programming experience with DB2 is not required, but is very helpful; experience in other relational client-server DBMSs such as SQL Server, Sybase or Oracle is also very helpful.
Objectives	After successful completion, each student will be able to create all types of DB2 tablespaces, create tables with constraints and defaults, and create the appropriate indexes; modify the database objects according to changing hardware, workloads, etc; load, backup, recover and administer DB2 data on an ongoing basis; be familiar with the major performance considerations when administering a DB2 database.
Hardware, software	One workstation per student, with access to a test DB2 system.
Exercises	Students spend the majority of class time in hands-on exercises.

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- Introduction to DB2
 - The DB2 family of DBMSs
 - How DB2 relates to the operating system and other subsystems
 - DB2 database components: tables, indexes, tablespaces, etc.
 - Overview of SQL, getting acquainted with DB2I and SPUFI
- DB2 System Tables and Resources
 - DB2 Catalog and System Tables
 - DB2 Logs and BSDSs
 - Locking, Commit and Rollback
 - Overview of DB2 Install Options
 - Overview of DB2 Security
- Tablespaces and Related Objects
 - Storage Groups, Buffer Pools and Databases
 - Implicit and explicit tablespaces
 - Ordinary, Segmented, and Partitioned tablespaces; special considerations for partitioning; creating VSAM files
 - Locking and other performance-related tablespace options
 - Altering and dropping tablespaces
- Designing and creating tables
 - Intentional de-normalization
 - Creating a table, choosing proper column types
 - Defaults and check constraints
 - Altering and dropping tables
 - Designing, creating and managing indexes
 - Designing, creating and managing Referential Integrity
- DB2 Views, Aliases and Synonyms
 - Using views
 - Creating aliases and synonyms
- DB2 Command Utility Overview
 - Common commands, e.g. Display, Start and Stop Database
 - Overview of utilities; SQL in utility control statements
- Loading tables
 - JCL and control statements
 - Parameters of the LOAD stmt
 - Restarting a load
 - Complex variations of LOAD
- Backup and recovery
 - Backup and recovery strategy
 - The COPY utility; UNLOAD, QUIESCE and related utilities
 - The RECOVER TABLESPACE, RECOVER INDEX, and REBUILD INDEX utilities
 - Point-in-time recovery and other recovery scenarios
- DB2 Ongoing Administration
 - the CHECK DATA and CHECK INDEX utilities
 - The REORG TABLESPACE and REORG INDEX utilities
 - The RUNSTATS utility and REBIND command
 - Performance monitoring and tuning: locking; using catalog statistics; using EXPLAIN on SQL queries; using the Governor