

- COURSE CODE:** DWUSQE
- COURSE TITLE:** DB2 SQL Essentials
- AUDIENCE:** Application Developers, Application Programmers, Production DBAs, Database Administrators and Capacity Planners.
- PREREQUISITES:** Completion of our course 'DB2 UDB Fundamentals' (DWUFUN) or equivalent knowledge.
- DURATION:** 2 days
- SUMMARY:** This course focuses on the scope and limits of SQL operations such as:
- DB2 SQL interface options (e.g., Command Line Processor, Command Editor)
 - Overview of Data Definition Language (DDL): Create/Alter/Drop DB2 objects
 - Data Manipulation Language (DML)
 - Predicates
 - NULL considerations
 - INNER JOINS
 - OUTER JOINS
 - UNIONS
 - CASE expressions
 - GROUP BY & HAVING
 - CAST operations
 - Subqueries (correlated & non-correlated)
 - Subselects
 - Column/scalar functions
- OBJECTIVES:** Upon completion of this lab-oriented course, the delegate should be competent to code SQL SELECT, INSERT, UPDATE and DELETE statements to manipulate relational data stored in one-or-more tables.

1. INTRODUCTION TO SQL (DML)

- Syntax conventions
- SQL components
- SQL predicates
- SQL limits

2. DB2 SQL INTERFACE OPTIONS

- Command Line Processor
- Command Editor

3. SELECTING DATA FROM COLUMNS

- All columns
- Some columns
- Derived columns
- Data not in table
- Dates
- Using DISTINCT
- Naming result columns
- Common Table Expressions (CTE)
- FETCH FIRST
- Performance considerations
- Workshop

4. SELECTING USING PREDICATES

- WHERE and comparison operators
- NULLs
- BETWEEN
- IN
- Operators (<, >, >=, <>, etc.)
- Using NOT
- Precedence rules
- Performance considerations
- Workshop

5. SELECTING USING COLUMN FUNCTIONS

- COUNT
- AVG
- MAX
- MIN
- SUM
- Performance considerations
- Workshop

6. SELECTING USING SCALAR FUNCTIONS

- CHAR
- COALESCE
- CONCAT
- DATE
- INTEGER
- NULLIF
- SUBSTR
- ROUND
- Workshop

7. ORDER BY

- ASC
- DESC
- Multiple columns
- Expressions
- Columns not in SELECT list
- Performance considerations
- Workshop

8. GROUP BY

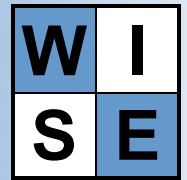
- Single column
- Multiple columns
- HAVING considerations
- With ORDER BY
- Performance considerations
- Workshop

9. JOINS

- INNER
- OUTER (LEFT, RIGHT & FULL)
- ON vs. WHERE
- COALESCE and NULLs
- Nested table expressions
- Cartesian product
- Performance considerations
- Workshop

10. MERGING LIST OF VALUES (e.g., UNION)

- Eliminating duplicates
- Keeping duplicates
- Performance considerations
- Workshop



11. CASE EXPRESSIONS

- More meaningful value substitution
- NULL considerations
- As alternative to UNION
- Performance considerations
- Workshop

12. SUBQUERIES

- Non-correlated
- Correlated
- Alternative to joins
- Performance considerations
- Workshop

13. MODIFYING DATA

- Logical Units of Work (LUW)
- Units of recovery concepts
- Introduction to locking and concurrency
- Introduction to COMMIT/ROLLBACK
- INSERTs
- UPDATEs
- DELETEs
- Isolation levels and performance
- Workshop