Advanced SQL

2 day training course







Course contents

This course will cover the following topics. Those marked with (*) will be covered if time allows.

Stored procedures

- Creating stored procedures
- Executing stored procedures
- System stored procedures

Variables

- Declaring variables
- SET versus SELECT
- Tricks with variables
- So-called global variables

Parameters and return values

- Passing parameters
- Default values / WHERE clauses
- Output parameters
- Using RETURN

Scalar functions

- What they are
- Writing user-defined functions
- Worked examples
- Pros and cons of scalar functions

Testing conditions

- IF / ELSE statement
- Using CASE where possible

Looping

- Syntax of WHILE
- Breaking out of a loop

Error-handling

- Using TRY / CATCH
- System error functions
- Custom error messages

Deleting using SQL

- Ways to drop tables
- DELETE versus TRUNCATE

Updating data in SQL

- The UPDATE statement
- Updating using joins

Inserting data

- Making tables (SELECT INTO)
- Appending data (INSERT INTO)
- Inserting individual rows

Creating tables

- Creating tables in SQL
- Primary keys and indexes
- Adding relationships

Transactions

- Beginning a transaction
- Committing / rolling back

Temporary tables and table variables

- Scope (local versus global)
- Using temporary tables
- Creating table variables
- Pros and cons of each approach

Table-valued functions (*)

- In-line table-valued functions
- Mult-statement table-valued functions

Derived tables and CTEs

- Using derived tables
- Common Table Expressions (CTEs)
- Multiple CTEs in a single query

Debugging (*)

- Debugging queries and procedures
- Setting breakpoints

Dynamic SQL (*)

- Building up dynamic SQL
- Executing dynamic SQL
- Disadvantages of dynamic SQL

Pivots (*)

- Assembling data for pivoting
- Using PIVOT
- Dynamic column headers

Triggers (*)

- Insert, update and delete triggers
- Using generated tables (eg INSERTED)
- Using INSTEAD OF