



## Technical Courses

### SQL Advanced

Format: Two days:  
Max Capacity 6

Further development of SQL knowledge moving on from our intermediate course.

#### Course Content

##### Stored Procedure Basics

- Pros and cons of stored procedures
- Creating stored procedures
- Three ways to execute
- System stored procedures

##### Variables

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

##### Parameters and Return Values

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

##### Avoiding Scalar Functions

- What are scalar functions?
- Some examples
- Disadvantages of scalar functions
- Three alternatives

##### Testing Conditions

- IF / ELSE statement

- Using CASE where possible

##### Looping

- Syntax of WHILE
- Breaking out of a loop
- Basic transactions
- Beginning a transaction
- Committing / rolling back
- Deleting and updating
- Using DELETE and UPDATE
- Sys.Objects
- Dropping objects

##### Creating Tables

- Creating tables in SQL
- Inserting data
- Inserting single rows
- Inserting multiple rows

##### Temporary Tables and Table Variables

- Using temporary tables
- Creating table variables
- Pros and cons of each approach

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### Course Content (continued)

#### Table Valued Functions

- In-line table-valued functions
- Multi-statement table-valued functions
- Limitations of user-defined functions

#### Derived Tables and CTEs

- Using derived tables
- Common Table Expressions (CTEs)
- Recursive CTEs

#### Subqueries

- The concept of a subquery
- Using ALL, ANY and IN
- Correlated subqueries
- Using EXISTS

#### Cursors

- Syntax of fetching rows
- When to use (and when not to)

#### Error-Handling

- Using TRY / CATCH
- System error functions
- Custom error messages
- The @@error function

#### Debugging

- The SQL Server debugger
- Debugging (breakpoints, etc.)