Fast track SQL

3 day training course







Course contents

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

From our Introduction to SQL course

Using SQL Server

- SQL Server Management Studio
- Controlling windows
- Using Object Explorer

Creating databases - overview

- Designing databases
- Primary keys

Working with tables

- Creating tables
- Allowing nulls or not
- Identity fields
- Creating relationships

Simple Queries

- Creating queries
- Comments
- Indentation and case

Setting criteria using WHERE

- Wildcards (% and _)
- Setting criteria for dates
- Coping with nulls

Calculations

- Calculated columns
- Using aliases
- String functions and concatenation

Calculations using dates

- GetDate
- Converting dates
- Useful date functions

Basic joins

- Inner joins
- Table aliases
- Left and right outer joins

Aggregation and grouping

- SUM, AVG, MIN, MAX
- Various ways to count
- Grouping by fields
- Using HAVING to filter results

Views

- The view designer
- Limitations of the designer
- Scripting views

Subqueries

- The concept of a subquery
- Syntax of subqueries
- Using subqueries in a query

Derived tables and CTEs

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

Wise Owl Training

From our Advanced SQL course

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

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