SQL | MASTER ACADEMY
RAISE AN EXPERT

COURSE: SQL Server Development Fundamentals

This five-day instructor-led course provides students with the knowledge and skills to develop a Microsoft SQL Server database. It includes the T-SQL language constructs, programming modules and data layer objects creating. This is the main class for DBAs and DB Developers, who want to have a good foundation of their T-SQL skills.

Summary

Duration:	*5 days/ 40 hours*
Level:	*200**
Delivery method:	*In class*
Language:	*English/Bulgarian*

** The difficulty level is consistent with the widely accepted scale of technical difficulty of training on Microsoft Corp*

AUDIENCE:

The primary audience for this course is IT Professionals who want to become skilled on SQL Server product features and technologies for implementing a database. Those are primarily Database Developers in the beginning of their career path and DBAs who want to be familiar with data layer and data access layer of databases they administer. The secondary audiences for this course are individuals who use other database product platforms and look for gaining knowledge in SQL Server database development.

AFTER THE TRAINING ATTENDEES WILL BE ABLE TO:

- Develop code in SQL Server database – data layer objects and programming objects
- Use best practices when writing code, and avoid writing code that leads to performance problems
- Understand and use data types, understand indexes, their structure and use cases
- Understand the different types of JOIN, sub-queries, CTE, derived tables, Windowing functions and when and how to use them
- Understand the principles of Execution Plans, reading and troubleshooting simple plans
- Develop error handling for programming objects in a database
- Understand Transactions and SQL Server Locking architecture

TOPICS:

Module 1. SQL Server and T-SQL Overview (SQL Server Architecture, Life Cycle of a query, Common Tools)
Module 2. The SELECT module (Writing good Predicates, Group by and aggregation best practices, Using Functions)
Module 3. Joins, Subqueries and derived tables (JOINs optimizations, Using Views, Using Derived Tables in FROM Clause, Correlated subqueries, Using Cross Apply)
Module 4. Data Types, Tables and Constraints (SQL Server Data Types, Conversion rules and Data Type precedence, Creating tables, Identity and Sequence objects, Defining and using constraints)
Module 5. SQL Server Indexing (Indexing Overview, CSI, Index usage and indexing best practices)
Module 6. Query Execution and Reading Query Plans (Query execution, Query plan introduction Query plan operators, Some best practices of query plan analysis and optimization)
Module 7. Data Modifications and Data Loading (DML statements, Partitioning)
Module 8. Dynamic SQL, language constructs and temp objects (Using Variables, Dynamic SQL Temp Tables, Table Variables, TVP)
Module 9. T-SQL Programming Objects - Stored Procedures, Triggers, Functions (Stored procedures**,** Triggers**,** Temporals**,** User Defined Functions)
Module 10. Transactions Management and Error Handling (Transactions in SQL Server**,** Locking and lock management**,** Errors and error handling)