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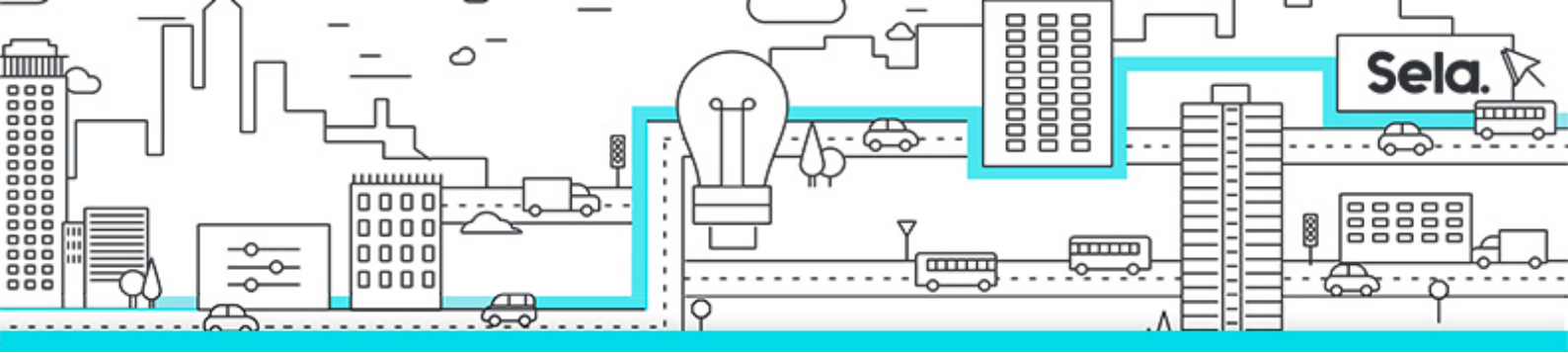
20761C

Querying Data with Transact-SQL

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Querying Data with Transact-SQL

20761C - Version: 1

5 days course

Description:

This course is designed to introduce students to Transact-SQL.

Intended Audience:

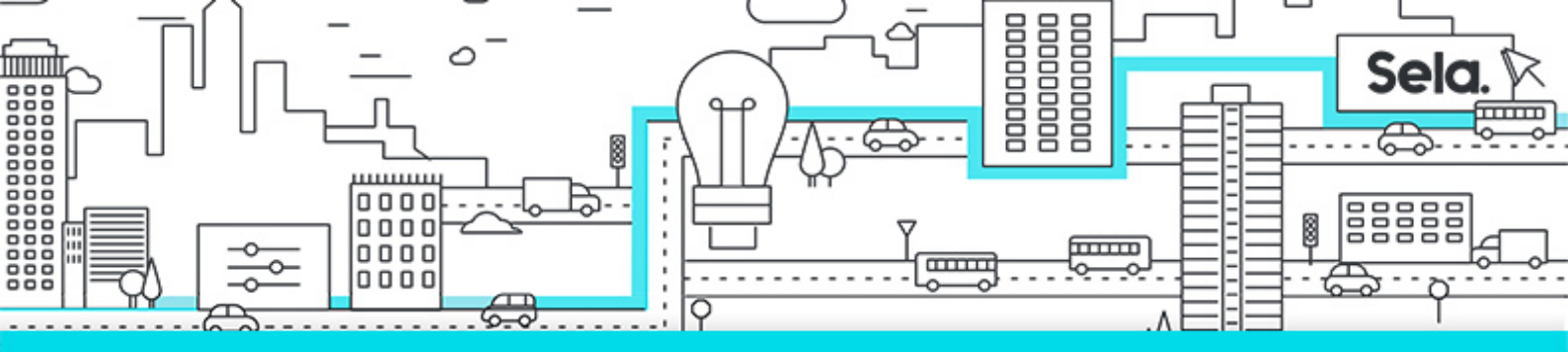
The main purpose of the course is to give students a good understanding of the Transact-SQL language which is used by all SQL Server-related disciplines; namely, Database Administration, Database Development and Business Intelligence. As such, the primary target audience for this course is: Database Administrators, Database Developers and BI professionals.

Prerequisites:

- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Working knowledge of relational databases.

Objectives:

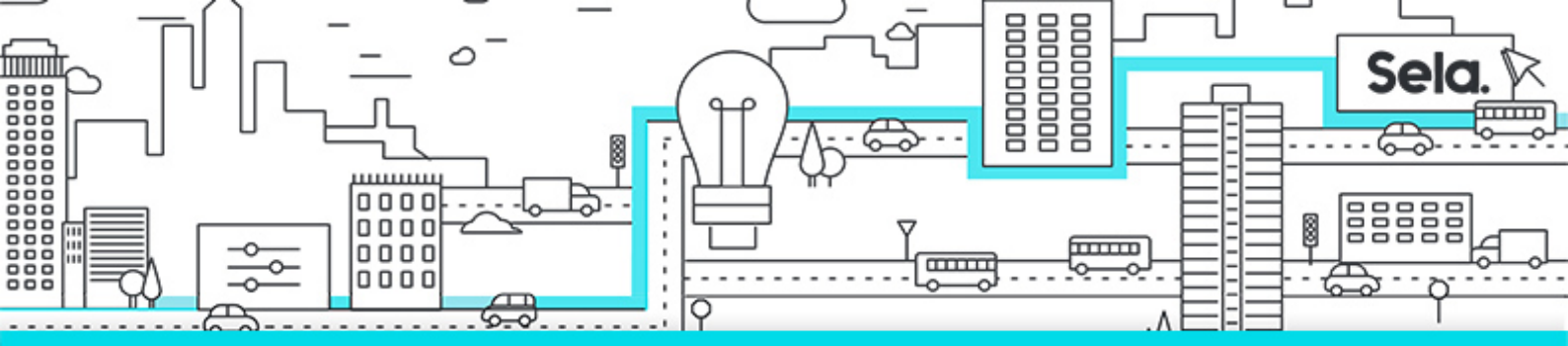
- Describe key capabilities and components of SQL Server.
- Describe T-SQL, sets, and predicate logic.
- Write a single table SELECT statement.
- Write a multi-table SELECT statement.
- Write SELECT statements with filtering and sorting.
- Describe how SQL Server uses data types.
- Write DML statements.
- Write queries that use built-in functions.
- Write queries that aggregate data.



- Write subqueries.
- Create and implement views and table-valued functions.
- Use set operators to combine query results.
- Write queries that use window ranking, offset, and aggregate functions.
- Transform data by implementing pivot, unpivot, rollup and cube.
- Create and implement stored procedures.
- Add programming constructs such as variables, conditions, and loops to T-SQL code.

Topics:

- **Module 1: Introduction to Microsoft SQL Server**
 - The Basic Architecture of SQL Server
 - SQL Server Editions and Versions
 - Getting Started with SQL Server Management Studio
 - Lab : Working with SQL Server Tools
- **Module 2: Introduction to T-SQL Querying**
 - Introducing T-SQL
 - Understanding Sets
 - Understanding Predicate Logic
 - Understanding the Logical Order of Operations in SELECT statements
 - Lab : Introduction to T-SQL Querying
- **Module 3: Writing SELECT Queries**
 - Writing Simple SELECT Statements
 - Eliminating Duplicates with DISTINCT
 - Using Column and Table Aliases
 - Writing Simple CASE Expressions
 - Lab : Writing Basic SELECT Statements



- **Module 4: Querying Multiple Tables**

- Understanding Joins
- Querying with Inner Joins
- Querying with Outer Joins
- Querying with Cross Joins and Self Joins
- Lab : Querying Multiple Tables

- **Module 5: Sorting and Filtering Data**

- Sorting Data
- Filtering Data with Predicates
- Filtering Data with TOP and OFFSET-FETCH
- Working with Unknown Values
- Lab : Sorting and Filtering Data

- **Module 6: Working with SQL Server Data Types**

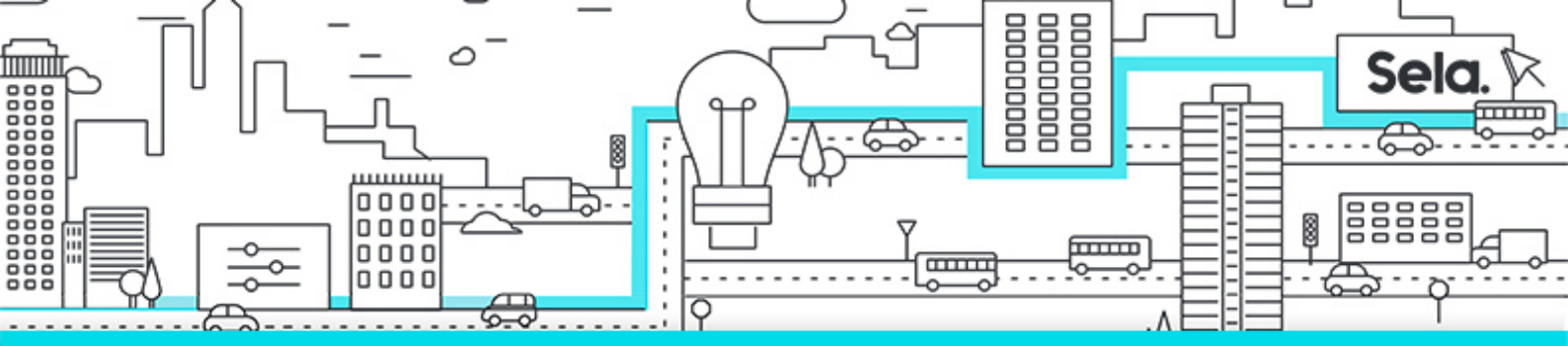
- Introducing SQL Server Data Types
- Working with Character Data
- Working with Date and Time Data
- Lab : Working with SQL Server Data Types

- **Module 7: Using DML to Modify Data**

- Adding Data to Tables
- Modifying and Removing Data
- Generating automatic column values
- Lab : Using DML to Modify Data

- **Module 8: Using Built-In Functions**

- Writing Queries with Built-In Functions
- Using Conversion Functions
- Using Logical Functions
- Using Functions to Work with NULL



- Lab : Using Built-In Functions

- **Module 9: Grouping and Aggregating Data**

- Using Aggregate Functions
- Using the GROUP BY Clause
- Filtering Groups with HAVING
- Lab : Grouping and Aggregating Data

- **Module 10: Using Subqueries**

- Writing Self-Contained Subqueries
- Writing Correlated Subqueries
- Using the EXISTS Predicate with Subqueries
- Lab : Using Subqueries

- **Module 11: Using Table Expressions**

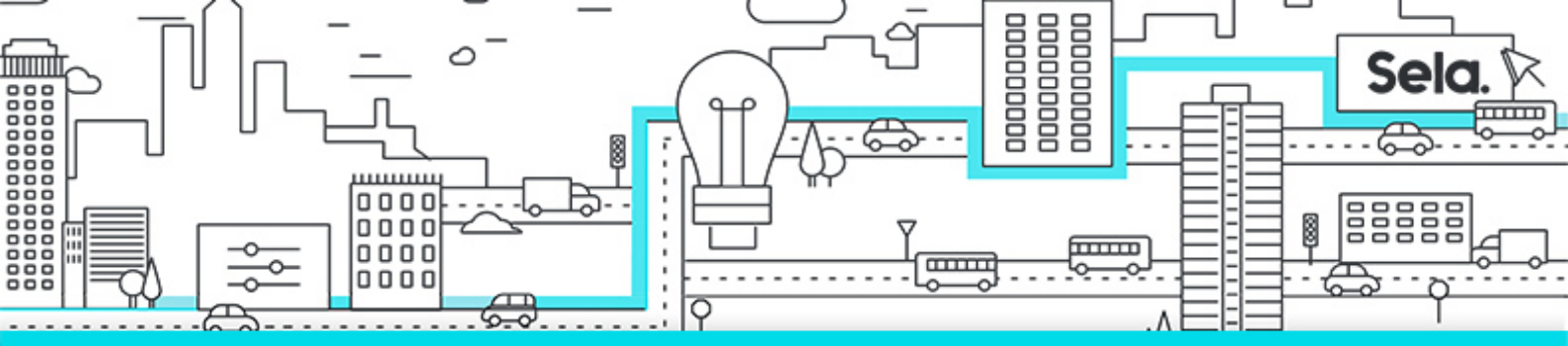
- Using Views
- Using Inline Table-Valued Functions
- Using Derived Tables
- Using Common Table Expressions
- Lab : Using Table Expressions

- **Module 12: Using Set Operators**

- Writing Queries with the UNION operator
- Using EXCEPT and INTERSECT
- Using APPLY
- Lab : Using Set Operators

- **Module 13: Using Windows Ranking, Offset, and Aggregate Functions**

- Creating Windows with OVER
- Exploring Window Functions
- Lab : Using Windows Ranking, Offset, and Aggregate Functions



- **Module 14: Pivoting and Grouping Sets**
 - Writing Queries with PIVOT and UNPIVOT
 - Working with Grouping Sets
 - Lab : Pivoting and Grouping Sets

- **Module 15: Executing Stored Procedures**
 - Querying Data with Stored Procedures
 - Passing Parameters to Stored procedures
 - Creating Simple Stored Procedures
 - Working with Dynamic SQL
 - Lab : Executing Stored Procedures

- **Module 16: Programming with T-SQL**
 - T-SQL Programming Elements
 - Controlling Program Flow
 - Lab : Programming with T-SQL

- **Module 17: Implementing Error Handling**
 - Implementing T-SQL error handling
 - Implementing structured exception handling
 - Lab : Implementing Error Handling

- **Module 18: Implementing Transactions**
 - Transactions and the database engines
 - Controlling transactions
 - Lab : Implementing Transactions