



Querying Data with Transact-SQL



Practice Labs™

Querying Data with Transact-SQL



Lab Outline

The 70-761 Practice Lab will provide you with the necessary platform to gain hands on skills Microsoft SQL Server 2016.

By completing the lab tasks you will improve your practical skills in managing data with Transact-SQL, querying data with advanced Transact-SQL components and programming databases using Transact-SQL.

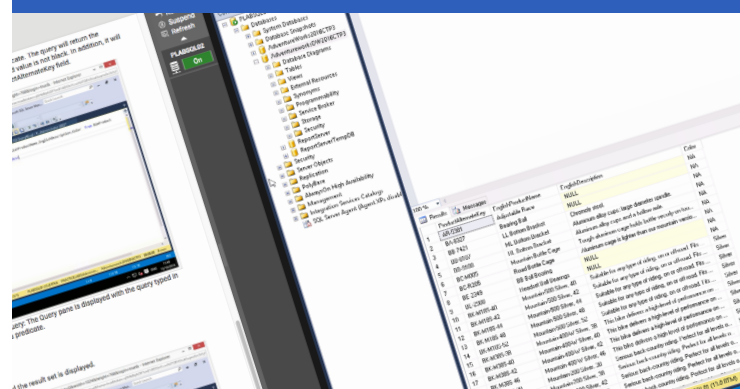
These same tasks will help you understand the objectives and competencies required by the Microsoft 70-761 Querying Data with Transact-SQL exam.

 **Course Code**
70-761

 **Skill Level**
Intermediate

 **Released**
Mar 2017

 **Duration**
16 hours



Outcomes

After completing this Practice Lab, students will be able to:

- Create and execute SELECT statements
- Sort query results
- Modify data using OUTPUT, INSERT and DELETE statements
- Use joins to query multiple tables
- Write and execute queries that aggregate data
- Use SET and APPLY operators
- Work with subqueries and table expressions
- Create and modify views
- Write and execute queries to group and pivot data
- Work with non-relational data
- Create and implement stored procedures
- Use built-in functions such as
- Working with Data Types and Null Value

Prerequisites

No prior hands-on experience is required to use or complete this Practice Lab. However, it would be beneficial to be familiar with the following concepts:

- Microsoft Windows operating systems
- Relational database knowledge

Who is it For?

The 70-761 certificate is aimed at database administrators, database developers, BI professionals and IT professionals looking to improve their hands-on skills in Transact-SQL.

Additional Info

This Practice Lab focuses on the practical aspects of the 70-761 exam objectives. It is therefore advised to refer to your own course materials to gain a deeper understanding of any theoretical aspects of the exam objectives.

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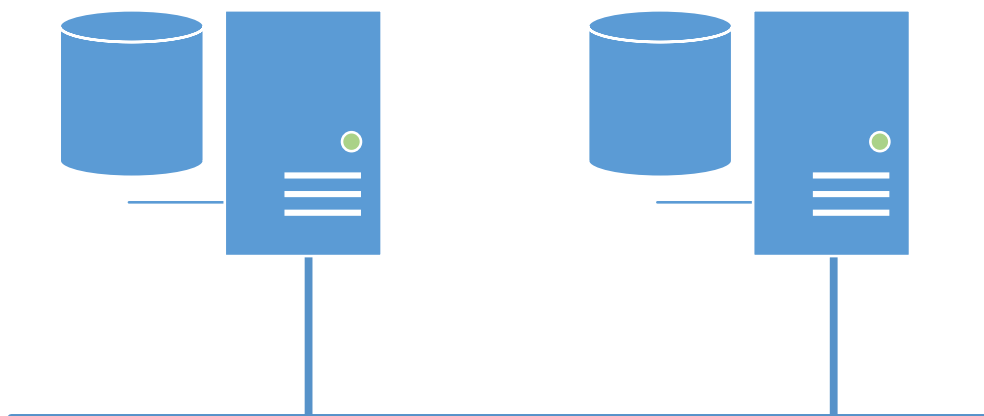


Lab Topologies

You will also have access to the following topologies:

PLABSQL01
(SQL Server 1)
192.168.0.1 /24

PLABSQL02
(SQL Server 2)
192.168.0.2 /24



Querying Data with Transact-SQL



Modules and Exercises

Working with SELECT Queries

Introduction

Exercise 1 - Filter Data Based on Predicates

Exercise 2 - Fetch Unique Rows Using DISTINCT Clause

Exercise 3 - Fetch Rows from Multiple Tables Using Aliases

Exercise 4 - Use of TOP and OFFSET-FETCH Filters in SELECT Queries

Exercise 5 - Sort Query Results Using ORDER BY Clause

Exercise 6 - Use Simple CASE Expression with SELECT Statement

Summary

Working with SET Operators

Introduction

Exercise 1 - Use EXCEPT and INTERSECT Operators to Combine Query Results

Exercise 2 - Use UNION Operator to Combine Results of Two SELECT Statements

Exercise 3 - Use ALL and Parentheses to Combine Results of Multiple SELECT Statements

Summary

Using Joins

Introduction

Exercise 1 - Using INNER JOIN

Exercise 2 - Working with LEFT OUTER JOIN

Exercise 3 - Using RIGHT OUTER JOIN

Exercise 4 - Working with FULL OUTER JOIN

Exercise 5 - Using SELF JOIN

Exercise 6 - Working with CROSS JOIN

Exercise 7 - Demonstrating the Method to Use More Than One JOIN with AND Operator

Exercise 8 - Demonstrating the Method to Compare Fields to NULL Values Using JOIN

Summary

Implementing Functions

Introduction

Exercise 1 - Working with Scalar Functions

Exercise 2 - Using Table-Valued Functions in Transact-SQL

Exercise 3 - Demonstrating the Impact of Using Functions with WHERE clause on Query Performance

Summary

Working with Aggregate Data

Introduction

Exercise 1 - Using Aggregate Functions in SELECT Statement

Exercise 2 - Working with Mathematical and DateTime Functions

Exercise 3 - Working with System Functions

Summary

Working with Built-in Functions

Introduction

Exercise 1 - Using Built-in Conversion Functions

Exercise 2 - Working with Built-in Logical Functions

Exercise 3 - Using Functions that Work with NULL

Summary

Modifying Data

Introduction

Exercise 1 - Inserting New Records in the Table

Exercise 2 - Updating and Deleting Data from the Table

Exercise 3 - Using OUTPUT Clause with INSERT and DELETE Statements

Summary

Working with Subqueries

Introduction

Exercise 1 - Using Subqueries

Exercise 2 - Working with Correlated Subqueries

Exercise 3 - Working with Self-Contained Subqueries

Exercise 4 - Managing Nested Subqueries

Summary

Working with Apply Operators

Introduction

Exercise 1 - Using CROSS APPLY and OUTER APPLY Operators

Summary

Working with Table Expressions

Introduction

Exercise 1 - Working with Common Table Expression (CTE)

Exercise 2 - Using CTE with AVG Function

Exercise 3 - Working with Recursive CTE

Summary

Querying Data with Transact-SQL



Grouping and Pivoting Data

Introduction

Exercise 1 - Working with GROUP BY Clause

Exercise 2 - Using HAVING Clause with GROUP BY

Exercise 3 - Demonstrating the Use of Ranking Functions

Exercise 4 - Using PIVOT and UNPIVOT Operators

Summary

Working with Temporal Table

Introduction

Exercise 1 - Working with System-Versioned Temporal Tables

Exercise 2 - Querying Data in System-Versioned Temporal
Tables

Summary

Working with Non-relational Data

Introduction

Exercise 1 - Working with JSON Functions and Clauses

Exercise 2 - Working with FOR XML Queries

Summary

Working with Stored Procedures and Views

Introduction

Exercise 1 - Working with Stored Procedures

Exercise 2 - Working with Views

Summary

Implementing Error Handling

Introduction

Exercise 1 - Working with Error Handling Blocks

Exercise 2 - Working with THROW Statement

Exercise 3 - Working with RAISERROR Statement

Exercise 4 - Using TRY...CATCH Block in SQL Stored
Procedure

Summary

Working with Data Types and Null Values

Introduction

Exercise 1 - Comparing Two Values with Different Data Types

Exercise 2 - Working with COUNT Function on Columns with
NULL Values

Exercise 3 - Working with AVG Function on Columns with
NULL Values

Summary