

## FS-2030A SQL Server Querying Data (Duration 3Days)



### What will you learn?

The focus of this 3day instructor-led course is on writing transact-SQL query to retrieve data from database. This course helps you prepare for the **Exam 70-761 & 70-461**.

### Who is the Audience?

The primary audience for this course is Business Analysts who need to fulfil Data Analyst or Data Scientist roles to retrieve data from SQL Server database.

Primary responsibilities will include:

- Providing sufficient data for reports, dashboard and/or applications.
- Provide information by mashing up data tables.

### What are the Prerequisites?

Before attending this course, students must have:

- Basic knowledge about relational databases

### What are the Course Objectives?

After completing this course, students will be able to:

- Write Transact-SQL queries to retrieve data from database tables/views.
- Perform data analytics via built-in functions such as CUBE, ROLLUP and GROUPING SET
- Join data tables to retrieve relevant data from multiple tables.
- Extract data from XML, JSON, CSV and EXCEL data files and transform them into tabular structure.
- Define and use Cursor to iterate the data records on specific data table.

### What are the Course Outlines?

#### Module 1: Basics of T-SQL Querying

This module introduces the basic understanding of Transact-SQL language.

#### Lessons:

- Introducing T-SQL.
- Understanding Sets.
- Understanding Predicate Logic.
- Understanding the Logical Order of Operations in SELECT Statements.

#### Labs:

- Retrieve Customer and Sales Data.

## Module 2: Basics of SELECT Query

This module describes how to write a SELECT query to retrieve data rows, along with record deduplication.

### **Lessons:**

- Writing Simple SELECT Statements.
- Eliminating Duplicate Rows
- Column and Table Aliases
- Simple CASE Expression.
- Query Table with Common Table Expression - CTE

### **Labs:**

- Retrieve Customer Data with Income Bracket.

## Module 3: Joining Data Tables

This module describes join types and join mechanism in T-SQL.

### **Lessons:**

- Understanding Joins in SQL Server.
- Performing Inner Joins.
- Performing Outer Joins.
- Performing Cross Joins.
- Performing Self-Joins
- Performing Cross Apply

### **Labs:**

- Retrieve Customer and Relevant Sales Data.
- Retrieve Product and Product Subcategory Data.
- Retrieve Sales data which does not transacted by SalesPerson.

## Module 4: Sorting and Filtering

This module describes data sorting and filtering clause in T-SQL queries.

### **Lessons:**

- Sorting Data Table.
- Filtering data with Where Clause.
- Filtering data with TOP and OFFSET-FETCH operators.
- Working with NULL values.

### **Labs:**

- Retrieve Top 10 Selling Products.
- Retrieve Product data which is fall under 'Bike' Product category.
- Retrieve Sales data with Order by OrderDate.

## Module 5: Using Built-In Functions

This module describes built-in functions in T-SQL queries.

### **Lessons:**

- Using Built-in Functions.
- Using Conversion Functions.
- Using Logical Functions.
- Using Functions to work with NULL.
- Using String Functions.
- Using Numeric Functions.

### **Labs:**

- Using Built-in Functions

## Module 6: Grouping and Aggregating Data

This module describes how to group and aggregate data in T-SQL queries, in order to come out with KPIs and some measures.

### **Lessons:**

- Using Aggregate Functions.
- Using Window Functions.
- Using the GROUP BY Clause.
- Filtering GROUPS with HAVING Clause.
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### **Labs:**

- Retrieve Count of Transactions per Customer.
- Retrieve Sum of Transactions Amount per Product.
- Retrieve Count of Transactions per Product.

## Module 7: Using Subqueries and Set Operators

This module describes how to retrieve data by using subqueries, either self-contained or correlated type.

### **Lessons:**

- Using Subqueries.
- Self-Contained Subqueries.
- Correlated Subqueries.
- EXISTS Predicate and Subqueries.
- UNION, EXCEPT and INTERSECT Operators.
- ANY, SOME and ALL Operators.

### **Labs:**

- Retrieve Customer data who had at least a purchase.
- Retrieve Product data along with associated Category information.
- Retrieve Sales data which does not have associated SalesPersonID.

## Module 8: Using Pivot and Unpivot Operators

This module describes how to retrieve pivot data and unpivot retrieved data.

### Lessons:

- Pivoting Table with Pivot Operator.
- Unpivoting Table with Unpivot Operator.

### Labs:

- Retrieve pivot Sales data, Total Sales by Sales Year.

## Module 9: Data Retrieval via Cursor

This module describes how to create, open and use SQL Server Cursor to retrieve data.

### Lessons:

- Introduction to Cursor.
- Types of Cursor.

### Labs:

- Retrieve Customer data who had at least a purchase.
- Retrieve Product data along with associated Category information.

## Module 10: Retrieve JSON, XML, CSV and EXCEL data

This module describes how to retrieve data by using JSON and XML parser; and read CSV and EXCEL files via OLEDB functions in Transact-SQL.

### Lessons:

- Using XPATH and XQUERY.
- Using JSON\_VALUE and JSON\_QUERY.
- Using OpenRowSet function.

### Labs:

- Retrieve Customer data from XML and JSON datasets.
- Retrieve Product data from CSV file along with associated Category information.
- Retrieve Sales data from EXCEL worksheet.

## About Trainer:



Hamid is SQL Server Data BI Platform Expert with more than 10 years of professional experience, He is holding Microsoft Certified Master: SQL Server 2008, Microsoft Certified Solutions Master: Charter-Data Platform, Microsoft Data Platform MVP Award and CIW Database Design Specialist Certifications. Being a consultant allows him to work directly with customers to help solve questions regarding database issues for SQL Server and PowerBI. He had trained more than 200 students from Banking, Manufacturing, Insurance and Technology industries in well-known training centers in Malaysia.