

FS-5030A Data Mashup with M and TSQL (Duration 2Days)



What will you learn?

The focus of this 2day instructor-led course is on creating customized data retrieval process via M Language in Power Query to the advance level by writing queries via Transact-SQL language. This course helps you prepare for the **Exam 70-778 & 70-779**.

Who is the Audience?

The primary audience for this course is Business Analysts who need to fulfil Data Analyst or Data Scientist roles to create enterprise reporting and dashboarding with Microsoft PowerBI solutions.

Primary responsibilities will include:

- Providing intelligence and interactive reports, dashboards.
- Mashup data to come out with clean, integrate and consistent data.

What are the Prerequisites?

Before attending this course, students must have:

- Basic knowledge about relational databases and data warehouse.
- Basic knowledge of querying data using Transact-SQL.
- Basic experience working with Microsoft Excel.
- Experience working with Microsoft PowerBI Desktop App.

What are the Course Objectives?

After completing this course, students will be able to:

- Retrieve data from database via writing Transact-SQL.
- Understand the Sets theory and Predicate Logic along with Table Joins in Transact-SQL.
- Understand the M language syntax and write M commands in order to customize data retrieval process.
- Use the Operators, Types, Functions and Error Handling in Power Query via M Language.

What are the Course Outlines?

Module 1: Introduction to T-SQL Querying

This module introduces the data retrieval via T-SQL language in SQL Server.

Lessons:

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

Labs:

- Retrieve Sales Data.

Module 2: Writing SELECT Queries

This module describes how to write T-SQL queries in SQL Server along with some basic of functionalities.

Lessons:

- Writing Simple SELECT Statements.
- Eliminating Duplicates with DISTINCT
- Using Column and Table Aliases.
- Writing Simple CASE Expressions.
- Writing Simple Aggregation Functions.

Labs:

- Group Customers Based on Their Income Range.
- Retrieve Number of Unique Customer who Purchased Item in Last 30Days.

Module 3: Querying Multiple Tables

This module describes how to join multiple tables in database and generate required data via T-SQL.

Lessons:

- Understanding Joins.
- Querying with Inner Joins.
- Querying with Outer Joins.
- Querying with Cross Joins and Self Joins.

Labs:

- Retrieve Sales data with Customer information.
- Identify the Customers without any Purchase.
- Identify the Sales without any Customer.
- Identify the Employees related Manager.

Module 4: Introduction to PowerQuery's M Language

This module briefs the M language that aims at building some first intuition and familiarity with the language.

Lessons:

- Overview of Language
- Expressions and Values
- Evaluation, Functions and Library.
- Operators and Metadata.
- LET and IF Expressions.
- Errors and Error Handling

Module 5: Lexical Structure

This module describes the M document and how to create document via using M Language and Unicode Characters.

Lessons:

- M Document
- Grammar Conventions
- Lexical Analysis
- Whitespace, Comments and Tokens.
- Literals, Identifiers and Keywords.

- Operators and Punctuators.

Labs:

- Create a Sample Record with Four Columns such as “OrderID, CustomerID, Item and Price”.
- Create a Sample Table with Four Columns such as “OrderID, CustomerID, Item and Price”.

Module 6: Basic Concepts

This module describes concepts which will come through the rest of the training course..

Lessons:

- Values
- Expressions
- Environment and Variables
- Order of Evaluation
- Side Effects
- Immutability

Labs:

- Create a Factorial Function.
- Create a Sample Record with Four Columns such as “OrderID, CustomerID, Item and Price” and Update the Price column value with additional 20%.

Module 7: Values in M Language

This module describes the kinds of values in the M language. Each kind of value is associated with a literal syntax, a set of values that are of that kind, a set of operators defined over that set of values, and an intrinsic type ascribed to newly constructed values.

Lessons:

- Null, Logical, Number, Time, Date and DateTime.
- Duration, Text, Binary, List, Record and Table.
- Function and Type.

Labs:

- Create a Customer Order table in Power Query.

Module 8: Types in M Language

This module describes the type value and related classification in M language.

Lessons:

- Primitive, Any, List and Record Types.
- Function, Table, Nullable Types.
- Ascribed Type of a Value.
- Type equivalence and Compatibility.

Labs:

- Create a Sales Order table in Power Query.

Module 9: Operators in M Language

This module describes defines the behavior of the various M operators.

Lessons:

- Operator Precedence and Metadata.
- Structurally and Projection Operators.
- Metadata, Equality and Relational Operators.
- Conditional Logical, Arithmetic Operators.
- Structure Combination.
- Unary and Type Operators.

Labs:

- Add metadata to each of column value in Customer's table.
- View given metatdata from each column value.
- Generate DateTime with Date and Duration functions.
- Concatenate Firstname and Lastname.

Module 10: Functions in M Language

This module describes defines the behavior of the various M functions.

Lessons:

- Writing and Invoking Functions.
- Parameters in Functions.
- Recursive Functions.
- Closures, Functions and Environments.
- Simplified Declarations.

Labs:

- Create simple multiply function.
- Create function to generate dates based on given parameter.
- Create a function to filter Customer data based on given parameter.

Module 11: Error Handling and Sections

This module describes defines the behavior of the Exception Error Handling in M Language.

Lessons:

- Raising and Handling Errors.
- Error in Record and LET initializers.
- Not Implemented Error.
- Document Linking and Introspection.

Labs:

- Raise an error based on a condition.
- Handle the Raised error within the Record and LET initializer.

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.

