



DAX for Power BI

Course ID #: 7000-633-ZZ-Z

Hours: 14

Delivery Method: Group Internet Based

Course Content

Description:

In this two-day course, students will be introduced to using Data Analysis Expressions (DAX), which is the expression language that is used to create custom calculations in the Power BI Data model. The course covers some of the theoretical underpinnings of the data model and DAX, but the emphasis is on using DAX to solve common business problems. Students will learn how to write their own calculated columns, measures, and tables, how to visualize the way Power BI computes DAX calculations, and how to troubleshoot custom code. This instructor-led course consists of a combination of lecture, demonstrations, and hands-on labs.

Prerequisites:

Although experience with Power BI Desktop is not strictly required for this class, students with at least some familiarity will be better equipped to get the most out of the lab work.

Topics:

Module 1: Getting Started with DAX

- Lesson 1: Introduction to DAX
 - What is DAX?
 - Basics of DAX syntax
 - Syntax Best Practices
 - Common DAX Syntax Best Practices
- Lesson 2: Creating Objects with DAX
 - Creating a calculated column
 - Creating a calculated measure
 - Creating a calculated table
 - Differences in evaluation context:
- Lesson 3: Context and Rules of Evaluation
 - Rules of Evaluation
- Lesson 4: Variables, Comment, and Testing
 - Working with variables
 - Commenting your code
 - Testing your code
 - Where to look for help
- Lab 1: What is DAX
 - Lab Introduction
 - Exercise 1: Create calculated columns
 - Exercise 2: Create calculated measures
 - Exercise 3: Create calculated tables
 - Exercise 4: Text your calculations
 - Exercise 5: Get help from a Large Language Model (LLM)
- Lab 1 Challenge Problems
 - Challenge Problem 1.1: Calculated [PROFIT COL] Column
 - Challenge Problem 1.2: Create a [# OF SALES] Measure



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Module 2: Performing Basic Calculations

- Lesson 1: Getting Started
 - Implicit measures
 - Adding quick measures
 - Working with DAX data types
- Lesson 2: Working with Numbers
 - Doing basic math
- Lesson 3: Logical Functions and Operations
 - Using logic in your calculations
 - Using the IF() function
 - Nested IF()
 - Using the SWITCH() function
 - Advanced SWITCH()
 - Logical Operators and Functions: ||, OR(), &&, AND(), NOT()
- Lesson 4: Aggregating and Summarizing Data
 - Aggregating and summarizing data
 - The SUM() function
- Lab2: Performing Basic Calculations
 - Lab Introduction
 - Exercise 1: Work with mathematical operations
 - Exercise 2: Working with text calculations
 - Exercise 3: Working with dates and times
 - Exercise 4: Working with logic
- Lab 2 Challenge Problems
 - Challenge Problem 2.1: Create an enhanced [Customer Full Name] Column
 - Challenge Problem 2.2: Create a Customer[ICONS] Column

Module 3: Working with Context in the Data Model

- Lesson 1: Evaluation Context
 - Context defined
 - A Row Context Example
 - A Filter Context Example
- Lesson 2: Dimensional Modeling
 - Data modeling basics
 - Introduction to dimensional modeling
- Lesson 3: Working with Relationships
 - Relationships and their effect on the evaluation context
 - Getting data from other tables using RELATED() and RELATEDTABLE()
 - Looking up data without using relationships
- Lesson 4: Manipulating the Context
 - Modifying the context using CALCULATE()
 - Using CALCULATE() with a filter
 - Using more than one CALCULATE() in a single measure
 - Using CALCULATE() with ALL() & REMOVEFILTERS()
 - Using CALCULATE() with ALLEXCEPT()
- Lab 3: Working with Context in the Data Model
 - Lab Introduction
 - Exercise 1: Creating a data model with a star schema
 - Exercise 2: Enhance the data model with measures
- Lab 3 Challenge Problems
 - Challenge Problem 3.1: Create a "Top Earner" measure
 - Challenge Problem 3.2: create a [Lemonade Only Sales] measure



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Module 4: Performing more Advanced Calculations

- Lesson 1: Handling Errors
 - Types of errors
 - Conversion errors
 - Arithmetic errors
 - Empty or missing values
 - Handling errors gracefully
 - ISERROR() and IFERROR()
- Lesson 2: Using DAX Iterator Functions
 - The DAX Iterator Functions
- Lesson 3: Using Table Manipulation Functions
 - Table manipulation functions
- Lesson 4: Troubleshooting Your Calculations Using the Performance Analyzer and DAX Studio
- Lab 4: Performance More Advanced Calculations
 - Lab Introduction
 - Exercise 1: Work with errors in data
 - Exercise 2: Using iterator functions
 - Exercise 3: Using table manipulation
 - Exercise 4: Get started with built-in DAX Query View
 - Exercise 5: Get started with DAX Studio
- Lab 4 Challenge Problems
 - Challenge Problem 4.1: Create a [TOTAL SALES] Column in the Customer Table
 - Challenge Problem 4.2: Use the SUMMARIZE() Function to Create a TOTALSALESBYCOUNTRY Table

Module 5: Working with Time

- Lesson 1: Performing Calculations with Date and Time data
 - Performing date calculations
 - Date and Time Functions
 - Time Intelligence Functions
- Lesson 2: Using Date Tables in your Data Model
 - Working with date tables
 - Generating a date table with the CALENDAR() function
- Lesson 3: Adapting your Model to Time-Based Business Rules
 - Defining custom operating periods
- Lesson 4: Working with Time Intelligence
 - YTD, QTD, and MTD calculations
 - Custom to-date calculations
 - Finding year-over-year
 - Change
 - Finding moving averages
- Lab 5: Working with Time
 - Lab Introduction
 - Exercise 1: Performing date calculations
 - Exercise 2: Working with date tables
 - Exercise 3: Working with to-date calculations
 - Exercise 4: Finding year-over-year change
 - Exercise 5: Finding moving averages
- Lab 5 Challenge Problems
 - Challenge Problem 5.1: Create a Rules-Based [OPENFORBUSINESS] Column



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Module 6: Enhancing the User Experience

- Lesson 1: Using DAX to Customize what the User Sees
 - Controlling visibility of your measures
- Lesson 2: Creating Interactive Measures with WHAT-IF Parameters
 - Using What-if parameters
- Lesson 3: Converting Continuous Data to Categorical Data
 - Adding banding
- Lesson 4: Adding Row-Level Security
 - Using DAX to Provide Row-Level security
 - Standard Row-Level Security
 - Dynamic Row-Level Security
- Lab 6: Enhancing the User Experience
 - Lab Introduction
 - Exercise 0: Enable Map and Filled Map visuals
 - Exercise 1: Controlling visibility of your measures
 - Exercise 2: Using numeric range parameters
 - Exercise 3: Adding banding
 - Exercise 4: Using DAX to provide row-level security
- Lab 6 Challenge Problems
 - Challenge Problem 6.1: Use Parameters to Create an RGB Color Code and Use it.

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NASBA CPE details are provided on the following pages.



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NASBA Information

Level: Intermediate

Advanced Preparation:

Attendance Requirement: To be awarded the full credit hours, you must sign in and attend the entire course.

Recommended Field(s) of Study:

Recommended CPEs: 15.60

Policies: Course Registration, Cancellation, Refund, and Complaint Resolution

For more information regarding administrative policies such as complaint and program cancellation policies, please contact our offices at 800-639-3535 or visit us at: www.tcworkshop.com

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