Excel Consulting

Power BI Specialist

DAX 1 Day Course

Course Overview

Increase your DAX proficiency

This course is designed to extend on and embed the foundations of DAX (contexts, rules of evaluation etc.) so you can begin to put that knowledge into practice. You will expand your awareness and knowledge of various DAX functions as well as learn some 'ins and outs' of writing efficient expressions.

What do I need to know to attend?

- Attended our Power BI Advanced course or equivalent knowledge and skill
- Source / model data and create basic tables, columns and measures with DAX
- Understanding general concepts of data modelling
- General knowledge of DAX and awareness of evaluation contexts
- Advanced Excel skills is desired, knowledge of scripting concepts an advantage

Learning Outcomes

- An appreciation of the evaluation contexts and engine behind DAX
- Write expressions more confidently using DAX with a wider range of functions
- Make use of tools to compliment creating and managing DAX
- Create more complex expressions using methods to build and prove an outcome
- Use techniques to optimise an expression for better efficiency

Detailed Content

Course Introduction
- What is DAX
- DAX Functions
- DAX Contexts
- What is Vertipaq
- DAX efficiency
- DAX references
- DAX best practices

Recap of Contexts
- Introduction to Contexts
- Recap of DAX Contexts
- The Row Context
- The Filter Context
- Measures and Calculated Columns
- Dataset for exercises – Computer Store sales
- Filter and Row Context in a measure
- The CALCULATE function
- Context Transition
- Filter expressions of CALCULATE
- Rules of Evaluation
- CALCULATE and FILTER

Contexts in Calculated Columns
- Introduction to Columns
- Row Context in Calculated Columns
- Filter Context in Calculated Columns
- Relationships in Row Contexts
- The RELATED function
- The RELATEDTABLE function
- Using RELATEDTABLE in a column
- CALCULATED in row contexts
- Row to Filter Context Transformation
- Whiteboard Exercise on row to filter contexts
- Duplicates in the transformation
- The LOOKUPVALUE function

Row Contexts in Measures
- Introduction to Row Contexts
- Row Contexts in Measures
- Simple iterator in a measure
- Row Context and a related table
- Some more calculations exercise
- Re-using measures
- Implicit CALCULATE in a measure
- An alternative approach using variables

Functions and FILTER
- Introduction to DAX functions
- Time Intelligence functions
- Date (Dimension) tables
- Using in-built TOTALYTD
- Date modifier functions
- Using date modifier DATESBETWEEN
- Using date modifier DATESYTD

Product Information

SYDNEY | BRISBANE | MELBOURNE
PERTH | CANBERRA | ADELAIDE

Phone: 1300 886 190
info@excelconsulting.com.au
www.excelconsulting.com.au

Excel Consulting

Power BI Specialist

DAX 1 Day Course

The magic behind Date Table functions
The case for simplicity – MAX or LASTDATE
Understanding the FILTER function
Contexts in the FILTER function
The filter context in functions
Naked column references
Simple filter expression
Comparing a value in the filter context
Adding another filter condition
The value of VALUES

Table Functions

Introduction to Table functions
Summarising Tables
Using SUMMARIZE alone
The problem with SUMMARIZE
Using ADDCOLUMNS and SUMMARIZE
Using SUMMARIZECOLUMNS as a better alternative
A summary table in a measure

Practical DAX

Introduction to DAX calculations
Comparing functions – min/max and time intelligence
Debugging with DAX
Alternative patters
The Quick Measure version
The KEEPFILTERS function
The TREATAS function
A few ORs or TREATAS
Using TREATAS and KEEPFILTERS
Using TREATAS for virtual relationships

DAX Tools

Use of third party tools
Introducing DAX Studio
What is DAX Studio
Download and Install DAX Studio
The DAX Studio Interface
How DAX Studio connects to the data
Viewing data model information
Creating a table query
Ordering a query result
A query returning a scalar
Defining a Measure
Declaring a variable
Incoming filter context

DAX Performance

Introduction to DAX Performance
The basics of the Vertipaq engine
Where is Vertipaq
A database of columns
Compression of a column
Identifying column compression
Understanding the TABLE_ID column
Power Query data statistics
Data Model Normalisation
Introduction to the Query Plan
Overview of the engines
The Formula Engine
The Storage Engine
Capturing a query
Special process to capture Power BI queries
Re-loading Power BI visuals
Understanding the query information from the capture

DAX Optimisation

Introduction to optimising DAX
Clear the Cache
Server Timings
Explaining the Server Timings
Steps to improve performance
Redefine a measure
The datacache
Optimisation by the Vertipaq engine
The CallBackDataID function
Reducing CallBackDataID instances
Optimising a Query in the Storage Engine
Viewing the Query Plan
Comparing two statistical functions

Extended Topics:

Table Joins

Introduction to Table Joins
The Inner Join
A join on unrelated tables - TREATAS
The Outer Join
The Cross Join
Using GENERATE for Joins

Nested Row Context

Introduction to Nested Rows
How Nested Rows work
The EARLIER function
The EARLIEST function
Create a nested row in a column
How to avoid complex nesting expressions
Using variables to store values before nesting
Avoid iterators where possible
Further improve the efficiency of an expression

Ranking

Introduction to Ranking
Arguments in RANKX
Create a calculated column for ranking
Sort order of ranking
Definitions when ranking ties
Breaking Ties Manually
Creating a measure for ranking
Adjustments to make the RANKX measure work

Product Information

SYDNEY | BRISBANE | MELBOURNE
PERTH | CANBERRA | ADELAIDE

Phone: 1300 886 190
info@excelconsulting.com.au
www.excelconsulting.com.au