Power BI- Advanced

Detailed Content

Course Introduction

Overview of Power BI

Data Model

Data Modelling in the Real World
Dataset for these exercises

Data Analysis eXpressions (DAX) - Introduction

Introduction to DAX
Learning DAX
Advice when creating DAX
Third party tools to assist
Measures Table
Create a Table for Measures

DAX - Measures and Filters

Filters on a Measure
Create simple aggregate measures
Using measures on a report page
Applying visual layouts and slicers / filters
Initial Filter Context / Original Filter Context / Query Context

DAX - The CALCULATE function

Introduction to the CALCULATE function
Modifying filters with CALCULATE
Add, replace, clear column filters
Limitation of CALCULTE
Adding Filters
Replacing Filters
The total row
Removing / Clearing Filters
The ALL and similar functions

DAX - Evaluation Contexts

Overview of evaluation contexts in DAX
The Filter Context
The Row Context
Initial Filter (Query) context
Initial Row context
Seeing Row context
Introducing a row context

DAX - The Rules of Evaluation

Introduction to the rules of evaluation
The five steps
Starting set of filters
Specify filtering
Filters are applied
Propagation of filters
Evaluation of expression
Stepping through the rules in an example

DAX - Contexts & Relationships

Introduction to Relationships
Filter context follows relationships
Explore the filter context
How filter context follows relationships
Filter context against relationships
The Both cross-filter direction
Modify the filter direction
The CROSSFILTER function
Impact on totals

DAX - The FILTER function

Introduction to the FILTER function
FILTER returning a table
Create a table with FILTER
Modify existing filter context with both FILTER and CALCULATE

Difference between these methods
Using ALL function in FILTER
Identical CALCULATE and FILTER
Extended exercise – ALL functions

DAX - Variables

Overview of variables in DAX
Creating and using variables
Use variables to store a constant
Use variables to avoid repetition
Where to from here

Row Level Security

Overview of RLS in Power BI
Create dynamic RLS using USERNAME or USERPRINCIPALNAME
Load data and enable RLS
Testing dynamic RLS in Desktop
RLS data access according to organisation hierarchy
DAX parent-child functions
Publish and assign roles in Power BI Service
Create App Workspace

Report Features

Introduction to advanced features
Overview of Drill-through
Create report page with drill-through filters
Interacting with drill-through
Overview of custom report tooltips
Modify standard tooltip display
Create a custom tooltip
Apply the tooltip to a field
Apply the tooltip to a visual
Overview of Grouping and Binning
Create a group

Create a bin
Binning a date field

Date Dimension

Overview of Date Dimension in BI
Power BI Desktop settings
Download or Create own table
Data Table with a DateKey
Convert a DateKey to a Date
Create date table in Power Query
Extended exercise - Use parameter to specify date table start and end
Create date table with DAX
Using CALENDARAUTO in DAX

Extended Topic A – API Data Sources

Overview of Web and API data sources
Query an API data source
HTTP and JSON terminology
Transform a JSON response
Publish to Power BI Service and setup refresh schedule

Extended Topic B – Streaming Data Sources

Overview of real time streaming data sources
Push Datasets and Streaming Datasets
Pushing data into a dataset
Query data from PubNub stream
Configure Dashboard tile to show streaming data from PubNub
Create a REST API to push data into Power BI
Create JSON object to insert data via this API
Push data to created API using HTTP Post
Create Dashboard tile to show updating data

Extended Topic C – Files in Folders

Overview of using a folder data source
Query a folder containing multiple source files
Column consistency
Specify a template file to define columns
View created queries / functions and dependencies
Understand the created process of querying the folder
Extended exercise – introduce additional files and unwanted files

Additional Study (Extended Topic D) –Power Query M Formula Language

Overview of Power Query M Formula Language
Basics of Power Query M
Values, Records, Lists
Operators
Conditional Testing
Error handling
Accessing table data
More advanced Power Query M
Each Expression
Refer to other queries
Understand a web query
Remove Rows by Filter
Unpivot & Rename

Extended Topic B – Query Parameters (Dynamic Web Query)

Importing a web query using parameters
Creating a custom function
Defining a List to create a new Query
Invoking custom functions
Using Error checking processes
Cleaning queries
Create measures and visualise queried data

Extended Topic C – Group By

Using the Group By feature

Data Normalisation Appendix

The Normal Forms
1st Normal Form