Advanced Data Analysis and Reporting in Microsoft Fabric

Course code: GOC682

An advanced training course for data professionals who want to master modern data analysis and reporting in the Microsoft Fabric environment, with a focus on working with the semantic layer, analytical models and Power BI. You will spend most of your time working with data prepared in Lakehouse and Data Warehouse — analysing, modelling, optimising and presenting it using semantic models, DAX calculations and enterprise-level reports.You will learn to design and implement an analytical layer on top of the Microsoft Fabric data platform. You will explore different approaches to working with data — from SQL querying over Lakehouse and Data Warehouse, through working with semantic models, to using XMLA endpoints and Power BI projects. You will master data model design, understand the differences between storage modes (including Direct Lake), and learn to work with advanced analytical components such as DAX calculations, calculation groups, field parameters and composite models.Strong emphasis is placed on performance, scalability and the management of analytical solutions. You will focus on optimising queries, models and reports, working with large format datasets, incremental refresh, and managing security using RLS and OLS. You will learn to work with reusable assets, shared semantic models and lifecycle management of analytical solutions in Microsoft Fabric.This training course, together with the Data Engineering in Microsoft Fabric course, provides a comprehensive view of working with data within the Microsoft Fabric platform and prepares you for the DP-600: Fabric Analytics Engineer Associate certification exam.

What you will learn

- How to effectively analyse and query data in Lakehouse and Data Warehouse
- How to design and implement semantic models in Microsoft Fabric
- How to create DAX calculations including advanced analytical scenarios
- How to work with different storage modes including Direct Lake
- How to design large format datasets and composite models
- How to implement dynamic data security (RLS, OLS)
- How to optimise the performance of queries, models and reports
- How to manage reusable assets and shared semantic models

Who the course is for

The course is designed for data analysts, business analysts and BI specialists working with Microsoft Fabric who want to take their analytical and reporting solutions to an advanced enterprise level. It is also suitable for data architects and technical leads involved in designing the analytical layer, semantic models and governance of analytical solutions.

Required prior knowledge

- Basic familiarity with the Microsoft Fabric environment, at least to the level covered by the GOC680 training
- Knowledge of relational databases and SQL
- Experience with data analysis and reporting
- Basic familiarity with Power BI or another BI tool
- Basic understanding of data warehouse and data lake concepts
- Experience working with data models is an advantage

Course outline

1. Data storage and querying

- Lakehouse and Data Warehouse – role in the analytical stack
- Querying data
- SQL queries and visual queries
- XMLA endpoints
- Notebooks, Dataflows Gen2, Data Wrangler
- Data profiling
- Impact analysis of downstream dependencies

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2. Data cleaning and transformation
   - Preparing data for analytical purposes
   - Transforming data for semantic modelling
   - Collaboration between the analytical and engineering layers
3. Semantic model
   - Choosing a storage mode including Direct Lake
   - Star schema design and relationships
   - DAX calculations and advanced analytical functions
   - Calculation groups and field parameters
   - Large format datasets and composite models
   - Dynamic RLS and OLS
4. Optimisation and management of semantic models
   - Optimising query and visual performance
   - DAX Studio and Tabular Editor
   - Incremental refresh
   - Model management using XMLA endpoints
5. Reporting and data exploration
   - Descriptive and diagnostic analytics
   - Predictive and prescriptive analytics
   - Power BI projects (.pbip)
   - Reusable assets and shared semantic models
6. Governance and admin perspective
   - Access and security management
   - Lifecycle management of analytical solutions

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