MASTERING DATA TRANSFORMATION IN POWER BI USING DAX

COURSE OVERVIEW

This course equips participants with the skills to leverage DAX for advanced data transformation and analytics. Through hands-on learning, participants will gain a solid foundation in building and optimizing data models while exploring advanced calculation techniques to turn raw data into actionable insights. Key topics include mastering relationships, schemas, and dynamic measures to confidently address complex data challenges. The course also covers advanced methods like time intelligence and performance optimization, enabling precise analysis and reporting. Participants will learn to create interactive, impactful Power BI dashboards, empowering data-driven decision-making and transforming complex datasets into meaningful business insights.

TARGET COMPETENCIES

- DAX Fundamentals
- Data Modeling
- Complex Calculations Capability
- Data Model
- Time Intelligence
- Dynamic Reporting

TARGET AUDIENCE

This course is designed for data analysts, Power BI users, Excel professionals, and business intelligence specialists seeking to enhance their data transformation and performance optimization skills.

COURSE OBJECTIVES

By completely attending this course, participants will be able to:

- Introduce DAX concepts and its applications in data transformation.
- Explain data modeling principles, including relationships and schemas.
- Highlight advanced calculation techniques for complex analytics.
- Demonstrate the use of time-based analysis for trends and insights.
- Support the creation of dynamic and interactive reports using DAX.

NOTE

This course requires participants to bring their own laptops with a Windows operating system, Power BI and Excel 2019/365 fully installed.

COURSE METHODOLOGY

The course employs a hands-on methodology with interactive workshops, real-world case studies, and group exercises, ensuring practical learning and skill application for mastering DAX concepts effectively.

COURSE OUTLINE

FUNDAMENTALS OF DAX AND ITS APPLICATIONS

- Introduction to DAX.
  - What is DAX?
  - Importance of DAX in Power BI and Excel.
  - Key Concepts: Tables, Columns, Measures.
- Basic Syntax and Functions.
  - Overview of DAX syntax.
  - Using Basic Functions (SUM, AVERAGE).
  - DIVIDE Function.
- Iterator Functions .
  - Introduction to Iterator Functions (SUMX, AVERAGEX).
  - Scenarios of Using Iterators.

DATA MODELING PRINCIPLES

- Overview of data model.
  - The data model and its role in analytics.
  - Relationships: Terminology & Logic.
  - Manage Relationships - How to Spot Problems.
- Data Modeling Best Practices.
  - Many-to-Many Relationships.
  - Create a Dynamic Calendar Table.
  - Star Schema Vs. Snowflake.
  - Why Not One Big Table? Optimizing Performance.
  - Maintaining robust data models.

INTERMEDIATE DAX CONCEPTS

- Combining DAX functions.
  - RELATED & SUMX.
- Time Intelligence Functions.
  - Introduction to Time Intelligence.
  - Year-to-Date (YTD), Month-Over-Month (MOM).
- Error Handling in DAX.
  - Functions: ISERROR, IFERROR.
  - Debugging Common Errors in DAX Formulas.

ADVANCED DAX TECHNIQUES

- Advanced Calculations with CALCULATE.
  - Using CALCULATE with Multiple Filters.
  - Dynamic Filtering Techniques.
  - CALCULATE Modifiers (ALL, REMOVEFILTERS, KEEPFILTERS).
- Working With Relationships.
  - Understanding Relationship Concepts.
  - Functions: RELATED, RELATEDTABLE.
  - USERELATIONSHIP to Activate Inactive Relationships.

DYNAMIC REPORTING USING DAX

- Create a Dedicated Measures Table.
  - Techniques for DAX measures Aggregation.
- Dynamic Measures and KPIs.
  - Creating Measures that Adapt to User Interaction.
  - Building KPI Visuals with DAX.
- Dynamic Reports.
  - Using DAX to Create Interactive Reports.
  - Building a Complete Dashboard.