KOENIG SOLUTIONS · COURSE OUTLINE

Power BI: Mastering Power Query M Language & DAX

Learn to transform data with Power Query M, build DAX calculations, design data models, and deploy Power BI reports.

5 Days	25	102
40 HOURS	MODULES	TOPICS

COURSE OVERVIEW

This course covers various concepts related to the M-Language and the various methods and best practices that are in line with business and technical requirements for modelling, visualizing, and analysing data with Power BI. The course will show how to access and process data from a range of data sources including both relational and non-relational sources. Finally, this course will also discuss how to manage and deploy reports and dashboards for sharing and content distribution.

WHO THIS COURSE IS FOR

- **Data Analysts**
- **Business Intelligence Developers**
- **Report Developers**
- **Data Modellers**
- **Power BI Administrators**

PREREQUISITES

- None

LEARNING OBJECTIVES

- Identify data analyst roles and tasks in Power BI
- Retrieve and shape data from various data sources
- Apply Power Query M language syntax and functions
- Create custom columns, parameters, and custom functions
- Design data models using star schema and relationships
- Build calculated measures, columns, and tables with DAX
- Apply advanced DAX functions such as filter and time intelligence
- Implement row-level security and manage workspace content

COURSE SYLLABUS

25 Modules, 102 Topics

01

Discover Data Analysis

TOPICS

Different data roles · Data analyst tasks

02

Get Started Building with Power BI

TOPICS

Data analytics with Microsoft · Building blocks of Power BI

01

Get Data in Power BI

TOPICS

Retrieve data from various data sources · Select storage mode · Resolve import errors

02

Power Query M Language Specification

TOPICS

- Introduction
- Lexical Structure
- Basic Concepts
- Values
- Types
- Operators
- Let
- Conditionals
- Functions
- Error Handling
- Sections
- Consolidated Grammar

03

Power Query M Language Functions

TOPICS

- Functions overview
- Understanding Power Query M functions
- Accessing data functions
- Popular Binary functions
- Popular Combiner functions
- Popular Comparer functions
- Popular Date functions
- Popular Logical functions
- Popular Number functions
- Popular Table functions
- Popular Text functions
- Popular Time functions

04

Adding a Custom Column

TOPICS

Create a custom column · Modify an existing custom column

05

Using Parameters

TOPICS

Creating a parameter · Parameter properties · Where to use parameters · Multi-value or list parameters

06

Data Transformations

TOPICS

Group By · Referencing Queries · Merging Queries · Appending Queries · Data Profiling · The advanced editor · Keep Rows/Remove Rows · Change data structure

07

Custom Functions

TOPICS

- Create a custom function from a table reference
- Create a custom function from a reusable piece of logic

Case Study: HR Analytics Part One

In this part of the case study, we'll start by bringing all your data into Power BI and connecting your data model. Once the data is ready, we'll start by rolling our sleeves up and doing some initial exploratory data analysis on general HR trends.

01

Design a Data Model in Power BI

TOPICS

Data types · Star schema · Create relationships · Cardinality · Edit relationships · Create hierarchies · Calculation Group · Field/Numeric parameters

02

Introduction to DAX

TOPICS

What is DAX · Calculated measures, columns, and tables

03

Advanced DAX Concepts

TOPICS

- Filter context
- Popular Filter Functions
- Popular Aggregation Function
- Popular Logical Functions
- Popular Information Functions
- Popular Text functions
- Popular Table manipulation functions
- Popular Relationship functions
- Popular Maths Functions
- Popular Semi-additive measures
- Popular Time intelligence functions

04

Optimize DAX Performance

TOPICS

Variables in DAX expressions · Performance analyzer

Case Study: HR Analytics Part Two

This part is about using Power BI skills to extract insights using DAX and learn how to build custom visuals that you can use throughout your report. Atlas Labs would like some answers on its employee demographics and performance.

01

Work with Visuals

TOPICS

Add visuals to report · Choose effective visuals · Format and configure visuals

02

Report Layout and Interactions

TOPICS

Design appealing report layout · Cross-highlight and drill down · Themes

03

Navigation and Filtering

TOPICS

Navigate and sort report · Filters and slicer visual

04

Report Design Elements

TOPICS

- Add shapes, buttons, text, images
- Bookmarks and drill through
- Selection order (accessibility)
- Integration with Power Automate and Power Apps
- When to use paginated reports

05

Perform Advanced Analytics with Power BI Desktop

TOPICS

- Explore insights with Advanced Analytics
- Data comparison with Analyze feature
- Group and bin data
- Cluster data and find outliers with Scatter chart visual
- Key Performance Indicator visual
- What-if parameters for scenario planning
- Leverage AI visuals
- AI insights during data preparation
- Use key influencers and decomposition tree visuals

Case Study: HR Analytics Part Three

It's almost time to deliver your report to the key stakeholders at Atlas Labs. In this final chapter, you'll be focusing on delivering insights on attrition and what factors affect employee retention. Finally, you'll be cleaning up the overall layout of the report to create a user-friendly, clean, and branded experience.

01

Power BI Workspaces

TOPICS

Create and manage workspaces · Workspace Roles · Interact with workspace items

02

Distribute and Manage Content

TOPICS

Create apps for distribution · Refresh, protect, and endorse datasets · On premises Gateway · Review Usage Metrics report · Power BI service licensing

03

Dashboards in Power BI Service

TOPICS

Create and use dashboards

04

Row-Level Security Overview

TOPICS

Enforce row-level security

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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