Power BI Advanced

Duration: 40 Hours (5 Days)

Course Overview

The Power BI advanced course is designed for learners looking to deepen their expertise in utilizing Power BI for complex data analysis and reporting. The course teaches how to Extract and transform data from various sources, Resolve import errors, and load data effectively into Power BI (Module 1). It then progresses to advanced Data preparation (Module 2), enabling students to clean and shape their datasets for optimal analysis. In Module 3, participants enhance their skills in Calculation using DAX, learning how to create sophisticated calculations and measures. Module 4 delves into visualizing data, where learners gain insights into advanced data visualization concepts and techniques to enhance reports. Module 5 introduces advanced features of Power BI, such as Creating paginated reports and dashboards, offering hands-on experience with Report Builder and Dashboard creation. Managing workspaces and datasets is the focus of Module 6, which is essential for collaboration and distribution of reports. The course culminates with a revision session and Q&A (Module 7), consolidating the knowledge gained. By the end of the course, participants will have a comprehensive understanding of Power BI's capabilities, enabling them to deliver powerful insights and make data-driven decisions.

Audience Profile

The Power BI Advanced course by Koenig Solutions is designed for professionals seeking to master data visualization and analysis using Power BI.

- The course is ideal for:
- Data Analysts
- Business Intelligence Professionals
- IT Professionals interested in data reporting
- Data Scientists
- Report Developers
- Business Analysts
- Project Managers overseeing BI reports
- Database Administrators
- Professionals in roles requiring advanced data analytics
- Marketing Analysts
- Financial Analysts
- Operations Managers needing data-driven insights
- SQL Server Reporting Services (SSRS) Professionals transitioning to Power BI
- Excel Users aiming to advance their data analysis skills with Power BI

Course Syllabus

Module 1: Get Data in Power BI

Lesson 1: Getting Data from Multiple Sources

- Excel (Locally Stored and Cloud-Based Excel files)
- Access
- CSV files and folders

- Web
- Dataverse and Dataflows
- Azure SQL Database
- Demo

Lesson 2: Resolve Data Import Errors

- Web authentication and loading tables
- Resolving data load errors
- Resolving data path errors
- Resolving refresh errors
- Exploring Power View visualization errors

Lab 1: Load Data in Power BI

Module 2: Preparing Data in Power BI

Lesson 1: Introduction to Enhancing Data Structure

- Join types and merging queries
- Profile data in Power BI
- Shape the initial data
- Simplify the data structure
- Evaluate and change column data types

Lesson 2: Introduction to Designing a Data Model

- Dimensional modeling overview
- Elements of the dimensional data model:
- Fact
- Dimension
- Attributes
- Fact table
- Dimension table
- Fact vs. Dimension
- Understanding cardinality
- Creating relationships and their effects
- Defining data granularity
- Configuring tables
- Working with relationships and cardinality
- Resolving modeling challenges
- Creating hierarchy
- Exploring time-based data

Lab 2: Data Transformation and Creating a Data Model

Module 3: Calculations with DAX

Lesson 1: Introduction to DAX

- Writing DAX formulas
- Calculated columns

- Measures:
- Simple measures
- Compound measures
- Quick measures
- Calculated tables
- Comparing calculated columns with measures
- Evaluation context and types of contexts

Lesson 2: Basic Math Calculations

- Summarization and aggregation:
- Modify filter context
- Use filter modifier functions
- Examine filter context
- Perform context transition

Lesson 3: Working with Context in the Data Model

- Retrieving data from other tables using RELATED and RELATEDTABLE
- Modifying context using the CALCULATE function
- Using the USERELATIONSHIP function

Lesson 4: Using DAX for Advanced Calculations

- Handling errors gracefully
- Understanding row context with iterator functions:
- SUMX
- AVERAGEX
- MAXX
- RANKX

Lesson 5: Creating and Manipulating Tables in DAX

- Functions:
- FILTER
- SUMMARIZE
- SUMMARIZECOLUMNS
- GROUPBY
- ADDCOLUMNS
- CALENDAR & CALENDARAUTO

Lesson 6: Working with Time

- DatesYTD, DatesQTD, DatesMTD
- Year-on-Year growth calculation
- DATEADD, PARALLELPERIOD, SAMEPERIODLASTYEAR
- Importance of variables and comments
- Introduction to optimizing model performance

Lab 3: Calculations Using DAX

Module 4: Visualize Your Data

Lesson 1: Introduction

- Creating reports with various visuals:
- Clustered and stacked column and bar charts
- Map visualizations
- Matrices and tables
- Scatter, waterfall, and funnel charts
- Modifying colors in charts and visuals
- Page layout and formatting

Lesson 2: Enhancing Reports

- Filtering and sorting reports
- Syncing slicers
- Creating drill-through pages
- Advanced drill-through features
- Applying conditional formatting
- Controlling measure visibility in DAX
- Using bookmarks and selection
- Displaying measures for specific users

Lesson 3: Advanced Data Visualization Concepts

- Creating and importing custom report themes
- Enabling personalized visuals in reports
- Designing and configuring reports for accessibility
- Reviewing report performance with Performance Analyzer
- Exploring statistical summaries and identifying outliers
- Applying clustering techniques and conducting time series analysis
- Using advanced analytics visuals and forecasting
- Grouping, binning, and banding
- Creating animated scatter charts

Lab 4: Design a Report in Power BI Desktop

Module 5: Advanced Features of Power BI

Lesson 1: Paginated Reports

- Downloading Report Builder
- Introduction to paginated reports
- Getting data and creating reports
- Working with charts in reports
- Publishing reports

Lesson 2: Creating Dashboards

- Editing published reports and pinning them to dashboards
- Introduction to real-time dashboards
- Creating forms for pushing data

- Creating push datasets
- Accessing Power Automate and creating flows
- Enhancing dashboards with custom themes, videos, and tile alerts
- Using Q&A and Quick Insights

Lab 5: Create a Power BI Paginated Report

Lab 6: Create a Power BI Dashboard

Module 6: Managing Workspaces and Datasets

Lesson 1: Managing Workspaces

- Managing workspaces and distributing reports or dashboards
- Monitoring usage and performance
- Creating and publishing apps
- Loading sample data and making workspaces premium
- Recommending a development lifecycle strategy

Lesson 2: Managing Datasets

- Creating and editing parameters
- Refreshing datasets and visuals
- Using "What If" parameters
- Implementing row-level security

Lab 7: Managing Workspaces and Datasets

Module 7: Revision and Q&A Session