KOENIG · COURSE OUTLINE

Power BI Advanced with Embedding (Microsoft)

Learn to model data, build DAX calculations, design reports and dashboards, and embed Power BI components into websites.

7 Days	8	114	7
56 HOURS	MODULES	TOPICS	HANDS-ON LABS

COURSE OVERVIEW

This course is a beginner to advance level in Power BI. It focuses upon the Power BI Data Analyst requirements, who wants to learn Data Model, DAX, Report and Dashboard creation. It also includes how to embed power BI component in a website.

WHO THIS COURSE IS FOR

- **Data Analysts**
- **Report Developers**
- **Business Intelligence Developers**
- **Power BI Developers**
- **Application Developers**

PREREQUISITES

- Not Applicable

LEARNING OBJECTIVES

- Connect to and import data from multiple sources
- Resolve data load, path and refresh errors
- Design data models with relationships and hierarchies
- Write DAX formulas, measures and calculated columns
- Build interactive reports with visuals and drill-throughs
- Create dashboards including real-time streaming datasets
- Manage workspaces, apps and dataset parameters
- Embed Power BI components and secure data with RLS

COURSE SYLLABUS

8 Modules, 114 Topics

01

Lab

Begin with Power BI

LESSON 1: GETTING STARTED WITH POWER BI

Why Data analysis – Types of analysis · Role of Data Analyst · Workflow of Data analyst with Power BI

LESSON 2: GETTING DATA FROM MULTIPLE SOURCES

Understanding Data Sources · Data Connectivity Mode · Connectors

LESSON 3: RESOLVE DATA IMPORT ERRORS

Web Authentication and Loading Tables · Resolving Data Load Error · Resolving Data Path Error · Resolving Refresh Error

02

Lab

Preparing Data in Power BI

LESSON 1: INTRODUCTION TO ENHANCING DATA STRUCTURE

- Enhancing Data Structure – Join Types Merge 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

- Introduction to Dimensional Modeling
- **Elements of the Dimensional Data Model:** Fact Table, Dimension Table
- Understanding cardinality
- Creating Relationships and their effects
- Define data granularity
- Configuring Tables
- Work with relationships and cardinality
- Resolve modelling challenges
- Creating Hierarchy
- Explore time-based data

03

Lab

Calculation with DAX

LESSON 1: GETTING STARTED WITH DAX

- Write DAX formulas
- Calculated Column
- Measures
- Create simple measures
- Create compound measures
- Create quick measures
- Calculate Tables
- Compare calculated columns with measures
- Evaluation Context
- Types of Contexts
- Summarization and Aggregation
- Modify filter context
- Use filter modifier functions
- Examine filter context
- Perform context transition

LESSON 2: USING DAX TO ENHANCE DATA MODEL AND ADVANCED CALCULATION

- Getting data from other tables using RELATED and RELATEDTABLE
- Modifying the context using CALCULATE function
- Use of USERELATIONSHIP function
- **Understanding Row Context with Iterator function:** SUMX, AVERAGEX, MAXX, RANKX
- Creating and Manipulating Table in DAX with functions
- Working with Time Intelligence functions
- Importance of Variables and Comments
- Introduction to Optimizing Model Performance

04

2 Labs

Creating Interactive and Paginated Reports

LESSON 1: UNDERSTANDING VISUALS AND CREATING REPORTS

- Creating reports with different visuals
- Cluster and Stacked column and bar chart
- Map visualizations
- Matrices and tables
- Create scatter, waterfall, and funnel charts
- Modify colors in charts and visuals
- Page layout and formatting
- Formatting different Visuals

LESSON 2: ENHANCING REPORT

- Filtering and Sorting Reports
- Sync Slicers
- Creating Drill Through Pages
- Applying Conditional Formatting
- Bookmarks and Selection

LESSON 3: INTRODUCTION TO ADVANCED DATA VISUALIZATION CONCEPTS

- Create and import a custom report theme
- Enable personalized visuals in a report
- Design and configure Power BI reports for accessibility
- Review report performance using Performance Analyzer
- Identify outliers with Power BI visuals
- Use the Analyze feature
- Use advanced analytics custom visuals
- Advanced Analytics – Grouping
- Advanced Analytics – Binning
- Creating Animated Scatter Charts
- Using Visuals to Forecast Values

LESSON 4: WORKING WITH PYTHON IN REPORTS

- Quick introduction to Python
- Integrating Python visual in Reports

LESSON 4: DOWNLOADING REPORT BUILDER AND CREATING PAGINATED REPORT

- Introduction to paginated reports
- Create a paginated report
- Work with charts on the report
- Publish the report
- Exporting paginated report

05

Lab

Creating Dashboard in Power BI

LESSON 1: INTRODUCTION TO DASHBOARDS

- Creating Dashboards – Editing Published Reports and Pinning to a New Dashboard
- Enhancing Dashboards with Custom Themes
- Enhancing Dashboard with Videos
- Enhancing Dashboard Tile Alerts
- Using Q&A and Quick Insights and Add to Dashboards

LESSON 2: CREATING REAL-TIME DASHBOARD

- Introduction to Real-Time Dashboards
- Introduction to Power Automate
- Creating Forms for Pushing Data
- Creating Streaming Datasets
- Accessing Power Automate
- Creating Flow to Push Form Data into Dataset

06

Lab

Managing Workspace and Datasets

LESSON 1: INTRODUCTION TO WORKSPACE

Managing Workspace · Providing access to workspace · Distribute a report or dashboard · Monitor usage and performance · Creating and Publishing Apps · Recommend a development life cycle strategy

LESSON 2: INTRODUCTION TO MANAGING DATASETS

Understanding Data refresh · Creating Parameters · Editing Parameters · Working with What if Parameter

07

Embedding Power BI Components

LESSON 1: PROGRAMMING THE POWER BI SERVICE API

- Power BI Service API Overview
- Registering Applications with Azure AD
- Programming Authentication and Managing Access Tokens
- Developing Custom Applications to Publish PBIX Project Files

LESSON 2: DEVELOPING WITH POWER BI EMBEDDED

- Overview of the Embedding Features in Power BI
- Understanding Premium Capacities versus Embedded Capacities
- Retrieving Embedding Data using the Power BI Service API
- Generating and Managing Embed Tokens

08

Securing Datasets Using Row Level Security

TOPICS

- Understanding Row Level Security (RLS)
- Implementing RLS in a Power BI Desktop Project
- Designing for RLS with the User-Owns-Data Model
- Implementing RLS Dynamically using the USERNAME Function
- Designing for RLS with the App-Owns-Data Model
- Generating Embed Tokens Restricted by RLS Roles

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
01	**Begin with Power BI**	**Lab 1:** Load data in Power BI
02	**Preparing Data in Power BI**	**Lab 2:** Data Transformation and Create Data Model
03	**Calculation with DAX**	**Lab 3:** Calculation using DAX
04	**Creating Interactive and Paginated Reports**	■ **Lab 4:** Design Report in Power BI Desktop ■ **Lab 5:** Create Power Bi Paginated Report
05	**Creating Dashboard in Power BI**	**Lab 6:** Create Power Bi Dashboard
06	**Managing Workspace and Datasets**	**Lab 7:** Creating Workspace and Managing Dataset

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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