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Let's Reach For Excellence!

# Pro Power BI Desktop

***Duration:*** *03 days*

Deliver eye-catching Business Intelligence with Microsoft Power BI Desktop. This new edition has been updated to cover all the latest features, including combo charts, Cartesian charts, trend lines, use of gauges, and more. Also covered are Top-N features, the ability to bin data into groupings and chart the groupings, and new techniques for detecting and handling outlier data points.

You can take data from virtually any source and use it to produce stunning dashboards and compelling reports that will seize your audience's attention. Slice and dice the data with remarkable ease and then add metrics and KPIs to project the insights that create your competitive advantage. Make raw data into clear, accurate, and interactive information with Microsoft's free self-service business intelligence tool.

Pro Power BI Desktop shows you how to choose from a wide range of built-in and third-party visualization types so that your message is always enhanced. You'll be able to deliver those results on the PC, tablets, and smartphones, as well as share results via the cloud. This course helps you save time by preparing the underlying data correctly without needing an IT department to prepare it for you.

AUTODESK Authorized Training
Microsoft Silver Learning
amazon web services Partner Network Authorized Training
SOLIDWORKS Authorized Training
Accredited Training Center EC-Council
PEARSON VUE-Authorized Test Center
KRYTERION GLOBAL TESTING SOLUTIONS

## AUDIENCE

This course is designed for persons for everyone from CEOs and Business Intelligence developers to power users and IT managers.

## AT COURSE COMPLETION

- Deliver attention-grabbing information, turning data into insight
- Mash up data from multiple sources into a cleansed and coherent data model
- Create dashboards that help in monitoring key performance indicators of your business
- Build interdependent charts, maps, and tables to deliver visually stunning information
- Share business intelligence in the cloud without involving IT
- Deliver visually stunning and interactive charts, maps, and tables
- Find new insights as you chop and tweak your data as never before
- Adapt delivery to mobile devices such as phones and tablets

## COURSE OUTLINE

### MODULE 1: GETTING STARTED

**Lesson 1: Introduction to Power BI**

- What is Power BI and its business value
- Power BI ecosystem overview (Desktop, Service, Mobile)
- Core building blocks: Dataset, Report, Dashboard, Visual
- End-to-end workflow: Connect → Transform → Model → Visualize → Share
- Licensing overview: Free, Pro, Premium

**Lesson 2: Power BI Desktop Basics**

- Interface overview: Report, Data, Model views
- Creating basic visuals (bar, line, table, card)
- Formatting visuals and applying themes
- Using slicers and filters for interactivity

**Lab: Build Your First Report**

Outcome: Create and publish your first interactive Power BI report.

- Get and load data
- Create and format visuals
- Add slicers and filters
- Publish to Power BI Service

## Module 2: Data Transformation & Data Loading in Power BI

### Lesson 1: Connecting to Data Sources in Power BI

Objective: Understand how Power BI connects to various data sources and how storage mode impacts performance and design.

- Connecting to common data sources: Excel, CSV, Web, SQL Server
- Choosing the appropriate Storage Mode: Import, DirectQuery, Live Connection
- Understanding the decision: Load vs. Transform Data
- Performance and governance considerations when selecting storage modes

### Lesson 2: Introduction to Power Query Editor

Objective: Learn how Power BI transforms raw data into analytical-ready datasets.

- Opening Power Query Editor from Power BI Desktop
- How Power Query works
- Key benefits of Power Query
- Navigating the Power Query interface

### Lesson 3: Core Data Transformations in Power Query

Objective: Perform essential data cleansing and shaping operations.

- Power Query settings: Data Profiling tools, Formula Bar
- Understanding Applied Steps logic
- Column-Level Transformations
    - Change Data Type
    - Split Columns
    - Merge Columns
    - Unpivot Columns
    - Add Custom Columns
- Row-Level Transformations

    - Use First Row as Headers
    - Remove Rows (Top/Bottom/Errors/Blank)
    - Filter Rows
- Loading Data

**Lab 1: Transform World Oil Dataset**

- Clean and shape global oil production data
- Prepare dataset for reporting
- Create a trend analysis report for World Oil Production

**Lab 2: Transform House Rules Board Games Dataset**

- Connect to multiple files
- Transform sales data (clean, shape, standardize)
- Prepare dimension and fact tables for modeling

## Module 3: Data Modeling and Calculation

**Lesson 1: Building a Strong Data Model Foundation**

Objective: Understand how to design scalable, high-performance data models in Power BI.

- Overview of the Power BI Data Model architecture
- Exploring Model View and table classifications (Fact vs. Dimension)
- Designing and validating a Star Schema
- Identifying and selecting the correct key columns for relationships
- Creating, editing, and troubleshooting relationships
- Best practices for clean, optimized data models

**Lesson 2: DAX Fundamentals - Thinking in Expressions**

Objective: Build a strong conceptual foundation in DAX for analytical calculations.

- What is DAX (Data Analysis Expressions) and why it matters
- Understanding basic DAX syntax and structure
- Core concepts to master early:
    - Row Context vs. Filter Context
    - Calculated Columns vs. Measures
    - Evaluation Context

- Common DAX functions and how to use official DAX references

**Lab 1: Review and evaluate an existing data model**

**Lesson 3: Creating Calculated Columns for Business Logic**

Objective: Apply row-level calculations to enrich your data model.

- What are calculated columns and when to use them
- Performance considerations and modeling impact

**Lab 2: House Rules Board Games Dataset**

- Task 1: Perform basic calculations to compute Sales Profit
- Task 2: Analyze age group distribution using SWITCH()
- Task 3: Retrieve related values from another table using RELATED()
- Discussion: When calculated columns are appropriate vs. when they are not

**Lesson 4: Creating Foundational Measures for Reporting**

Objective: Build dynamic aggregations that power interactive reports.

- What is a measure and how it differs from a calculated column
- Implicit vs. Explicit measures
- Core aggregation functions: SUM, AVERAGE, COUNTROWS, DISTINCTCOUNT, MIN, MAX
- Column vs. Measure: Conceptual and performance comparison

**Lab 3: House Rules Board Games Dataset**

- Task 1: Create a measure to count the number of customers
- Task 2: Create a measure to count the number of invoices
- Task 3: Add measures to report visuals and analyze behavior
- Task 4: Organize measures using Display Folders for model governance

## Module 4: Advanced DAX Calculations & Context Mastery

**Lesson 1: Modifying Filter Context**

Objective: Understand and control filter context to create dynamic, enterprise-level calculations.

- What is Filter Context and how it impacts measures
- Foundations of evaluation context
- CALCULATE Deep Dive: Boolean filter expressions, Table filter functions

- Removing and modifying filters: ALL(), ALLEXCEPT()
- Practical enterprise use cases (regional comparison, contribution analysis, dynamic benchmarks)

**Lab 1: House Rules Board Games Dataset**

- Task 1: Identify products where Sales Amount is double the Product Cost in the Central Region
- Task 2: Calculate % contribution to: Grand Total, Each Region

**Lesson 2: Examining & Debugging Filter Context**

Objective: Learn how to inspect and debug filter behavior for dynamic reporting.

- Understanding how filter context flows through visuals
- Inspecting context with: VALUES(), SELECTEDVALUE(), HASONEVALUE()
- Debugging techniques: ISFILTERED(), ISINSCOPE()

**Lab 2: House Rules Board Games Dataset**

- Capture user selections to control measure calculations
- Create dynamic report titles based on slicer selections

**Lesson 3: Using Iterator Functions**

Objective: Perform row-by-row calculations for advanced aggregation scenarios.

- What are iterator functions
- How iterators create row context internally
- Common iterator functions (e.g., SUMX(), AVERAGEX(), RANKX())
- Case study: Complex summarization across multiple dimensions
- Ranking techniques using iterator functions

**Lab 3: House Rules Board Games Dataset**

- Summarize multiple rows using iterator functions
- Implement ranking logic with RANKX()

## Module 5: Advanced Report Skills & Sharing

**Lesson 1: Advanced analytics visuals**

- Using advanced visuals for deeper insights
- Top N analysis and ranking techniques

- Trend analysis and dynamic filtering
- Enhancing storytelling with analytical features

**Lesson 2: Enhancing reports**

- Designing clean and user-friendly report pages
- Edit Interactions between visuals
- Bookmarks & Buttons for navigation
- Conditional Formatting for dynamic highlighting
- Drill-through reports for detailed analysis
- Report Page Tooltips for contextual insights
- What-If Parameters for scenario analysis

**Lab 1: House Rules Board Games Dataset**

- Task 1: Prepare and design a professional report page
- Task 2: Apply TOPN filter for ranking analysis
- Task 3: Configure visual interactions
- Task 4: Implement Bookmarks & Buttons
- Task 5: Apply Conditional Formatting
- Task 6: Create a Drill-through report
- Task 7: Design a Report Page Tooltip
- Task 8: Build a What-If Parameter for simulation

**Lesson 3: Row-Level Security (RLS)**

- What is Row-Level Security (RLS)?
- Configure RLS in Power BI Desktop
    - Create security roles
    - Define DAX filters for each role
    - Test and validate roles using “View as”
- Assign Roles in Power BI Service
    - Publish report to Power BI Service
    - Assign users or groups to security roles
    - Validate access from end-user perspective

**Lesson 4: Power BI Service & Sharing**

- Power BI Service Overview (Shared Workspaces, Apps, and Dashboards, Reports)
- Sharing and collaboration
    - Sharing reports with individuals and groups
    - Managing report permissions (Viewer, Member, Contributor, Admin)
    - Best practices for secure collaboration
    - Sharing via Apps for enterprise distribution
- Data Refresh & Gateways

**Lab: Sharing & Collaboration**

- Task 1: Configure Row-Level Security (RLS) for different sales regions
- Task 2: Publish report to Power BI Service and assign RLS roles
- Task 3: Create a dashboard from report visuals
- Task 4: Share reports and manage user permissions

## Module 6: Capstone Project

Apply end-to-end Power BI skills to deliver a complete business intelligence solution.

**Project Scope**

- Connect to multiple data sources
- Transform and clean data using Power Query
- Design a star schema data model
- Create calculated columns and measures (DAX)
- Build interactive and analytical report pages
- Publish and configure sharing in Power BI Service

**Deliverables**

- Fully functional Power BI report (.pbix)
- Published report in Power BI Service
- Interactive dashboard
- Short presentation of insights and design decisions