Certified Professional Diploma

Power BI Data Analyst

Blends with Excel, SQL and PL-300 Exam Preparation

Practical Training on Real World Industrial Datasets

Target Learners: Undergraduates and Job Professionals

Pre-requisite: Basic computer technological skills

Duration: 6 Months (2 sessions each week = Total 48 sessions)

Credit Hours: 96 (4 Hours each week)

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Enrollment Form: https://forms.gle/wHUTGTGtAAba5AjN6

Key Takeaways

- Basic to Advance Excel
- Working with data in excel
- Data Analysis in Excel
- Data Visualization in Power BI
- Power Queries and Editor
- Data Modeling in Power BI
- DAX in Power BI
- Power BI Service.
- Creating Dashboards
- Data Connections in Power BI.
- Working with SQL Database
- SQL Queries and Interfacing with Power BI
- Publishing & sharing dashboards
- Bravo with Power BI
- Power BI Mobile Interface
- PL-300 Microsoft Certification Exam Preparation

Approved by

ViLabs Academy, Advisory Board Members (ABM) comprises senior educators, industry leaders, and global technology experts who provide strategic guidance across training design and curriculum development. The Board actively reviews course content, ensures alignment with current industry demands, and validates learning outcomes against global skill standards. Their involvement guarantees that all ViLabs Academy programs remain credible, practical, and workforce-ready, giving learners and partners confidence in the quality and relevance of our education.

Software/Tools to be learn

- Power BI Desktop
- Power BI Service
- Power BI Mobile

Course Outline

Working with Data in Excel

- Entering data and formatting cells
- Basic formulas and functions
- Sorting and filtering data
- Conditional formatting
- Data validation

Advanced Excel Functions

- Advanced formulas and functions (e.g. VLOOKUP, IF statements)
- Using Named Ranges and Absolute References
- Pivot Tables: Creating, formatting, & filtering data
- Pivot Charts: Creating & formatting pivot charts

Data Analysis in Excel

- Advanced charting techniques
- Data visualization techniques
- Using Histograms for data visualization
- Data analysis tools (e.g. Goal Seek)
- Scenario Manager: Creating and managing scenarios
- Descriptive statistics: Mean, Median, Mode, Variance, and Standard Deviation

Collaborating in Excel

- Sharing and protecting workbooks
- Tracking changes and comments
- Collaborating with OneDrive and SharePoint
- Exporting data and reports

Introduction to Power BI and Connect to Data

- Getting started with Power BI Desktop
- Explore Power BI tools.
- Connect to Data Sources in Power BI Desktop
- How to Import Excel Workbooks and CSV Files.
- How to analyze Tabular Data.
- Connect to Web data.
- Importing and analyzing data from a web page.
- Analyzing sales data from Excel
- Bringing your own data and analyze it in Power BI.

Data Visualization in Power BI

- Explore all visualization tools
- Add data to your visual.
- Format your report page.
- Add further analysis to your visual.
- Apply filters to your visualization.

Working with Reports

- Discuss report view / sort by column.
- Tips and tricks for creating reports.
- Creating reports on Finances of a company.

Power Query and Combine Data

- Getting started with Power Query Editor
- Query Overview
- Data categorization
- Column and Row management
- Data types
- Statistics, Standard and Scientific operations

Data modeling

- Relationship/Model view
- Create and manage relationships in Power BI Desktop

Data Fundamentals and DAX Functions

- Data Type in Power BI Desktop
- DAX Basics
- Measures in Power BI Desktop
- Create your own measures
- Calculated columns
- Create calculated columns
- Difference between Calculated Measures and Calculated Columns

Context in DAX Formulas

- Introduction to Context
- Row Context
- Filter Context
- Iterator Function
- Calculate Function
- Variables
- Variable in conjunction with calculate Function

The Date Table in DAX

- Calculated tables
- Working with dates
- Importance of date table
- Creating date table
- Adding column inside a table
- Connecting columns of tables

Quick Measures in DAX

- Explore quick measures pane
- Working with all calculation’s tools in quick measures
- Aggregate, filters and time intelligence functions, etc.

Power BI Service

- The data flow process
- Power BI desktop connections
- Welcome to Power BI Services
- Desktop vs Services

Workspaces in Power BI Service

- Creating apps and workspace
- Templates vs organizational apps
- Workspace defaults

Securing Content in Power BI

- Securing Datasets
- Row level security benefits
- Manage dataset permissions
- Matching and Granting permission on activities.

Dashboards

- Importance of Dashboards
- How to create and manage dashboards in Power BI
- Configuring Dashboards

Sharing your Work

- Steps to publish an app
- Publish from Power BI Desktop

- Share a dashboard from Power BI

Power BI Mobile

- Exploring Power BI Mobile
- How to work for Power BI Mobile Interface
- Formatting for Mobile Interface
- Tool and Editing options

Social Media Analysis

- Social Media Platforms
- How to extract data from LinkedIn and Facebook
- LinkedIn Analysis
- Facebook Analysis

Bravo with Power BI

- Introduction to Bravo
- Connecting Power BI with Bravo
- Analyzing datasets
- Formatting DAX formulaes
- Date Tables and Time Intelligence in Barvo
- Exporting datasets from Bravo

Data source settings and M Language

- Discovering M Language
- Concepts of Lists, Records and Tables
- How to create lists and records
- How to extract data from lists and records.

SQL Database

- Overview of databases and their importance
- Types of databases: relational, NoSQL, etc.
- Introduction to MySQL and MySQL Workbench
- Installing MySQL and Workbench
- Creating and managing databases
- CRUD operations (Create, Read, Update, Delete) in SQL
- Retrieving data using SELECT statements
- Filtering data with WHERE clause
- Sorting and limiting query results
- Using JOINs to combine data from multiple tables
- Aggregation functions (COUNT, SUM, AVG, MAX, MIN)
- GROUP BY and HAVING clauses for data grouping
- Subqueries and their applications
- Connect to SQL Data Sources in Power BI
- How to import and analyze SQL Data.

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Prepare the Data (25-30%)

- Connecting to data sources, including databases and web data.

- Configuring data sources, modifying parameters, and managing data privacy settings.
- Profiling data and using Power Query for data cleaning: handling inconsistencies, missing values, and import errors.
- Transforming data: changing data types, grouping, pivoting/unpivoting, and creating fact/dimension tables.

Model the Data (25-30%)

- Creating a relational data model: defining relationships, configuring table/column properties, and implementing role-playing dimensions.
- DAX calculations: defining calculated columns, tables, measures, and time intelligence functions.
- Optimizing model performance with techniques like reducing granularity and leveraging DAX Performance Analyzer.

Visualize and Analyze the Data (25-30%)

- Building and formatting reports with various visualization options.
- Enhancing report storytelling with bookmarks, custom tooltips, and drill-throughs.
- Identifying data trends using Power BI's AI visuals, grouping, and forecasting tools.
- Designing reports for mobile and accessibility.
- Manage and Secure Power BI (15-20%)
- Configuring workspaces and app deployment, managing dashboard subscriptions, and sharing reports.
- Implementing security with row-level security, assigning workspace roles, and configuring sensitivity labels.
- Managing and refreshing datasets with gateways and data alerts.

Projects

1. **Amazon Products Sales Analytics:** Analyze sales data from Amazon to identify top-performing products and optimize sales strategies for 2023.
2. **Postpartum Depression Study:** Investigate factors contributing to postpartum depression and explore potential interventions using Power BI analytics.
3. **Walmart Retail Sales Analysis:** Explore sales data from Walmart to understand consumer behavior and optimize retail strategies using Power BI.
4. **Bangladesh Weather Dataset Analysis:** Gain insights into historical weather patterns and trends in Bangladesh from 1901 to 2023 using Power BI.
5. **Academic Success and Dropout Trends:** Analyze student dropout rates and academic success factors to enhance educational interventions and support systems.
6. **United States Census Manufacturing Survey:** Dive into manufacturing survey data from the United States Census Bureau to uncover industry trends and opportunities for growth.
7. **Kevin Cookie Company Financial Analysis:** Conduct financial analysis of Kevin Cookie Company to optimize budgeting and financial planning strategies.
8. **Gold and Commodities Price Prediction:** Apply predictive analytics to forecast gold and commodity prices from 2000 to 2022 using Power BI.
9. **Bank Loan Prediction Modeling:** Develop predictive models to assess loan eligibility and minimize default risks for a bank.

10. **Social Media Analytics:** Analyze engagement data from Facebook and LinkedIn to optimize marketing strategies and enhance brand presence across platforms.