



## Power BI

### Power BI Complete Introduction

- ✓ Power BI Introduction
- ✓ Data Visualization, Reporting
- ✓ Business Intelligence (BI), Traditional BI, Self-Serviced BI
- ✓ Cloud Based BI, On Premise BI
- ✓ Power BI Products
- ✓ Power BI Desktop (Power Query, Power Pivot, Power View)
- ✓ Flow of Work in Power BI Desktop
- ✓ Power BI Report Server, Power BI Service, Power BI Mobile
- ✓ Flow of Work in Power BI / Power BI Architecture
- ✓ A Brief History of Power BI

### PBI Desktop Installation, PBI Desktop & Service Overview

- ✓ Power BI Desktop Installation
- ✓ Building Blocks of Power BI
- ✓ Datasets, Visualizations, Reports, Dashboards, Tiles
- ✓ Power BI Desktop User Interface
- ✓ Fields Pane, Visualizations pane, Ribbon, Views, Pages Tab, Canvas
- ✓ Overview of Power Query / Query Editor - Extract, Transform & Load Data
- ✓ Connecting to Data Sources, Establish connection to the Excel source
- ✓ Importing Data into Power BI or Query Editor
- ✓ Transforming the Data using Power Query
- ✓ Model the Data using Power Pivot - Relationship View
- ✓ Creating New Measures and New Columns using DAX - Data View
- ✓ Visualizing the Data using Power View and Power Maps - Report View
- ✓ Saving and Publishing the Visuals or Reports
- ✓ Logon to Power BI Service
- ✓ View the Reports in PBI Service and Share the reports

### Power Query

#### Introduction to Power Query - Extract, Transform & Load

- ✓ Data Transformation, Benefits of Data Transformation
- ✓ Shape or Transform Data using Power Query
- ✓ Overview of Power Query / Query Editor, Query Editor User Interface

- ✓ The Ribbon (Home, Transform, Add Column, ViewTabs)
- ✓ TheQueriesPane,TheDataView/ResultsPane,TheQuerySettingsPane,FormulaBar
- ✓ Advanced Editor - Complete ETLCode
- ✓ Saving Your Work - Applying ETL Changes - Loading into Power PivotModel
- ✓ Power QueryConceptually

### Datatypes and Filters in Power Query

- ✓ Datatypes, Changing the Datatype of aColumn
- ✓ Filters in PowerQuery
- ✓ Auto Filter / BasicFiltering
- ✓ Filter a Column using TextFilters
- ✓ Filter a Column using NumberFilters
- ✓ Filter a Column using DateFilters
- ✓ Filter MultipleColumns

### Inbuilt Column Transformations

- ✓ Remove Columns / Remove OtherColumns
- ✓ Name / Rename aColumn
- ✓ Reorder Columns or SortColumns
- ✓ Add Column / CustomColumn
- ✓ SplitColumns
- ✓ MergeColumns
- ✓ PIVOT, UNPIVOTColumns
- ✓ TransposeColumns

### In built Row Transformations

- ✓ Header Row or Use First Row asHeaders
- ✓ Keep Top Rows, Keep BottomRows
- ✓ Keep Range ofRows
- ✓ Keep Duplicates, KeepErrors
- ✓ Remove Top Rows, Remove Bottom Rows, Remove AlternativeRows
- ✓ Remove Duplicates, Remove Blank Rows, RemoveErrors
- ✓ Group Rows / GroupBy

### Combine Queries (Append Queries & Merge Queries)

#### Append Queries / Union Queries

- ✓ AppendQueries
- ✓ Append Queries asNew
- ✓ Append 2 or more files individually with differentqueries

- ✓ Appending multiple files of same type from a folder using singlequery
- ✓ QueryOptions
- ✓ Copy Query, PasteQuery
- ✓ Delete Query, RenameQuery
- ✓ Enable Load, Include in reportRefresh
- ✓ Duplicate Query, Reference Query
- ✓ Move to Group, Move Up, MoveDown

### Merge Queries / Join Queries

- ✓ Merge Queries, Merge Queries asNew
- ✓ Default Types of Joins / Join Kinds / MergeType
  - Left Outer (all from first, matching fromsecond)
  - Right Outer (all from second, matching fromfirst)
  - Full Outer (all rows fromboth)
  - Inner (only matchingrows)
  - Left Anti (rows only infirst)
  - Right Anti (rows only insecond)
- ✓ Cartesian Join or CrossJoin

### Power Pivot

#### Power BI Data Modeling - Relationship View

- ✓ Data ModelingIntroduction
- ✓ Relationship, Need ofRelationship
- ✓ Relationship Types / Cardinality inGeneral
- ✓ One-to-One, One-to-Many (or Many-to-One), Many-to-Many
- ✓ AutoDetect the relationship, Create a new relationship, Edit existingrelationships
- ✓ Make Relationship Active or Inactive
- ✓ Delete arelationship
- ✓ Cross filter direction (Single, Both), Assume ReferentialIntegrity

#### Enhancing the Data Model - DAX

- ✓ What is DAX, Calculated Column, Measures
- ✓ DAX Table and Column NameSyntax
- ✓ Creating Calculated Columns, Creating Measures
- ✓ Implicit Vs Explicit Measures
- ✓ Calculated Columns Vs Measures
- ✓ DAX Syntax & Operators
- ✓ DAX Operators
- ✓ Types of Operators

- ✓ Arithmetic Operators, Comparison Operators, Text Concatenation Operator, Logical Operators

### DAX Functions Categories

- ✓ Date and Time Functions
- ✓ Logical Functions
- ✓ Text Functions
- ✓ Math & Statistical Functions
- ✓ Filter Functions
- ✓ Time Intelligence Functions

### DAX Date & Time Functions

- ✓ YEAR, MONTH, DAY
- ✓ WEEKDAY, WEEKNUM
- ✓ FORMAT (Text Function) → Month Name, WeekdayName
- ✓ DATE, TODAY, NOW
- ✓ HOUR, MINUTE, SECOND, TIME
- ✓ DATEDIFF, CALENDAR
- ✓ Creating Date Dimension Table

### DAX Text Functions

- ✓ LEN, CONCATENATE(&)
- ✓ LEFT, RIGHT, MID
- ✓ UPPER, LOWER
- ✓ TRIM, SUBSTITUTE, BLANK

### DAX Logical Functions

- ✓ IF
- ✓ TRUE, FALSE
- ✓ NOT, OR, IN, AND
- ✓ IFERROR
- ✓ SWITCH

### DAX Math and Statistical Functions

- ✓ INT
- ✓ ROUND, ROUNDUP, ROUNDDOWN
- ✓ DIVIDE
- ✓ EVEN, ODD
- ✓ POWER, SIGN
- ✓ SQRT, FACT

- ✓ SUM, SUMX
- ✓ MIN, MINX
- ✓ MAX, MAXX
- ✓ COUNT, COUNTX
- ✓ AVERAGE, AVERAGEX
- ✓ COUNTROWS, COUNTBLANK

#### DAX Filter Functions

- ✓ CALCULATE
- ✓ ALL
- ✓ RELATED

#### DAX Time Intelligence Functions

- ✓ Time Intelligence Introduction
- ✓ TOTALMTD, TOTALQTD, TOTALYTD
- ✓ PREVIOUSDAY, PREVIOUSMONTH, PREVIOUSQUARTER, PREVIOUSYEAR
- ✓ NEXTDAY, NEXTMONTH, NEXTQUARTER, NEXTYEAR
- ✓ SAMEPERIODLASTYEAR
- ✓ YOY Growth
- ✓ MOM Growth

#### Power View

##### Report View / Power View

- ✓ Report View User Interface
- ✓ Fields Pane, Visualizations pane, Ribbon, Views, Pages Tab, Canvas
- ✓ Visual Interactions
- ✓ Interaction Type (Filter, Highlight, None)
- ✓ Visual Interactions Default Behavior, Changing the Interaction

##### Filters in Power View

- ✓ Filter Types
- ✓ Visual Level Filters, Page Level Filters, Report Level Filters, Drill Through Filters
- ✓ Filter SubTypes
- ✓ Basic Filtering, Advanced Filtering, Top N, Relative Date Filtering
- ✓ Numeric field filters, Text field filters, Date and Time field Filters

##### Grouping, Binning & Sorting

- ✓ Grouping and Binning Introduction
- ✓ Using grouping, Creating Groups on Text Columns
- ✓ Using binning, Creating Bins on Number Column and Date Columns

- ✓ Sorting Data in Visuals
- ✓ Changing the Sort Column, Changing the Sort Order
- ✓ Sort using column that is not used in the Visualization
- ✓ Sort using the Sort by Column button

### Hierarchies and Drill-Down Reports

- ✓ Hierarchy Introduction, Default Date Hierarchy
- ✓ Creating Hierarchy, Creating Custom Date Hierarchy
- ✓ Change Hierarchy Levels
- ✓ Drill-Up and Drill-Down Reports
- ✓ Data Actions, Drill Down, Drill Up, Show Next Level, Expand Next Level
- ✓ Drilling filters other visualization option

### Power BI Visualizations

- ✓ Visualizing Data, Why Visualizations
- ✓ Visualization types, Field Wells
- ✓ Visuals for Filtering, Visualizing Categorical Data, Visualizing Trend Data
- ✓ Visualizing KPI Data, Visualizing Tabular Data, Visualizing Geographical Data
- ✓ Leveraging Power BI Custom Visuals

### Visuals for Filtering

- ✓ Slicer Visualization
- ✓ When to use a Slicer
- ✓ Create and format Slicer Visualization
- ✓ Hierarchy Slicer (Custom Visualization)
- ✓ When to use a Hierarchy Slicer
- ✓ Create and format Hierarchy Slicer
- ✓ Advantages of Hierarchy Slicer

### Visualizing Categorical Data

- ✓ Create and Format Bar and Column Charts
- ✓ Create and Format Stacked Bar Chart Stacked Column Chart
- ✓ Create and Format Clustered Bar Chart, Clustered Column Chart
- ✓ Create and Format 100% Stacked Bar Chart, 100% Stacked Column Chart
- ✓ Create and Format Pie and Donut Charts
- ✓ Create and Format the Tree Map Visual
- ✓ Create and Format Scatter Charts

### Visualizing Trend Data

- ✓ Line and Area Charts
- ✓ Create and Format Line Chart, Area Chart, Stacked Area Chart

- ✓ ComboCharts
- ✓ Create and Format Line and Stacked Column Chart, Line and Clustered ColumnChart
- ✓ Create and Format Ribbon Chart, Waterfall Chart, FunnelChart

### Visualizing KPI Data

- ✓ Create and Format Gauge Visual, KPIVisual
- ✓ Create and Format Card Visualization, Multi RowCard

### Visualizing Tabular Data, Geographical Data & R Script Visual

- ✓ Create and Format Table Visual, MatrixVisualization
- ✓ Create and Format Map Visual, Filled Map Visual, Arc GIS MapsVisual
- ✓ Create and Format R ScriptVisual

## Power BI Service

### Power BI Service Introduction

- ✓ Power BI Service Introduction, Power BI CloudArchitecture
- ✓ Creating Power BI Service Account, SIGN IN to Power BI ServiceAccount
- ✓ Publishing Reports to the Power BI service, Import / Getting the Report to PBIService
- ✓ My Workspace / App WorkspacesTabs
- ✓ DATASETS, WORKBOOKS, REPORTS, DASHBOARDS
- ✓ Working with Datasets, Creating Reports in Cloud using PublishedDatasets
- ✓ Power BI Datasets Live Connection using Desktop
- ✓ Working with Workbooks, working with Reports, SharingReports

### Dashboards Development

- ✓ CreatingDashboards
- ✓ Pin Visuals and Pin LIVE Report Pages toDashboard
- ✓ Advantages ofDashboards
- ✓ Interacting withDashboards
- ✓ Adding Tiles toDashboards
- ✓ Web Content, Image, Text Box, Video
- ✓ FormattingDashboard
- ✓ SharingDashboard

### Data Gateways

- ✓ Introduction to DataGateways
- ✓ How Data Gatewayswork
- ✓ Connect to an on premise Data Source by using a DataGateway
- ✓ Download DataGateway
- ✓ Installing a DataGateway

- ✓ Types of Gateways
- ✓ On-premises Data Gateway, On-premises Data Gateway (personal mode)
- ✓ Manage Data Gateway
- ✓ Add and Remove Administrators
- ✓ Add Data Source, Add or Remove Users to a Data Source
- ✓ Refresh On Premise Data
- ✓ Configuring Automatic Refresh using Schedules

### Collaboration in Power BI using App Workspace

- ✓ Introduction to App Workspaces
- ✓ Create an App Workspace
- ✓ Add Members to App Workspace to Collaborate
- ✓ App Workspace Access
- ✓ Admin, Member, Contributor

### Sharing Power BI Content using Apps and Content Packs

- ✓ Introduction to App
- ✓ Publish an App
- ✓ Update a Published App
- ✓ Manage Content in App
- ✓ Include in App, Exclude in App
- ✓ Sharing App
- ✓ Entire Organization, Specific individuals or group
- ✓ Unpublishing an App
- ✓ Content Pack Introduction
- ✓ Create Content Pack
- ✓ Sharing Content Packs
- ✓ Specific Groups, My Entire Organization
- ✓ Selecting the Content / Items to Publish or Share

### Row Level Security in Power BI

- ✓ Introduction to Row Level Security
- ✓ Row Level Security (RLS) with DAX
- ✓ Manage Roles, Creating Roles, Testing Roles
- ✓ Adding Members to Roles in Power BI Service
- ✓ Dynamic Row Level Security
- ✓ Creating Users Table and Adding to the Model
- ✓ Capturing users using Username () or UserPrincipalName () DAX Functions

### ADD ON

- ✓ Real-time Project Hands On.



- ✓ ResumePreparation
- ✓ Interview QuestionsDiscussions
- ✓ MockInterviews



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