



# Power BI



# About Course

**Power BI is an interactive data visualization software product developed by Microsoft with a primary focus on business intelligence. It is part of the Microsoft Power Platform. Power BI is a collection of software services, apps, and connectors that work together to turn unrelated sources of data into coherent, visually immersive, and interactive insights. Data may be input by reading directly from a database, webpage, or structured files such as spreadsheets, CSV, XML, and JSON.**

# **POWER BI & DATA VISUALIZATION**

## **CURRICULUM**

**1**

### **INTRODUCTION TO POWER BI**

**Introduction to Business Intelligence (BI)**

**Stages of business intelligence (BI)**

**Use cases of BI**

**Various BI tools**

**Overview of Data warehouse & concepts**

**Introduction to Power BI**

**Why Power BI**

**Power BI Components**

**Power BI pricing structure**

**Building blocks of Power BI**

**Architecture of Power BI**

**Power BI vs Tableau vs QlikView**

**Introduction of Power BI Desktop**

**Installation of Power BI Desktop**

**The key features of Power BI workflow**

**Process of creating reports in Power BI**

**2**

### **DATA EXTRACTION**

**Overview of Power BI desktop**

**Data sources in Power BI**  
**Using files (excel, pdf, csv, etc.) as a data source**  
**Using SaaS connectors**  
**Extracting data from folders, and databases**  
**Working with Azure SQL database and database sources**  
**Connecting to Analysis Services**  
**Other data sources (OData, web, SharePoint etc.)**  
**Python & R script in Power BI**  
**Introduction of power query editor**  
**Advance editor**  
**Query dependency editor**

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## **DATA TRANSFORMATION – SHAPING & COMBINING DATA**

**Shaping data using Power Query Editor**  
**Formatting data**  
**Transformation of data**  
**Understanding of Data types**  
**Data profiling for data quality check**  
**Naming conventions & best practices to consider**  
**Identify and create appropriate keys for joins**  
**Working with Parameters**  
**Merge Query**  
**Append Query**

**Group by of data (aggregation of data)**

**Applied steps (query settings)**

**Duplicate & Reference tables**

**Transpose of data**

**Fill**

**Pivot & Un-pivot of data**

**Custom columns**

**Conditional columns**

**Replace data from the tables**

**Split columns values**

**Move columns & sorting of data**

**Detect data type, count rows & reverse rows**

**Promote rows as column headers**

**Hierarchies in Power BI**

**M query**

**4**

## **DATA MODELLING & DAX**

**Introduction of relationships**

**Creating relationships**

**Cardinality**

**Cross filter direction**

**Use of inactive relationships**

**Introduction of DAX**

**Why DAX is used**

**DAX syntax**

DAX functions  
Context in DAX  
Calculated columns using DAX  
Measures using DAX  
Calculated tables using DAX  
Learning about table, information, logical, text, iterator,  
Time intelligence functions (YTD, QTD, MTD)  
Cumulative values, calculated tables, and ranking and  
rank over groups  
Date and time functions  
identify poorly performing measures, relationships,  
and visuals  
DAX advanced features

5

## DATA VISUALIZATION WITH ANALYTICS

Deep dive into Power BI data visualization  
Understanding Power View and Power Map  
Data visualization techniques  
Page layout & Formatting  
Power BI Desktop visualization  
Formatting and customizing visuals  
Visualization interaction  
Custom visualization in Power BI  
Top-down and bottom-up analytics  
Drill down

**Multi Field Aggregations and Hierarchies in Power BI  
DRILLDOWN, SHOWNEXTLEVEL, EXPANDTONEXTLEVEL  
SEE DATA and SEE RECORDS Options. Differences**

**Toggle Options with Tabular Data. Filters**

**Drilldown Buttons and Mouse Hover Options @ Visuals**

**Dependant Aggregations, Independant Aggregations**

**Automated Records Selection with Tabular Data**

**Report Parameters : Creation and Data Type**

**Available Values and Default values. Member Values**

**Parameters for Column Data and Table / Query Filters**

**Parameters Creation - Query Mode, UI Option**

**Linking Parameters to Query Columns - Options**

**Edit Query Options and Parameter Manage Entries**

**Connection Parameters and Dynamic Data Sources**

**Synonyms - Creation and Usage Options**

## **POWER QUERY & M LANGUAGE - Part 1**

**Understanding Power Query Editor - Options**

**Power BI Interface and Query / Dataset Edits**

**Working with Empty Tables and Load / Edits**

**Empty Table Names and Header Row Promotions**

**Undo Headers Options. Blank Columns Detection**

**Data Imports and Query Marking in Query Editor**

**JSON Files & Binary Formats with Power Query**

Getting to understand Power BI Desktop settings  
Aggregating data from multiple data sources  
Power BI Service settings  
Power BI Admin Portal  
Administration activities  
Power BI usage analysis  
Introduction of Office 365 admin activities  
Introduction of Data Gateway  
Installation & Configuration of data gateways  
Scheduling auto data refresh  
Managing groups, row-level security, datasets, reports, and dashboards  
Real time data analysis using Direct Connectivity  
Direct Query vs Import Mode

7

## POWER BI ADVANCE & POWER BI PREMIUM

Introduction of Power BI Premium  
Power BI Premium per user  
Power BI Premium features  
Introduction to Data Flow  
Create Data Flow  
Advantages of Data Flow  
Create reports using Data Flow  
Introduction to Power BI Deployment Pipelines



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