



Introduction to PowerBI

Power BI is a Business Intelligence and Data Visualization program which allows users to transform data from a variety of sources into interactive dashboards and analytical reports. Power BI is a cloud-based application that enables interactive visualisations and a graphical user interface for building bespoke reports and dashboards.

Power BI is available in a variety of forms, including desktop, service-based (SaaS), and mobile apps.

In this Power BI training, you will study all of the critical ideas of Power BI and gain a firm grasp on how to use the tool.

Why should you use Power BI?

The following are the most prevalent uses of the Power BI tool:

- Dashboards and reports for SaaS solutions that have been pre-built
- Real-time dashboard updates are possible with Power BI.
- Offers Secure and dependable connection to your cloud or on-premises data sources
- Quick deployment, hybrid configuration, and a secure environment are all features of Power BI.
- Allows for data discovery through the use of natural language queries
- Provides a dashboard visualization feature that is continuously updated by the community.

Sources of data for Power BI

Excel (.xlsx, xlsm)

A workbook may contain data that is either manually input or queried and imported from other data sources.

Comma Separated Value (.csv)

Files are plain text files that contain rows of data. Each row may have one or more values denoted by a comma.



Power BI Desktop (.pbi)

You can query and load data from external data sources using Power BI Desktop.

Cloud-based databases

It enables live connectivity to Azure SQL Database, Azure SQL Data Warehouse, and other Azure SQL services.

Databases on-premises

You can connect directly to SQL Server Analysis Services database tables that contain relational models. It is necessary to have a Power BI Enterprise Gateway.

Power BI jargon

Visualization

A visual representation of data used to accomplish one or more goals. It displays information on a single screen. It notifies users about potential faults or concerns—operational, performance-related, and personal, among others.

Datasets

A dataset is a collection of data that you may import or connect to. Datasets can be renamed, renewed, deleted, and accessed in a variety of ways.

Dashboard

The dashboard is a collection of zero or more tiles and widgets. It is used to portray a subset of the underlying datasets in a customized view.

Reports

A Power BI report is a collection of visualizations on one or more pages. It can be built from the ground up, loaded into a dashboard, or made using datasets.

Tile

It is a single visualization that can be found in a report or on a rectangular dashboard box containing all the visuals.



Architecture of PowerBI

Data Integration:

Extract data from a multitude of sources, which may include several servers or databases. An organization must work with data that originates from various sources and is stored in a variety of file formats. Consolidated data is stored in a centralized staging location in a single standard format.

Data Processing:

At this level, the integrated data has not been processed and is therefore not ready for visualization. This data has been processed in advance. For instance, redundant and missing values will be removed from the data collection.

When the data is cleaned, the business rule should be applied to it. You can then re-import that data into the Data Warehouse.

Data Presentation

Once the data has been loaded and processed, it may be viewed considerably more effectively using Power BI's numerous visualization tools. The use of dashboards and reports enables a more intuitive representation of data. This visual report enables business end-users to make informed business decisions.

Who makes use of Power BI?

Here is an example of significant professionals who make use of the Power BI tool:

- PMO – Project and Portfolio Manager
- Business & Data Analyst
- Developer & Database Administrator
- IT Team, IT Professional
- Consumer for End User Report
- PMO – Project and Portfolio Manager

The Benefits of Power BI

- Provides pre-configured dashboards and reporting for SaaS applications.
- Update the dashboard in real-time.

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- Secure and dependable connection to your cloud or on-premises data sources
- Quick deployment, hybrid configuration, and a safe environment are all features of Power BI.
- Exploration of data using natural language queries.
- Visualization feature for the dashboard
- New features are constantly being added that are beneficial to excel users.
- Capabilities for extensive database connectivity The Q&A section is published on the web.
- Integration of visuals with Python and R coding.
- Power Query includes a plethora of tools for manipulating and cleaning data.
- After publishing data to Power BI, the web service can automatically refresh the data without manual intervention.
- Power BI is backed by the superpower of AI and machine learning.

Disadvantages of Power BI

- Dashboards and reports are only accessible to users that share an email domain.
- Power BI will not combine imported and real-time data.
- Power BI does not accept files more than 250 MB or zip files containing data from the X-velocity in-memory database.
- Power BI cannot handle files larger than 1 GB in size.
- Dashboards never accept or transmit parameters associated with users, accounts, or other entities.
- There are a minimal number of data sources that provide real-time connectivity to Power BI reports and dashboards.

Summary

- Company intelligence enables the analysis of data and the provision of actionable information that enables corporate executives and business managers to make sound business decisions.
- Power BI is a business intelligence and data visualization application that enables you to convert data from various sources to a single format.
- Several critical Power BI tools include 1) Power BI Desktop 2) Power BI service. 3) Data Gateway for Power BI 4) Microsoft Power BI Reporting Server 5) Microsoft Power BI Mobile Apps
- Excel (.xlsx,.xlsm), Comma Separated Value (.csv), Power BI Desktop (.pbi), Cloud-based databases, and on-premises databases are all common data sources in Power BI.



- Visualization, Datasets, Dashboard, Reports, and Tile, are all critical terms in a Power BI environment.
- Ruler and Diers Netz, members of Microsoft's SQL server coverage services team, came up with the idea for Power BI.
- Power BI's design consists of three critical components: 1) Data Integration, 2) Data Processing 3) Data Presentation.
- Power Query, Power Pivot, Power View, Power Map, Power BI Service, Power BI Q&A, Data Management Gateway, and Data Catalog all contribute to the Power BI Dashboard's functionality.