

1. What is Power BI?

Power BI is a **business analytics** tool developed by Microsoft that allows users to:

- Visualize data through interactive dashboards and reports,
- Connect to a wide range of data sources, like excel, SQL and etc
- Transform raw data into actionable insights that are really essential to decide in companies or sectors

2. Three Main Components of Power BI:

1. Power BI Desktop
A free application for PC and laptops used to create reports and data models, dashboards
2. Power BI Service (Power BI Online)
A cloud-based service used to share, publish, and collaborate on dashboards and reports. And decision makers can observe the needed data live
3. Power BI Mobile
Mobile apps (for iOS and Android) to view and interact with reports on the go. In order to show the work of Power BI desktop via mobile phones
- 4.

3. Two Business Use Cases for Power BI Dashboards:

1. Sales Performance Monitoring:

Visualize monthly/quarterly revenue, sales by product/region, and sales targets vs actuals. Helps sales managers make quick decisions and identify underperforming areas.

2. Financial Reporting:

Track key financial KPIs like profit margins, cash flow, and expenses. Enables CFOs to evaluate company health and make budgeting decisions.

4. How to Download and Install Power BI Desktop:

Option 1: From Microsoft Store (Recommended)---Because Power BI updates very quickly, new options and functions can be added every single update then if we download it via store it is updated automatically.

Option 2: From Websites

5. What is the difference between Power BI Desktop and Power BI Service?

Power BI Desktop is a free Windows application used to create reports, data models, and visualizations. It is mainly used for designing and developing reports. Reports created in Desktop can be saved as a file and published later.

Power BI Service, on the other hand, is an online (cloud-based) platform used to share, view, and collaborate on reports and dashboards. It allows users to access reports from anywhere, schedule data refreshes, and collaborate with others in real time.

6. [Filename].pbix

- Primary file format for Power BI Desktop.
- Contains data model, queries, visualizations, and report layouts

.pbit (Power BI Template)

- Used to create a **template** of a Power BI report **without the data**.
- Useful for sharing report structure and queries, while letting others import their own data.

Explain the role of Power Query in Power BI.

- Power Query is the tool within Power BI used for data loading and transformation. It allows users to connect to various data sources, clean and reshape the data, and then load it into the data model for analysis. Power Query is highly user-friendly and provides a no-code interface, although it uses a language called M behind the scenes. Its main role is to prepare the data before visualization.

Why would a business prefer Power BI over Excel for reporting?

- Businesses may prefer Power BI over Excel because Power BI provides real-time, interactive dashboards that can handle larger datasets more efficiently. Power BI allows for better automation, scheduled data refreshes, and secure sharing of reports. Additionally, its visualization capabilities are much more powerful and user-friendly than Excel, making it easier to derive insights quickly.

Describe one limitation of the free version of Power BI.

- One key limitation of the free version of Power BI is that users cannot share reports or dashboards with others through the Power BI Service. Sharing and collaboration features are only available with a Power BI Pro or Premium license. So, while you can create reports in the free version, you're limited to personal use unless you upgrade.

What is a "published report" in Power BI Service?

A **published report** in Power BI Service is a report that has been created in Power BI Desktop and then uploaded (published) to the **Power BI cloud platform**. Once published, the report is stored in a workspace on Power BI Service where users can:

- Observe and monitor it online,
- Share it with other member of company
- Set up scheduled refreshes, automatically refreshing
- Embed it into websites or apps,
- Interact with visuals in real time.

How does Power BI Mobile enhance accessibility?

Power BI Mobile is a mobile application available for iOS and Android devices. It enhances accessibility by allowing users to:

- View and interact with dashboards and reports anytime, anywhere,
- Get real-time data updates on their phone or tablet,

- Receive data alerts and push notifications,
- Scan QR codes to open specific reports instantly,
- Annotate and share reports directly from the app.

Compare Power BI with Tableau — Pros and Cons

Power BI – Pros:

- Seamless integration with Microsoft tools (Excel, Azure, Teams).
- Lower cost (especially with Microsoft 365 bundles).
- Easier for beginners and Excel users.
- Built-in AI and natural language Q&A.

Power BI – Cons:

- Slightly less flexible in complex custom visualizations compared to Tableau.
- Desktop version is Windows-only.

Tableau – Pros:

- Very powerful and flexible for data visualization.
- Highly customizable dashboards and visuals.
- Strong data blending and interactivity.

Tableau – Cons:

- More expensive licensing.
- Steeper learning curve.
- Less tightly integrated with Microsoft ecosystem.

Explain how Power BI integrates with Azure services

Power BI integrates with various **Azure services** to enhance data analytics, storage, and security:

- **Azure SQL Database / Azure Synapse Analytics:**
Power BI connects directly to Azure databases to query data and build reports.
- **Azure Data Lake Storage:**
Power BI can connect to large-scale data stored in Azure for big data analytics.
- **Azure Machine Learning:**
Power BI can consume ML models built in Azure for predictive insights.
- **Azure Active Directory:**
Provides identity and access control for secure sharing of Power BI content.
- **Azure Logic Apps / Data Factory:**
Used to automate workflows and data pipelines for feeding Power BI datasets.

What are "gateways" in Power BI, and when are they needed?

Power BI Gateways are bridge services that connect **Power BI in the cloud** to **on-premises data sources** (like SQL Server, Excel files, or Oracle databases) that are not directly accessible from the cloud.

They are needed when:

- You want to **refresh** datasets in Power BI Service using **local data**.
- You need to **schedule automated refreshes** from your internal network.
- Your data resides behind a **firewall** or in a **private server**.

There are two types of gateways:

1. **Personal Gateway** – for individual use.
2. **Standard/Enterprise Gateway** – for multiple users and shared data sources.

How would you convince a company to adopt Power BI (ROI argument):

Power BI helps companies save time and money by automating reporting and providing real-time insights. Instead of spending hours creating manual reports, teams can focus on analysis and decision-making. It's cost-effective compared to other tools, integrates well with Microsoft products, and improves business performance by making data accessible and actionable.

What security features does Power BI offer for sensitive data:

Power BI offers row-level security to control data access, end-to-end encryption for data protection, integration with Azure Active Directory for secure authentication, sensitivity labels to classify and protect data, and audit logs to track user activity and ensure compliance.