

1. What is Power BI, and what are its three main components

Power BI is Microsoft's business intelligence and data visualization tool that allows users to connect to different data sources, transform raw data, and create interactive reports and dashboards for better decision-making.

The three main components of Power BI are:

1. **Power BI Desktop**

A free Windows application used to create reports and data models.

You can import, clean, transform, and visualize data.

2. **Power BI Service (Power BI Online / Cloud Service)**

A cloud-based platform where reports and dashboards are published, shared, and accessed.

Enables collaboration and real-time insights.

3. **Power BI Mobile**

A mobile app (for iOS, Android, and Windows) that allows users to view and interact with dashboards and reports on the go.

2. Name two business use cases for Power BI dashboards.

(Sales Performance Tracking)

A dashboard can show total sales, revenue by region, top-selling products, and customer trends.

Managers can quickly identify which regions are performing well and which need improvement.

(Financial Analysis & Forecasting)

Finance teams can use dashboards to monitor expenses, profit margins, and cash flow in real-time.

It helps in comparing actual vs. budgeted performance and making future financial forecasts.

3. How do you download and install Power BI Desktop?

From Microsoft Store

1. Open the **Microsoft Store** on your Windows computer.
2. Search for "**Power BI Desktop**".

3. Click Get / Install.
4. Once installed, launch it from the Start menu.

From the Official Power BI Website

- 1 Go to the official Microsoft Power BI website: <https://powerbi.microsoft.com>.
- 2 Navigate to Products > Power BI Desktop.
- 3 Click Download free (you'll be redirected to the Microsoft Store or a direct download link).
- 4 Download the installer (.exe file) and run it.
- 5 Follow the installation wizard (Next → Accept terms → Install → Finish).

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

Power BI Desktop

A Windows application (installed on your computer).

Mainly used for data connection, transformation, and report creation.

You can import, clean, and model data using Power Query and DAX.

Reports are saved as .pbix files.

Best suited for data preparation and report building.

Power BI Service (Power BI Online)

A cloud-based platform (accessed via web browser).

Used for publishing, sharing, and collaborating on reports and dashboards.

Supports real-time data refresh from cloud and online sources.

Provides features like workspaces, apps, and dashboards for team collaboration.

Best suited for sharing insights and monitoring business performance online.

5. What file extension does a Power BI project use?

PBIX stands for **Power BI eXecutable**.

It contains the data model, queries, and visualizations you build.

You can publish .pbix files from **Power BI Desktop** to the **Power BI Service** for sharing and collaboration.

6. Explain the role of Power Query in Power BI.

Power Query is a data connection and transformation tool in Power BI. It allows you to import, clean, and shape data before using it for reporting and analysis.

Role of Power Query in Power BI

1. Data Connection

Connects to various data sources (Excel, SQL Server, web, APIs, etc.).

2. Data Transformation (ETL process)

Extract → Get data from multiple sources.

Transform → Clean, filter, merge, split, and reshape data.

Load → Send the cleaned data into Power BI's data model.

3. No-code / Low-code interface

Provides an easy-to-use editor (Power Query Editor) where you can apply steps without needing to write complex code.

Behind the scenes, it generates **M language** code.

4. Reusability & Automation

Once you set up transformations, Power Query can automatically refresh data when the source updates.

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

Reasons a business would prefer Power BI over Excel:

1. Interactive Visualizations

Power BI provides dashboards with interactive charts, filters, and drill-down features. Excel charts are mostly static.

2. Real-Time Data Updates

Power BI can connect directly to live databases, APIs, and cloud sources for automatic refresh. Excel usually requires manual refresh or file uploads.

3. **Better Data Handling** Power BI can handle **millions of rows** efficiently. Excel slows down with very large datasets.
4. **Collaboration & Sharing** Reports in Power BI Service can be shared online with teams securely. Excel files are usually shared via email or shared drives, which is less efficient.
5. **Advanced Analytics** Power BI supports DAX (Data Analysis Expressions) and AI features for deeper insights. Excel formulas are powerful but less suited for large-scale reporting.
6. **Mobile Accessibility** Power BI has a mobile app to view dashboards on the go. Excel mobile use is limited for dashboards.

8. Describe one limitation of the free version of Power BI.

No Sharing & Collaboration

In the free version, you can create reports and dashboards in **Power BI Desktop** and view them in your own **Power BI Service account**, But you **cannot share** those reports with colleagues or collaborate in workspaces.

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

In **Power BI**, a **published report** refers to a report that was **created in Power BI Desktop** and then **uploaded (published) to the Power BI Service (cloud)**.

1. **Created in Desktop → Published to Service**

You build the report in **Power BI Desktop** (.pbix file).

Then, you use the **Publish** button to send it to your workspace in **Power BI Service**.

2. **Accessible Online** Once published, the report can be accessed via a web browser or Power BI Mobile.
3. **Collaboration** In the Service, you can **share the report** with colleagues, embed it into dashboards, or distribute it via Power BI Apps (if you have Pro or Premium).
4. **Automatic Data Refresh** Published reports can be linked to live or scheduled data refreshes so insights stay up to date.

10. How does Power BI Mobile enhance accessibility?

Power BI Mobile enhances accessibility by allowing users to **view, interact with, and share reports and dashboards anytime, anywhere** using their smartphones or tablets.

Ways Power BI Mobile enhances accessibility:

1. **On-the-Go Access** Users can access live dashboards and reports directly from their mobile device (iOS, Android, Windows).
2. **Real-Time Updates** Reports connected to live data sources refresh automatically, so decision-makers always see the latest information.
3. **Interactive Experience** Just like on desktop, users can filter, drill down, and explore visuals interactively on mobile.
4. **Push Notifications & Alerts** Mobile app sends alerts when data crosses thresholds (e.g., sales drop below target).
5. **Optimized for Small Screens** Reports can be designed in **phone layout mode**, ensuring visuals are easy to read and navigate on mobile.
6. **Secure Access** Uses enterprise security (Azure Active Directory, multi-factor authentication) so sensitive data is protected.

11. Compare Power BI with Tableau—pros and cons.

Power BI – Pros

Cost-effective → Cheaper licensing than Tableau, especially for small/medium businesses.

Integration with Microsoft → Works seamlessly with Excel, Azure, Teams, and other

Microsoft tools. **Ease of use** → Beginner-friendly with drag-and-drop features. **AI features** →

Includes built-in AI insights, natural language queries ("Q&A"). **Frequent updates** →

Microsoft updates Power BI monthly.

Power BI – Cons

Limited customization of visuals compared to Tableau. **Performance issues** with very large datasets (though improving with Premium). **Best for Microsoft ecosystem**; integration with non-Microsoft tools may be weaker.

12. Explain how Power BI integrates with Azure services.

Power BI + Azure = **Scalable, secure, and AI-powered analytics**.

Azure stores, processes, and analyzes large/real-time data.

Power BI visualizes and shares insights from that data.

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

A **Power BI Gateway** is a **bridge** that connects **on-premises data sources** (like SQL Server, Oracle, SAP, or file servers) to **Power BI Service (cloud)** securely. Instead of moving your data to the cloud, a gateway lets Power BI access it **on demand** while keeping it in your local network.

14. How would you convince a company to adopt Power BI? (ROI argument)

Power BI = Lower cost + faster reporting + better decisions = strong ROI.

15. What security features does Power BI offer for sensitive data?

Power BI secures sensitive data with **identity control, encryption, row-level filtering, compliance tools, and monitoring**—making it suitable even for regulated industries like finance and healthcare.