

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

Power BI is Microsoft's business intelligence and data visualization tool that helps you connect to multiple data sources, transform data, and create interactive reports and dashboards.

Three main components:

- **Power BI Desktop** – Windows application for designing and building reports.
 - **Power BI Service** – Cloud platform for sharing, collaboration, and distribution of reports.
 - **Power BI Mobile** – Mobile app to view and interact with reports on phones/tablets.
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2. Name two business use cases for Power BI dashboards.

- **Sales performance tracking** – Monitor revenue, top-selling products, and regional performance in real time.
 - **Project management KPIs** – Track timelines, budgets, and resource allocation across multiple projects.
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3. How do you download and install Power BI Desktop?

1. Go to <https://powerbi.microsoft.com/desktop> or search for it in the Microsoft Store.
 2. Download the installer (from Microsoft Store or .msi file).
 3. Run the installer and follow the setup prompts.
 4. Launch Power BI Desktop from Start Menu.
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4. What is the difference between Power BI Desktop and Power BI Service?

Feature	Power BI Desktop (Local)	Power BI Service (Cloud)
Purpose	Create and design reports	Share, collaborate, and view reports
Access	Installed on Windows PC	Web browser or mobile app
Cost	Free	Free (limited) or Pro/Premium subscription
Data refresh	Manual	Scheduled refresh

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

.pbix – Power BI report file created in Power BI Desktop.

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

Power Query is the data transformation and preparation tool inside Power BI. It allows you to connect to various data sources, clean, merge, pivot, and shape the data **before** loading it into the data model.

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

- **Better visualizations** – Interactive dashboards vs. static charts.
 - **Automated refresh** – No manual updates needed.
 - **Cloud sharing & collaboration** – Access from anywhere.
 - **Data modeling** – Handles larger datasets with relationships.
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8. Describe one limitation of the free version of Power BI.

The free version **cannot share reports and dashboards** with other users via the Power BI Service — sharing requires a Pro or Premium license.

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

A report created in Power BI Desktop and uploaded (published) to Power BI Service, where it can be shared, viewed online, and refreshed automatically.

10. How does Power BI Mobile enhance accessibility?

It allows users to **view and interact** with dashboards and reports anywhere via iOS/Android devices, supporting touch-friendly navigation and real-time updates.

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

Criteria	Power BI	Tableau
Cost	Cheaper, especially with Microsoft ecosystem	More expensive, enterprise-level pricing
Ease of Use	Easier for beginners, integrates with Excel	Steeper learning curve but more advanced visualization customization
Data Handling	Good for small to mid-size datasets	Handles large datasets more efficiently
Integration	Seamless with Microsoft tools & Azure	Broad integration with multiple platforms
Community	Growing, but smaller than Tableau's	Large, active global community

12. Explain how Power BI integrates with Azure services.

- **Azure SQL Database** – Direct connection for live data.
 - **Azure Data Lake** – Store and analyze large datasets.
 - **Azure Machine Learning** – Embed AI predictions in reports.
 - **Azure Synapse Analytics** – Connect to big data warehouses for analytics.
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13. What are "gateways" in Power BI, and when are they needed?

A **Power BI Gateway** is a bridge between on-premises data sources and the Power BI Service.
Needed when:

- You want to refresh reports automatically from local databases/files without manually uploading data.
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14. How would you convince a company to adopt Power BI? (ROI argument)

- **Lower costs** than many BI tools.
 - **Faster decision-making** through real-time dashboards.
 - **Integration** with existing Microsoft tools (Office 365, Teams).
 - **Self-service analytics** reduces dependency on IT teams.
 - **Scalability** from small teams to enterprise level.
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15. What security features does Power BI offer for sensitive data?

- **Row-Level Security (RLS)** – Restrict data by user role.
- **Data encryption** – At rest and in transit.
- **Microsoft compliance certifications** – GDPR, ISO, SOC.
- **Workspaces & access control** – Granular permission settings.