

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

Power BI is a Microsoft business analytics tool that enables users to visualize data and share insights across an organization.

Three main components:

- **Power BI Desktop** – Authoring and data modeling tool (installed locally)
 - **Power BI Service** – Cloud-based platform to publish, share, and collaborate on reports
 - **Power BI Mobile** – App to view and interact with reports on mobile devices
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2. Name two business use cases for Power BI dashboards.

- **Sales performance tracking** – Monitor targets, conversions, and revenue by region or rep
 - **Customer support analytics** – Visualize ticket resolution times, satisfaction scores, and agent workload
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3. How do you download and install Power BI Desktop?

- Go to the official Microsoft site: <https://powerbi.microsoft.com/desktop>
- Click “**Download**”
- Run the installer and follow on-screen instructions

Alternatively, install via Microsoft Store on Windows.

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

Feature	Power BI Desktop	Power BI Service
Install	Installed app (Windows only)	Cloud-based (web)
Use	Build and model reports	Share, schedule, collaborate
Data refresh	Manual or limited	Supports automatic/scheduled refresh
Licensing	Free	Requires Pro or Premium for sharing

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

- **.pbix** — Power BI Desktop file
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6. Explain the role of Power Query in Power BI.

Power Query is the data transformation and preparation engine in Power BI. It allows users to:

- Connect to data sources
 - Clean, reshape, and transform data using a user-friendly interface or M code
 - Create reusable queries before loading data into the model
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7. Why would a business prefer Power BI over Excel for reporting?

- **Interactive dashboards**
 - **Automated data refreshes**
 - **Scalability for large datasets**
 - **Real-time analytics**
 - **Better sharing and collaboration** via the cloud
 - **Row-level security** and governance features
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8. Describe one limitation of the free version of Power BI.

- Cannot **share reports or dashboards** with others in the Power BI Service — sharing requires a **Power BI Pro license**.
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9. What is a "published report" in Power BI Service?

A **published report** is a Power BI Desktop report (.pbix) uploaded to the Power BI Service, where it can be:

- Shared with users
 - Embedded in apps
 - Refreshed automatically
 - Used to create dashboards
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10. How does Power BI Mobile enhance accessibility?

- Provides **on-the-go access** to dashboards and reports
 - Offers **interactive visuals, notifications, and filters**
 - Works across iOS and Android
 - Supports **QR codes** for quick access to specific reports
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11. Compare Power BI with Tableau — pros and cons.

Aspect	Power BI	Tableau
Cost	Lower (especially with Microsoft licensing)	Higher, especially for enterprise
Integration	Seamless with Microsoft 365, Azure	Broad, but less integrated with Microsoft
Learning Curve	Easier for Excel users	Steeper, more control for analysts
Community	Large and growing	Strong analytics-focused community
Custom Visuals	Good, growing library	Very flexible and rich visuals

12. Explain how Power BI integrates with Azure services.

- **Azure SQL Database / Synapse Analytics** – Direct data connectivity
 - **Azure Data Lake** – Storage and advanced analytics
 - **Azure Machine Learning** – Embed predictive models into reports
 - **Azure Active Directory (AAD)** – Manages authentication and permissions
 - **Azure Blob Storage** – For data archival or flat-file input
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13. What are "gateways" in Power BI, and when are they needed?

- **Gateways** allow Power BI Service to access **on-premises data** (e.g., SQL Server, file shares).
 - Needed when:
 - The data source isn't in the cloud
 - You want to **schedule refreshes** from local systems
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14. How would you convince a company to adopt Power BI? (ROI argument)

"Power BI significantly reduces reporting time, increases visibility into KPIs, and enhances decision-making through real-time dashboards. Its low total cost of ownership (especially if already using Microsoft 365) and built-in AI tools drive a high ROI through better forecasting, resource planning, and faster insights."

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

- **Row-level security (RLS)** to control user access to specific data
- **Azure Active Directory (AAD)** integration for authentication
- **Data encryption** (in transit and at rest)
- **Microsoft Information Protection (MIP)** sensitivity labels
- **Audit logs** and **data loss prevention (DLP)** policies