

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

Power BI is a business analytics tool by Microsoft that transforms raw data into interactive insights through visualizations, dashboards, and reports.

Three main components:

- **Power BI Desktop:** Build interactive reports.
- **Power BI Service:** Share and manage reports online.
- **Power BI Report Builder:** Create paginated, printable reports.

Name two business use cases for Power BI dashboards.

1. **Sales Performance Dashboard** — Track sales metrics, KPIs, and regional trends in real time.
2. **Financial Management Dashboard** — Monitor cash flow, revenue, expenses, and profitability across business units.

How do you download and install Power BI Desktop?

- Go to the official site: <https://powerbi.microsoft.com/desktop>
- Click **Download free**
- Install via Microsoft Store or download the .msi installer.
- Follow the installation wizard steps.

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

Feature	Power BI Desktop	Power BI Service
Usage	Report creation and data modeling	Report sharing, collaboration, and dashboards
Installation	Installed locally on Windows	Cloud-based, accessed via browser
Cost	Free	Free & Paid (Pro, Premium) versions

What file extension does a Power BI project use?

.pbix — Power BI Desktop file.

Explain the role of Power Query in Power BI.

Power Query is a data connection and transformation tool in Power BI. It allows users to:

- Connect to various data sources.
- Clean, transform, and shape data using a GUI.
- Load transformed data into the data model for analysis.

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

- **Interactive dashboards and real-time data refresh.**
- **Cloud-based sharing and collaboration.**
- **Advanced visualizations and AI-driven analytics.**
- **Centralized data governance and security.**

Describe one limitation of the free version of Power BI.

- **Cannot share reports or dashboards with others via the Power BI Service** — requires a Power BI Pro license.

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

A **published report** is a Power BI Desktop (.pbix) report uploaded to the Power BI Service for viewing, sharing, and collaboration through the web platform.

How does Power BI Mobile enhance accessibility?

- Access dashboards and reports on smartphones and tablets.
- Get push notifications for alerts.
- View and interact with live, updated data anytime, anywhere.

Compare Power BI with Tableau — pros and cons.

Feature	Power BI	Tableau
Ease of use	User-friendly, especially for Excel users	Slightly steeper learning curve
Cost	More affordable, integrates with Microsoft 365	More expensive
Visualizations	Strong, growing library	Industry-leading visuals
Integration	Tight integration with Microsoft ecosystem	Good cross-platform support
AI features	Built-in AI visuals (Q&A, Decomposition tree)	Limited without add-ons

Explain how Power BI integrates with Azure services.

Power BI integrates directly with Azure services like:

- **Azure SQL Database**
- **Azure Synapse Analytics**
- **Azure Data Lake**
- **Azure Machine Learning** (for embedding ML models)
- Enables cloud-scale analytics and real-time data processing.

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

Gateways are bridge services that enable secure data transfer between on-premises data sources and the Power BI Service.

Used when:

- Data is hosted in on-premises databases (SQL Server, Oracle, etc.) and you need to refresh/report it on Power BI Service.

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

- **Faster decision-making** via real-time dashboards.
- **Lower reporting costs** by reducing manual reporting.
- **Improved data-driven culture** with accessible, self-service analytics.
- **Higher productivity** through automated data refresh and report scheduling.
- **Affordable licensing** compared to competitors like Tableau.

What security features does Power BI offer for sensitive data?

- **Row-level security (RLS)** — restricts data access based on user roles.
- **Data encryption at rest and in transit.**
- **Microsoft Azure Active Directory (AAD)** integration for authentication.
- **Audit logs and compliance certifications** (GDPR, ISO 27001, etc.)