

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

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

Three main components:

- Power BI Desktop: A Windows application for creating reports.
- Power BI Service: An online SaaS (Software as a Service) platform for sharing and collaboration.
- Power BI Mobile: Apps for accessing reports and dashboards on mobile devices.

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

- Sales Performance Monitoring: Track KPIs like revenue, top-selling products, and regional performance.
- Financial Reporting: Visualize monthly expenses, budgets, and profitability trends.

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

1. Go to <https://powerbi.microsoft.com/>
2. Click on "Products" > "Power BI Desktop".
3. Download it from the Microsoft Store or as a standalone .exe file.
4. Run the installer and follow the setup instructions.

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

Power BI Desktop:

- Use Case: Report creation and data modeling
- Platform: Windows only
- Sharing: Not directly possible

Power BI Service:

- Use Case: Report sharing, collaboration, and online access
- Platform: Cloud-based (Web)
- Sharing: Publish, schedule, and collaborate

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

.pbix

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

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

- Connect to various data sources (Excel, SQL, Web, etc.)
- Clean, reshape, and transform data before loading into Power BI
- Automate data refreshes and ETL processes

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

- Interactive Dashboards: Real-time visuals and slicers
- Data Volume: Handles larger datasets than Excel
- Automation: Scheduled refresh and live connections
- Collaboration: Web-based sharing and commenting

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

You cannot share reports or dashboards with others in the Power BI Service without a Pro license.

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

A published report is a .pbix file uploaded from Power BI Desktop to the Power BI Service, where it can be shared, scheduled for refresh, and viewed online.

10. How does Power BI Mobile enhance accessibility?

Power BI Mobile allows users to:

- Access real-time dashboards and reports on-the-go
- Receive push notifications
- Interact with visuals and use natural language queries

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

Power BI:

Pros: Lower cost, strong Microsoft integration, easy learning curve

Cons: Limited customization, less flexible in visuals

Tableau:

Pros: Advanced visualizations, better for complex data blending

Cons: More expensive, steeper learning curve

12. Explain how Power BI integrates with Azure services.

Power BI integrates with:

- Azure SQL Database & Synapse: Real-time data connection
- Azure Active Directory: User authentication and security
- Azure Machine Learning: Predictive analytics in Power BI visuals
- Azure Blob Storage/Data Lake: Data ingestion and large-scale storage

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

Data gateways are bridges between on-premises data sources and the Power BI Service.

Used when:

- Connecting to local databases (SQL, Excel, etc.)
- You want scheduled refresh or live connection from cloud to on-prem sources

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

- Reduce manual reporting time by 50–80%, saving labor costs
- Data-driven decisions improve performance (e.g., boost sales or cut expenses)
- Self-service analytics reduce IT dependency
- Low cost of entry with high scalability
- Faster time to insight compared to traditional reporting

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

- Row-Level Security (RLS): Restrict data access by user role
- Azure Active Directory integration: User authentication
- Data encryption (at rest and in transit)
- Microsoft Defender for Cloud Apps: Threat detection and monitoring
- Audit logs and usage metrics