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

Power BI is Microsoft's **business intelligence (BI) and data visualization platform** used to connect to various data sources, clean/transform data, and build interactive reports/dashboards for decision-making.
Three main components:

1. **Power BI Desktop** – Windows application for building and designing reports.
2. **Power BI Service (Cloud)** – Online platform for publishing, sharing, and collaborating on reports.
3. **Power BI Mobile** – Mobile apps for viewing dashboards on the go (iOS, Android, Windows).

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2. Two business use cases for Power BI dashboards

- **Retail Sales Monitoring** – Track store sales, inventory, and customer purchase patterns in real-time.
- **Financial KPI Reporting** – Visualize revenue, profit margins, expenses, and cash flow for executives.

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3. How to download and install Power BI Desktop

1. Go to the Microsoft Power BI Desktop download page.
2. Choose either **Microsoft Store** (auto-updates) or direct .msi download.
3. Install using the setup wizard.
4. Launch and sign in with a Microsoft or work account.

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4. Difference between Power BI Desktop and Power BI Service

Feature	Power BI Desktop	Power BI Service
Purpose	Create & design reports	Share, view, and collaborate on reports
Storage	Local .pbix files	Cloud storage
Cost	Free	Free (limited) or Pro/Premium (advanced sharing)
Connectivity	Full access to all transformations	Limited editing, mostly viewing

5. Power BI project file extension

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

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6. Role of Power Query in Power BI

Power Query is the **data connection and transformation tool** in Power BI. It lets you:

- Connect to multiple data sources
- Clean, reshape, and merge data
- Apply transformations using the **M language**
- Automate refreshes without manual steps

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7. Why prefer Power BI over Excel for reporting?

- **Better visualization** (interactive charts, maps, slicers)
- **Automated data refreshes** from live sources
- **Centralized sharing** with cloud access
- **Row-level security** for sensitive data
- **Scalability** – handles larger datasets faster than Excel

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8. One limitation of the free version of Power BI

- **No sharing of reports with others** – Free users can only view their own reports locally or in the service, not collaborate in real time.

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

A report created in Power BI Desktop and **uploaded to the Power BI Service** so others in the organization can view, interact with, and collaborate on it.

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10. How does Power BI Mobile enhance accessibility?

- Access dashboards anywhere, anytime
- Real-time updates and push notifications
- Touch-friendly navigation for quick insights during meetings or travel

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11. Power BI vs Tableau — Pros & Cons

Factor	Power BI	Tableau
Cost	Cheaper, free Desktop version	More expensive licensing
Integration	Best with Microsoft ecosystem (Excel, Azure)	Works well across many platforms
Ease of Use	Easier for beginners	More advanced for complex analytics
Visualizations	Very good, but slightly fewer options	Extremely rich visual capabilities
Deployment	Cloud + on-prem	Cloud + on-prem

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12. Power BI integration with Azure

- **Azure SQL Database** – live connections
- **Azure Synapse Analytics** – big data warehousing
- **Azure Machine Learning** – predictive analytics inside Power BI
- **Azure Data Lake** – scalable storage for large datasets

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

A **gateway** is software that allows Power BI Service to securely connect to **on-premises data sources**.

- Needed when your data is stored locally (SQL Server, files, etc.) but you want cloud reports with live or scheduled refreshes.

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14. Convincing a company to adopt Power BI (ROI argument)

- **Lower costs** vs. traditional BI tools
- **Faster insights** with real-time dashboards
- **Better decision-making** through data-driven culture
- **Increased productivity** – no manual report preparation
- **Scalable** – works for small teams and large enterprises

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15. Security features for sensitive data in Power BI

- **Row-Level Security (RLS)** – restricts data per user role
- **Data encryption** – at rest and in transit
- **Azure Active Directory (AAD) integration** – secure authentication
- **Sensitivity labels** – classify and protect sensitive data
- **Audit logs** – track who accessed what and when