Basic Introduction Questions on power BI

1. What is power bi?

Power BI is a business intelligence and data visualization tool developed by Microsoft.

It helps individuals and organizations collect, transform, analyze, and visualize data from multiple sources to make better decisions.

🔑 **Key Features of Power BI:**

- **Data Connectivity** – Connects to various data sources (Excel, SQL, cloud apps like Google Analytics, Salesforce, etc.).
- **Data Transformation** – Clean and shape raw data using Power Query.
- **Data Modeling** – Create relationships between tables, add calculated columns and measures using DAX (Data Analysis Expressions).
- **Visualization** – Build interactive **dashboards, charts, maps, and reports**.
- **Sharing & Collaboration** – Publish reports to the **Power BI Service** for web/mobile access and share with teams.
- **AI & Insights** – Includes AI features like natural language queries ("Ask a Question") and predictive analytics.

2. Who developed power bi?

Power BI was developed by Microsoft.

- Originally, it started as an internal project by a group of Microsoft engineers named Amir Netz and Thierry D'Hers (from the SQL Server Reporting Services team).
- It was first released to the public in 2011 as part of Project Crescent, later renamed Power BI in 2013, and officially launched as a standalone product in 2015**.**

3. Why do we use power bi?

We use Power BI because it helps turn raw data into meaningful insights in a simple and interactive way.

❖ **Main Reasons Why We Use Power BI:**

1. **Data Visualization** – Create beautiful, interactive dashboards and charts instead of just tables of numbers.
2. **Better Decision Making** – Quickly spot trends, patterns, and KPIs to make informed business decisions.
3. **Data Integration** – Connects to 100+ data sources (Excel, SQL, Google Analytics, Salesforce, etc.) in one place.

4. **Time-Saving** – Automates data refresh and reporting, so you don't have to manually prepare reports every day.
5. **Collaboration & Sharing** – Share reports easily with your team through the Power BI Service (web and mobile).
6. **Self-Service Analytics** – Even non-technical users can explore data with drag-and-drop and natural language queries ("Ask a Question").
7. **Cost-Effective** – Provides powerful analytics at a lower cost compared to many other BI tools.
8. **AI & Predictive Insights** – Has built-in AI features for forecasting, clustering, and identifying key influencers.

4. What are the main components of power bi?

❖ **Main Components of Power BI**

1. **Power BI Desktop**
   - A free Windows application.
   - Used by developers/analysts to connect, clean, model, and visualize data.
   - You build reports and dashboards here first.
2. **Power BI Service (Power BI Online)**
   - A cloud-based platform (app.powerbi.com).
   - Used to publish, share**,** and collaborate on reports and dashboards.
   - Supports scheduled data refresh and real-time dashboards.
3. **Power BI Mobile Apps**
   - Apps for Android and iOS.
   - View and interact with reports on the go.
4. **Power BI Gateway**
   - A bridge between on-premises data sources (like SQL Server, Excel on local systems) and the Power BI Service.
   - Ensures secure data refresh.
5. **Power BI Report Server**
   - An **on-premises solution** for companies that cannot use cloud due to data security rules.
   - Hosts and manages reports locally.
6. **Power BI Embedded**
   - A service for developers.
   - Allows embedding Power BI dashboards and reports into custom applications.

5. what is power bi desktop?

Power BI Desktop is a free Windows application you install on your computer to create reports and dashboards**.**

It is the main tool that analysts and developers use to connect data, clean it, model it, and build visualizations before publishing them to the Power BI Service (cloud)**.**

6. **What is the service?**

   Power BI Service is the cloud-based (online) platform of Power BI, hosted onIt is mainly used for publishing, sharing, and collaborating on reports and dashboards that you (or others) create in Power BI Desktop**.**

7. **What is the power bi mobile?**

   Power BI Mobile is the mobile application of Power BI that allows you to view and interact with reports and dashboards on your smartphone or tablet**.**

8. **What is the difference between power bi desktop and power bi service?**

Feature	**Power BI Desktop**	**Power BI Service**
Type	Application (installed on Windows PC)	Cloud-based platform (app.powerbi.com)
Purpose	Used to create, design, and build reports and dashboards	Used to publish, share, and collaborate on reports and dashboards
Data Sources	Connects to 100+ data sources (Excel, SQL, APIs, etc.)	Uses data models already built in Desktop or from cloud services
Data Transformation	Yes, via Power Query	Limited (mostly viewing, not deep transformation)
Modeling	Create relationships, measures, and DAX calculations	Can use models but not build complex ones
Visualizations	Full control to design and customize visuals	View, interact, and share existing visuals
Offline/Online	Works offline on PC	Works online in the browser/mobile
Collaboration	Not possible directly	Easy sharing, collaboration, and team access
Cost	Free	Requires Power BI Pro / Premium license for full sharing features

9. **What are the key features of power bi?**

Key Features of Power BI

1. **Data Connectivity**
   - Connects to 100+ data sources (Excel, SQL Server, Google Analytics, Salesforce, SharePoint, etc.).
2. **Data Transformation (ETL)**
   - Clean and shape raw data easily using Power Query.

3. **Data Modeling**
    - Build relationships between tables.
    - Use DAX (Data Analysis Expressions) for advanced calculations.
4. **Interactive Visualizations**
    - Create rich charts, maps, KPIs, and dashboards with drag-and-drop.
    - Use slicers, filters, and drill-downs for deeper insights.
5. **Dashboards & Reports**
    - Design multi-page reports in Power BI Desktop.
    - Combine visuals into interactive dashboards in Power BI Service.

10. What types of data sources can power bi connect to?

Types of Data Sources Power BI Can Connect To:

1. **File Sources**
    - Excel (.xlsx, .xls)
    - CSV / Text files
    - XML, JSON
    - PDF
2. **Database Sources**
    - SQL Server
    - Oracle Database
    - MySQL
    - PostgreSQL
    - IBM DB2
    - Snowflake, Teradata, etc.
3. **Online Services (Cloud Sources)**
    - Microsoft Azure (SQL Database, Blob Storage, Data Lake, Synapse, etc.)
    - Google Analytics
    - Salesforce
    - SharePoint Online
    - GitHub, Mailchimp, etc.
4. **Power Platform Sources**
    - Power BI Datasets
    - Power BI Dataflows
    - Dataverse (Common Data Service)
5. **Other Sources**
    - OData Feed
    - Web Pages (scraping data from a URL)
    - R and Python scripts (for advanced analytics)
    - APIs (REST APIs and custom connectors)
6. **Real-Time / Streaming Data**
    - IoT devices
    - Azure Stream Analytics
    - Pub Nub, and other streaming sources

11. What is a visualization in power bi?

A visualization in Power BI is simply a graphical representation of data**.** It's the way Power BI shows data in charts, graphs, maps, tables, KPIs, etc. so that users can easily understand trends, comparisons, and insights.