

Power Bi Assignments

1) What is Power BI and how does it differ from Excel?

Ans

Power BI is a Business Intelligence (BI) tool used for data visualization, reporting, and dashboard creation.

Microsoft Excel is a spreadsheet software used to store, organize, calculate, and analyze data using tables, formulas, and charts.

Excel	Power BI
Spreadsheet tool	BI & analytics tool
Best for small datasets	Handles large datasets efficiently
Static charts	Interactive dashboards
Manual analysis	Automated refresh & modeling

2) Explain the concept of data modeling in Power BI.

Ans

Data modeling is the process of connecting multiple tables using relationships to create a structured data model. It allows users to analyze data from different sources together.

Example:

Sales Table → Customer Table → Product Table (connected via keys)

3) What are the different types of connections available in Power BI?

Ans

- **Import** – Data is loaded into Power BI.
- **DirectQuery** – Data stays in the source; queries run live.
- **Live Connection** – Connects to Analysis Services models.
- **Composite Model** – Combination of Import and DirectQuery.

4) How do you handle data transformation in Power BI?

Ans

Data transformation is done using **Power Query Editor**. Tasks include:

- Removing null values
- Changing data types
- Splitting or merging columns
- Filtering rows

5) What is DAX (Data Analysis Expressions) and why is it important in Power BI?

Ans

DAX (Data Analysis Expressions) is a formula language used in Power BI for calculations and data analysis. It is important for creating measures, KPIs, and advanced business logic.

6) Can you explain the difference between calculated columns and measures in Power BI?

Ans

Calculated Column	Measure
Row-level calculation	Aggregated calculation
Stored in table	Calculated dynamically
Increases model size	Optimized for performance

7) How do you handle relationships between tables in Power BI?

Ans

In Model View, relationships are created using keys:

- One-to-Many
- Many-to-One
- Active/Inactive relationships

8) What is the purpose of a Power BI Gateway?

Ans

It connects on-premises data sources to Power BI Service securely for refresh and reporting.

9) How can you schedule data refresh in Power BI Service?

Ans

Go to **Power BI Service** → **Dataset Settings** → **Schedule Refresh**, then set time and frequency.

10) Explain the concept of row-level security in Power BI.

Ans

RLS restricts data access for different users. Users see only the data they are allowed to view.

11) What is the Power BI Desktop and how does it differ from Power BI Service?

Ans

Desktop	Service
Used to create reports	Used to share and collaborate
Installed software	Cloud-based platform

12) Explain the concept of Direct Query in Power BI.

Ans

DirectQuery allows Power BI to query data directly from the source without importing it.

13) What are Power BI templates and how are they useful?

Ans

Templates (.pbix) store report structure without data. They are useful for reusing report designs.

14) How do you handle incremental data refresh in Power BI?

Ans

Incremental refresh loads only new or changed data instead of refreshing the full dataset.

15) What is the role of Power Query in Power BI?

Ans

Power Query is used for data cleaning, shaping, and transformation before loading into the model.

16) Explain the difference between calculated columns and calculated tables in Power BI.

Ans

Calculated Column	Calculated Table
Adds a new column	Creates a new table
Uses row context	Used for modeling scenarios

17) How do you create custom visuals in Power BI?

Ans

- Download from AppSource
- Develop using Power BI Visuals SDK (TypeScript)

18) What are the best practices for optimizing performance in Power BI?

Ans

- Use star schema
- Remove unnecessary columns
- Prefer measures over calculated columns
- Use aggregations

19) How can you integrate Power BI with other Microsoft products like Azure and Office 365?

Ans

- Azure services
 - Excel
 - SharePoint
- Microsoft Teams
 - Office 365

20) Explain the concept of aggregations in Power BI

Ans

Aggregations are summary tables used to improve performance for large datasets.

21) How do you handle error handling and data quality in Power BI?

Ans

- Remove duplicates
- Handle missing values
 - Validate data types
- Use Power Query error tools

22) What is the purpose of Power BI Embedded and when would you use it?

Ans

Power BI Embedded allows reports and dashboards to be embedded into custom applications or websites.

