Power BI interview questions

Power Query Editor (Built-in ETL)

1. What did you do with your project and what are your roles & responsibilities?

In my project, I was responsible for data extraction, transformation, and loading using Power Query Editor. I created data models, performed data cleansing, implemented DAX measures, and built interactive dashboards to visualize KPIs.

2. What are the transformations used in your project?

I used transformations such as removing duplicates, filtering rows, pivoting/unpivoting columns, merging queries, splitting columns, changing data types, and adding conditional/custom columns.

3. What are the different sources you have used in your project?

I have worked with various data sources including Excel, SQL Server, SharePoint, Web APIs, and CSV files.

4. What is the difference between Import Mode and Direct Query?

Import Mode loads data into Power BI, offering faster performance and advanced features. Direct Query does not store data in Power BI; it queries the source in real time, suitable for large datasets but limited in functionality.

5. What is the Fact table and Dimension table?

A Fact table contains measurable data like sales, revenue, or profit. A Dimension table contains descriptive attributes such as product names, customer regions, or time information that describe the facts.

6. Difference between Star Schema and Snowflake Schema?

In a Star Schema, dimension tables are directly linked to the fact table. In a Snowflake Schema, dimension tables are normalized into sub-dimensions, creating a more complex but efficient structure.

7. What is Merge and Append in the Power Query Editor?

Merge combines columns from two queries based on a matching key (like JOIN in SQL). Append stacks rows from two or more queries with similar structures.

8. What are the building blocks of Power BI?

The primary building blocks are datasets, reports, dashboards, visuals, and tiles.

9. What is Query Folding in Power Query?

Query Folding refers to the ability of Power BI to push transformations back to the data source for processing, improving performance and scalability.

10. What is Power BI Q&A?

Power BI Q&A is a feature that allows users to ask natural language questions and get visual answers based on available data.

11. What are the components of Power BI?

Power BI consists of Power BI Desktop, Power BI Service, Power BI Gateway, Power BI Mobile, and Power BI Report Server.

12. What is Conditional Formatting in Power BI?

Conditional formatting allows dynamic styling of visuals based on values, such as changing colors of cells or bars based on thresholds.

13. How do you handle errors in Power Query?

I use the "Remove Errors" or "Replace Errors" options, and often apply conditional columns to handle known data issues proactively.

14. Three processes to replace and replace null values?

Using "Replace Values" feature

Applying conditional columns with logic

Using M functions like Table.ReplaceValue or null checks

15. Difference between referencing and duplicating a query in Power Query.

Referencing creates a new query linked to the original, while duplicating creates an independent copy. Changes in the original affect the reference but not the duplicate.

16. What is the M language, and how does it relate to Power Query?

M is the formula language behind Power Query. It enables advanced data transformation logic not always accessible via the UI.

17. How do you schedule data refreshes in Power Query?

Data refreshes are scheduled through the Power BI Service by configuring a dataset refresh time and ensuring a proper gateway is set up.

18. What are custom columns in Power Query, and how do you create them?

Custom columns are user-defined expressions or formulas added to transform or combine data. They are created using the "Add Column" > "Custom Column" option.

19. What is the 'Group By' function in Power Query, and how is it used?

The "Group By" function aggregates data by a specific column, allowing you to apply operations like sum, average, count, etc., on grouped records.

20. Explain how to remove duplicates from a dataset in Power Query.

Select the relevant column(s), right-click and choose "Remove Duplicates." This eliminates rows with identical values in the selected columns.

Power View / Power BI Desktop

1. What are the charts you have used in your project?

I've used various charts including bar charts, column charts, line charts, pie charts, stacked area charts, maps, and combo charts based on the requirements of the business KPIs.

2. Any Custom Charts you have used?

Yes, I have used custom visuals like KPI indicators, word clouds, funnel charts, and decomposition trees available from the Power BI marketplace for enhanced insights.

3. What is the difference between Filters and Slicers?

Filters are applied at the visual, page, or report level to refine data context. Slicers are visual filter elements on the report canvas, providing a user-friendly way to interact with the report.

4. What are Bookmarks in Power BI?

Bookmarks capture the current view of a report page, including filters, slicers, and visual states. They are used to create interactive reports and navigation-like experiences.

5. How can you make your reports dynamic?

By using parameters, dynamic titles with DAX, slicers, bookmarks, drillthrough pages, and measures that respond to user selection.

6. Types of relationship in Power BI?

The key relationship types are:

One-to-many (most common)

Many-to-one

One-to-one

Many-to-many (requires composite models)

7. What are Drillthrough and Drilldown in Power BI?

Drillthrough enables navigation to a detailed report page based on a selected value. Drilldown lets users explore data hierarchies within the same visual by clicking into lower levels.

8. How do you optimize the performance of a Power BI report?

By minimizing visuals, reducing calculated columns, optimizing DAX queries, using Import mode when possible, managing relationships properly, and enabling query folding.

9. How do you handle large datasets in Power BI Desktop?

By aggregating data before importing, using Import mode over DirectQuery when feasible, using data reduction techniques, and leveraging aggregations or composite models.

10. Difference between Tile vs Report vs Dashboard?

A Tile is a single visual or KPI pinned to a dashboard.

A Report is a collection of visuals created in Power BI Desktop.

A Dashboard is a high-level view in Power BI Service composed of tiles from one or more reports.

DAX (Data Analysis Expressions)

1. ## What is the difference between Measures and Calculated Columns?

Measures are dynamic calculations performed on the fly based on filters or visuals (e.g., SUM(Sales[Amount])).

Calculated Columns are static and computed row-by-row at data load time and stored in the model.

2. ## What are DAX functions you have used in your project?

I have commonly used functions like CALCULATE, FILTER, SUMX, ALL, ALLEXCEPT, RELATED, VALUES, IF, SWITCH, and time intelligence functions like SAMEPERIODLASTYEAR, TOTALYTD, DATESMTD, etc.

3. ## What is the difference between SUM and SUMX?

SUM adds up the values of a single column.

SUMX iterates over a table expression and sums the results of an expression evaluated for each row.

4. ## What is the use case of the SUMMARIZE function?

SUMMARIZE is used to group data by specified columns and apply aggregations. It is useful for creating virtual summary tables for further calculations or visuals.

5. ## What is ALL and ALLEXCEPT function?

ALL removes all filters from a table or column, often used in denominator calculations.

ALLEXCEPT removes all filters except for the specified columns, preserving context for certain dimensions.

6. What is the need for a Data Master Table?

A Data Master Table (like a Date Table) ensures consistent and accurate time-based calculations and relationships across multiple fact tables in a model.

7. Can you explain the use case of SAMEPERIODLASTYEAR?

SAMEPERIODLASTYEAR is used to compare performance year-over-year by returning the same period from the previous year, typically used in KPI trend reports.

8. What is Row Context in DAX?

Row Context refers to the current row being evaluated. It's relevant in calculated columns and iterating functions like SUMX, where DAX evaluates expressions row by row.

9. What do you mean by MTD, QTD & YTD?

MTD (Month-To-Date): Accumulated values from the start of the month to the current date.

QTD (Quarter-To-Date): Accumulated values from the start of the quarter to date.

YTD (Year-To-Date): Accumulated values from the beginning of the year to date.

10. Difference between SUM vs SUMX?

This is similar to Q3:

SUM directly aggregates a column.

SUMX performs row-level evaluation over a table before summing the results