Power BI Interview Q & A

1. What is Power BI?

Power BI is a business analytics tool that allows users to turn multiple unrelated data sources into useful/valuable insights for better decision-making purpose in an organization.

2. What are the advantages of using Power BI?

- Interactive dashboards and visualizations
- Integration with numerous data sources
- Real-time data access with Direct Query
- User-friendly interface with drag-and-drop features

3. What are the limitations of Power BI?

- Limited data capacity on free version
- Performance issues with large datasets
- Limited customization in visuals compared to tools like Tableau
- Requires DAX knowledge for complex calculations
- Row-level security only available in Pro/Premium

4. Difference between Power BI Desktop and Power BI Service

- Power BI Desktop is a free, Windows-based application used for creating reports.
- Power BI Service is a cloud-based platform used for publishing, sharing, and collaborating on reports.

5. List some data sources for Power BI

- Excel
- SQL Server
- SharePoint
- Azure services
- Web APIs
- Oracle
- Salesforce

6. How do you connect data in Power BI?

By using the “Get Data” option in Power BI Desktop to connect to a data source, followed by transforming and loading the data using Power Query Editor.

7. What are the different types of relationships in Power BI

- One-to-one
- Many-to-One
- One-to-many (most common)
- Many-to-many

8. Where do u perform data modeling

Relationships can be performed in the Model view, using common columns present between multiple Tables

9. What is DAX?

DAX (Data Analysis Expressions) is a formula language used in Power BI for data modeling and analysis.

10. Purpose and benefits of DAX

DAX allows creation of custom calculations and aggregations, enabling advanced analytics beyond basic reporting.

11. Most used DAX functions

- CALCULATE
- SUMX
- FILTER
- RELATED
- ALL
- IF, SWITCH

12. Creating a calculated column in Power BI

Use DAX in the “Modeling” tab → “New Column” and enter the expression.

13. What is Power BI Desktop?

It’s a Windows application used to design, create, and develop reports and data models.

14. What is a Power BI dashboard?

A single-page, interactive view summarizing key metrics, built in Power BI Service using visuals from one or more reports.

15. Views in Power BI Desktop

- Report View
- Data View
- Model View

16. What are filters in Power BI?

Filters control which data appears in reports based on conditions set at visual, page, or report level.

17. What is Power Query?

A data connection technology used to connect, transform, and prepare data before loading it into the model.

18. Refresh options in Power BI

- Manual Refresh
- Scheduled Refresh
- DirectQuery

19. How do you create running total using DAX

using DAX functions like SUMX and ALL to calculate running totals

20. Use of CALCULATE in Power BI

Modifies filter context to enable complex aggregations like conditional sums or averages.

21. Power Query vs Power Pivot

- Power Query: Used for data connection, transformation, and loading.
- Power Pivot: Used for data modeling and calculations using DAX.

22. What is a dashboard in Power BI?

A high-level, consolidated view of key metrics built in Power BI Service using pinned visuals.

23. Difference between Reports and Dashboard

- Reports: Multi-page, interactive visuals built in Power BI Desktop.
- Dashboards: Single-page views in Power BI Service.

24. Where do you publish your reports?

To Power BI Service (cloud).

25. How do you publish your reports?

Click “Publish” in Power BI Desktop, sign into Power BI Service, and select workspace.

26. What is Row-Level Security (RLS)?

A feature that restricts data access for users based on roles defined in the data model.

27. Building blocks of Power BI

- Datasets
- Reports
- Dashboards
- Tiles
- Visualizations

28. Difference between slicers and filters

- Slicers: Visual, user-friendly filters added to the report canvas.
- Filters: Applied at visual, page, or report level from the filter pane.

29. Difference between VALUES and DISTINCT in DAX

- VALUES: Returns unique values including blanks; respects filter context.
- DISTINCT: Returns unique non-blank values.

30. Different types of refresh options in Power BI

- Manual Refresh: Users refresh datasets manually.
- Scheduled Refresh: Automatic refresh at specified intervals.
- Direct Query: Real-time querying of live databases without needing refreshes.

31. Common tasks in Power Query

- Data transformation (e.g., merging, appending queries).
- Cleaning data (e.g., removing duplicates, filtering rows).
- Changing data types for columns.
- Creating calculated columns based on existing data.

32. What is the role of Power Query Editor

- Power Query is a data transformation and data preparation engine.
- Using Power Query, you can perform the extract, transform, and load (ETL) processing of data from various sources before loading it into Power Bi.
- It allows users to clean, reshape & combine data from different sources using a user-friendly interface, helping to ensure data quality & consistency in Power Bi reports.

33. How do you handle errors in Power BI

- Proper data validation and cleaning Techniques can help to prevent errors from occurring.
- Errors can be handled by using conditional statements in DAX, such as IFERROR (), to handle possible errors in calculations or data loading.

34. What is the difference between Calculated Column Measures

Calculated Column: Works on row-level data.
Stored as part of the table.
Static unless data is refreshed
Can increase data model size.
New fields for rows in a table

Calculated Measures: Works on aggregated data
No additional storage in the table
Responds to filter/slicer changes.
Lightweight, computed dynamically
Aggregations and calculations in visuals

35. Why DAX is used?

It allows users to perform complex calculations for analysis on their data.

36. Define Row-Level Security

Row level security is a feature that restricts data access at the row level based on user's roles. By defining roles & rules, you can ensure that users only see the specific data they are permitted to view, enhancing data privacy and control within reports and dashboards.

37. What is the difference between Power BI query and DAX?

DAX is primarily used for data modeling and creating calculated columns and measures, whereas Power Query (M) is used for data transformation and loading data from external sources

38. When to use Donut Chart?

A donut chart in Power BI is a good choice when you want to show proportional data and compare a sec on to the whole.

39. When to use Column charts?

Column charts are useful for showing data changes over a period of me or for illustrating comparisons among items

40. Mention the difference between Line and Area charts?

Line Chart	Area Chart
Focuses on trends	Focuses on totals + trends
Better for comparing trends among categories	Better for showing proportions over time
Minimalist (no shading)	Shaded areas emphasize volume
Ideal when exact values matter	Ideal when cumulative contribution matters

Charts and their usage

When to use Donut Chart: A donut chart in Power BI is a good choice when you want to show proportional data and compare a section to the whole.

When to use Column charts: Column charts are useful for showing data changes over a period of time or for illustrating comparisons among items

When to use Bar charts: Bar graphs are used to compare things between different groups or to track changes over time.

When to use Heatmaps: Heatmaps in Power BI are particularly useful for visually identifying patterns, trends, or relationships within datasets

When to use a Card Visual: It can be used to display aggregate metrics such as count, the maximum number of leads, the first, the last, and so on.

When should you use an area chart: to show differing trends over time.

When to use a Scatter charts: Scatter charts are useful for showing relationships between two measures.

When to use Tree Map visual: Tree maps are useful for showing patterns of high and low values.

When to use Line chart: Line charts are useful for showing trends over time and comparing many data series.

Line charts plot data at regular points connected by lines.

What is a KPI in Power BI: It stands for **Key Performance Indicator (KPI),** in Power BI is a visual that tracks the performance of a key business metric or goal over time

Types of charts and purpose

Purpose of the chart	Type of chart to use
Show trends over time.	Column chart, line chart, point chart
Compare data.	Bar chart, column chart
Show the relationship of parts to the whole or highlight proportions.	Pie chart
Show the parts that contribute to the total and compare change over time.	Stacked column chart
Show groups of related data.	Bar chart, column chart
Emphasize the magnitude of change over time.	Area chart
Show the relationship between two measures.	Scatter chart
Show the relationships between three measures.	Bubble chart
Show trends over time or compare data with two measures.	Combination chart
Identify patterns of high and low values.	Tree map

Aggregation functions

Function	Description
AVERAGE	**Returns the average (arithmetic mean) of all the numbers in a column.**
AVERAGEA	**Returns the average (arithmetic mean) of the values in a column.**
AVERAGEX	**Calculates the average (arithmetic mean) of a set of expressions evaluated over a table.**
COUNT	**Counts the number of rows in the specified column that contain non-blank values.**
COUNTA	**Counts the number of rows in the specified column that contain non-blank values.**
COUNTAX	**Counts non-blank results when evaluating the result of an expression over a table.**
COUNTBLANK	**Counts the number of blank cells in a column.**
COUNTROWS	**Counts the number of rows in the specified table, or in a table defined by an expression.**
COUNTX	**Counts the number of rows that contain a number or an expression that evaluates to a number, when evaluating an expression over a table.**
DISTINCTCOUNT	**Counts the number of distinct values in a column.**
DISTINCTCOUNTNOBLANK	**Counts the number of distinct values in a column.**
MAX	**Returns the largest numeric value in a column, or between two scalar expressions.**
MAXA	**Returns the largest value in a column.**
MAXX	**Evaluates an expression for each row of a table and returns the largest numeric value.**
MIN	**Returns the smallest numeric value in a column, or between two scalar expressions.**
MINA	**Returns the smallest value in a column, including any logical values and numbers represented as text.**
MINX	**Returns the smallest numeric value that results from evaluating an expression for each row of a table.**
PRODUCT	**Returns the product of the numbers in a column.**
PRODUCTX	**Returns the product of an expression evaluated for each row in a table.**
SUM	**Adds all the numbers in a column.**
SUMX	**Returns the sum of an expression evaluated for each row in a table.**

Date and time functions

Function	Description
CALENDAR	Returns a table with a single column named "Date" that contains a contiguous set of dates.
CALENDARAUTO	Returns a table with a single column named "Date" that contains a contiguous set of dates.
DATE	Returns the specified date in datetime format.
DATEDIFF	Returns the number of interval boundaries between two dates.
DATEVALUE	Converts a date in the form of text to a date in datetime format.
DAY	Returns the day of the month, a number from 1 to 31.
EDATE	Returns the date that is the indicated number of months before or after the start date.
EOMONTH	Returns the date in datetime format of the last day of the month, before or after a specified number of months.
HOUR	Returns the hour as a number from 0 (12:00 A.M.) to 23 (11:00 P.M.).
MINUTE	Returns the minute as a number from 0 to 59, given a date and time value.
MONTH	Returns the month as a number from 1 (January) to 12 (December).
NETWORKDAYS	Returns the number of whole workdays between two dates.
NOW	Returns the current date and time in datetime format.
QUARTER	Returns the quarter as a number from 1 to 4.
SECOND	Returns the seconds of a time value, as a number from 0 to 59.
TIME	Converts hours, minutes, and seconds given as numbers to a time in datetime format.
TIMEVALUE	Converts a time in text format to a time in datetime format.
TODAY	Returns the current date.
UTCNOW	Returns the current UTC date and time
UTCTODAY	Returns the current UTC date.
WEEKDAY	Returns a number from 1 to 7 identifying the day of the week of a date.
WEEKNUM	Returns the week number for the given date and year according to the return_type value.
YEAR	Returns the year of a date as a four-digit integer in the range 1900-9999.
YEARFRAC	Calculates the fraction of the year represented by the number of whole days between two dates.