

# POWER BI TOP 50 INTERVIEW QUESTIONS

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## 1. What is Power BI?

Power BI is a business analytics tool developed by Microsoft that allows users to visualize and analyze data from a wide range of sources.

## 2. What are the components of Power BI?

Power BI consists of Power BI Desktop, Power BI Service (cloud-based platform), and Power BI Mobile (mobile app).

## 3. How do you connect to data sources in Power BI?

In Power BI Desktop, you can connect to data sources using the "Get Data" option. It supports various sources like databases, Excel, SharePoint, and more.

## 4. What is DAX?

DAX (Data Analysis Expressions) is the formula language used in Power BI to create calculated columns, measures, and perform advanced calculations.

## 5. What are calculated columns in Power BI?

Calculated columns are columns created within a table using DAX formulas. They are computed during data loading and become part of the data model.

**6. What are measures in Power BI? Measures are calculations performed on the fly during visualization and analysis. They are used for aggregations, calculations, and data analysis.**

**7. How do you create a visualization in Power BI? To create a visualization, you need to drag and drop fields from the Fields pane onto the report canvas and select the appropriate visualization type.**

**8. What is the difference between a table and a matrix visual in Power BI? A table visual displays data in a tabular format, while a matrix visual provides a cross-tabular view with rows and columns grouped by specified fields.**

**9. How do you filter data in Power BI? You can apply filters to visuals by selecting a field and setting filter conditions in the Filters pane or by using visual-level or page-level filters.**

**10. How do you create a calculated measure in Power BI? To create a calculated measure, you need to go to the Modeling tab in Power BI Desktop, select "New Measure," and write a DAX formula for the measure.**

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**11. How do you create a dashboard in Power BI? In Power BI, you can create a dashboard by pinning visuals from different reports onto a single canvas. Dashboards provide a consolidated view of key metrics.**

**12. How do you share Power BI reports and dashboards with others? You can publish Power BI reports and dashboards to the Power BI Service and share them with others by granting them access and permissions.**

**13. What is row-level security in Power BI? Row-level security is a feature in Power BI that allows you to restrict data visibility based on user roles or attributes. It ensures users only see the relevant data.**

**14. How do you schedule data refresh in Power BI? In the Power BI Service, you can configure scheduled refresh to automatically update data from the data source at specified intervals.**

**15. How do you create a drill-through report in Power BI? To create a drill-through report, you need to define drill-through actions, specifying the target page or report and the fields that trigger the drill-through.**

16. How do you create a custom visual in Power BI? Power BI supports custom visuals created by the Power BI community. You can import custom visuals into Power BI Desktop and use them.

17. What is the difference between DirectQuery and Import modes in Power BI? DirectQuery allows you to connect directly to the data source without importing the data, while Import mode involves importing the data into Power BI's in-memory engine for faster processing and analysis.

18. How do you handle large datasets in Power BI? To handle large datasets, you can optimize data models, apply query folding techniques, enable data compression, and use aggregations and summary tables.

19. What are some limitations of Power BI? Power BI has limitations on data size, refresh frequency, and data storage capacity. It may struggle with extremely large datasets or complex calculations. Additionally, certain advanced features may require premium licenses.

20. How do you handle security and permissions in Power BI? Power BI provides robust security and permission settings. You can define roles and assign users or groups to those roles, granting access to specific reports, dashboards, or data. Row-level security can be implemented to restrict data based on user roles or attributes.

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

To optimize performance, you can minimize the number of visuals on a page, limit the use of complex calculations, and optimize data models by removing unnecessary columns and relationships. Additionally, enabling query folding, data compression, and using aggregations can significantly improve performance.

**22. What are some best practices for designing Power BI reports?**

Some best practices include organizing visuals logically, using consistent color schemes and fonts, providing clear titles and labels, and focusing on simplicity and clarity. It's also important to consider the target audience and design reports that cater to their specific needs.

**23. How do you handle data refresh failures in Power BI? If data refresh fails, you can check the refresh history, examine error messages, and troubleshoot the issue. Common solutions include verifying data source connectivity, ensuring credentials are up-to-date, and addressing any changes in the data structure.**

**24. How do you handle date and time calculations in Power BI?**

Power BI has built-in functions for date and time calculations. You can extract parts of a date (year, month, day), perform date arithmetic, calculate durations, and handle time zone conversions using DAX functions.

**25. How do you create a hierarchy in Power BI? To create a hierarchy, you can select multiple fields in the Fields pane and right-click to create a hierarchy. Hierarchies allow users to drill down and navigate through levels of data.**

**26. How do you handle missing or null values in Power BI? To handle missing or null values, you can use functions like IF, ISBLANK, or COALESCE in DAX expressions. These functions allow you to replace or handle missing values based on specific conditions.**

**27. What is the difference between calculated columns and measures in Power BI? Calculated columns are computed during data loading and become part of the data model. They add new columns to a table and can be used for filtering and grouping. Measures, on the other hand, are calculations performed on the fly during visualization and analysis. They are used for aggregations and calculations within visuals.**

28. How do you create a KPI (Key Performance Indicator) in Power BI? To create a KPI, you need to define a measure that represents the actual value and set target and threshold values. You can then use the KPI visual or card visual to display and analyze the performance against the defined targets.

29. How do you handle currency conversion in Power BI? Power BI provides functions like CONVERT, DIVIDE, and LOOKUPVALUE that can be used to handle currency conversion. You can create measures that dynamically convert currency values based on exchange rates or user-selected currencies.

30. How do you handle outliers or anomalies in Power BI? You can identify outliers by applying statistical techniques like standard deviation or quartiles. Power BI offers functions such as STDEV.P, STDEV.S, and IQR to calculate these measures. Visuals like box plots or scatter plots can help visualize and analyze outliers.

31. How do you create a dynamic date range in Power BI? You can use functions like TODAY, NOW, or SELECTEDVALUE combined with DAX calculations to create dynamic date ranges. These functions allow you to filter data based on current date or user selections.

32. How do you handle complex calculations that require multiple tables in Power BI? You can create relationships between tables using common key fields, enabling you to perform calculations across multiple tables. By using DAX functions like RELATED, CALCULATE, or USERELATIONSHIP, you can work with data from different tables in a single calculation.

33. How do you handle data security and privacy in Power BI? Power BI offers various security features such as row-level security, data encryption, and Azure Active Directory integration. Additionally, you can apply data privacy settings to prevent sensitive information from being exposed during data transformations.

34. How do you create custom visuals in Power BI? Power BI supports custom visuals created by the Power BI community. You can import custom visuals from the Power BI marketplace or create your own using the Power BI Visuals SDK.

35. How do you optimize performance for large datasets in Power BI? To optimize performance with large datasets, you can consider using DirectQuery or import mode, applying query folding techniques, leveraging data compression, and using incremental refresh to load only updated data.

**36. How do you create a drill-through action in Power BI? To create a drill-through action, you need to define a target page or report, specify the fields to drill through, and establish the relationship between the source and target pages. Users can then navigate from summarized information to detailed data with a single click.**

**37. How do you handle data lineage and documentation in Power BI? Power BI provides data lineage capabilities, allowing you to track the flow of data from source to report. You can document the data sources, transformations, and calculations using tools like Power BI Data Catalog or external documentation systems.**

**38. How do you handle real-time data in Power BI? Power BI supports real-time data streaming through the use of streaming datasets and APIs. You can connect to streaming data sources like Azure Event Hubs, IoT devices, or social media platforms to visualize and analyze real-time data.**

**39. What is the difference between calculated columns and calculated tables in Power BI?**

**Calculated columns are additional columns created within a table using DAX expressions, whereas calculated tables are new tables created by defining a DAX expression. Calculated columns are computed during data loading, while calculated tables are generated on the fly.**

## 40. How do you handle multiple data sources in Power BI?

Power BI allows you to connect to multiple data sources by using the "Get Data" option and selecting the appropriate connectors for each source. You can then load and transform the data from each source separately or combine them using relationships.

## 41. What is the Power BI Gateway?

The Power BI Gateway is a software component that enables data refresh and connectivity between Power BI and on-premises data sources. It allows you to keep your data up-to-date and securely access on-premises databases from the Power BI Service.

## 42. How do you create calculated tables in Power BI?

To create a calculated table, you need to go to the Modeling tab in Power BI Desktop and select "New Table." You can then write a DAX expression that defines the structure and values of the calculated table.

## 43. What is the difference between Power BI Report Server and Power BI Service?

Power BI Report Server is an on-premises solution that allows you to host and manage Power BI reports within your organization's network. Power BI Service, on the other hand, is a cloud-based platform provided by Microsoft that allows you to publish, share, and collaborate on Power BI reports and dashboards.

#### **44. How do you create a custom hierarchy in Power BI?**

To create a custom hierarchy in Power BI, you can select multiple columns in the Fields pane, right-click, and choose "Create Hierarchy." This will create a hierarchical structure based on the selected columns, which can be used for drill-down and navigation.

#### **45. What is the importance of data modeling in Power BI?**

Data modeling is crucial in Power BI as it helps create relationships between tables, define calculated columns and measures, and shape the data for analysis. A well-designed data model ensures accurate and efficient data analysis and visualization in Power BI.

#### **46. How do you handle complex business logic in Power BI?**

Power BI offers advanced capabilities through DAX expressions to handle complex business logic. By utilizing functions like IF, SWITCH, and CALCULATE, you can implement conditional statements, dynamic calculations, and complex aggregations.

#### **47. What is Power BI Embedded?**

Power BI Embedded allows developers to embed Power BI reports, dashboards, and visuals into custom applications. It provides the ability to integrate Power BI functionality directly into third-party software or websites.

## **48. How do you optimize performance for large datasets in Power BI?**

To optimize performance for large datasets, you can employ techniques such as data compression, using relationships instead of duplicating data, partitioning tables, and utilizing aggregations and summary tables to minimize the amount of data processed.

## **49. How do you create a Power BI report that updates automatically with new data?**

You can set up automatic data refresh in Power BI by configuring the data source settings and schedule in the Power BI Service. By specifying the refresh frequency and credentials, Power BI will automatically update the report with new data at the specified intervals.

## **50. How do you use Power Query in Power BI to clean and transform data? Power Query is a powerful data preparation tool in Power BI that allows you to clean, transform, and shape data before loading it into the data model.**

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