Power BI Interview Questions with Answers

1. What is Power BI?

Power BI is a highly efficient business intelligence (BI) and data visualization tool developed by Microsoft. It enables users to establish connections with diverse data sources, transform and manipulate data, generate interactive reports and dashboards, and share insights with others. Power BI is extensively used in organizations to analyze data and make informed decisions based on data-driven insights.

Features of Power BI:

- Data Connectivity
- Data Transformation
- Data Modeling
- Power BI Service

2. What do you understand by Business Intelligence?

BI, which stands for **Business Intelligence**, is a technology for collecting, analyzing and delivering business data to support decision-making in organizations This system uses a variety of tools, applications and practices to transform raw data organize them into valuable insights. By doing so, companies can make informed decisions, spot trends and improve their overall performance.

3. What is the difference between Power BI and Tableau?

Below are some key differences between **Power BI** and **Tableau**

Power BI	Tableau
DAX is used by Power BI to calculate measures.	MDX is used by Tableau for measures and dimensions.
Dashboards with a large visualization library that are customizable	Large visualization library, lots of customization
Power BI can only manage a certain amount of data.	Tableau can manage massive amounts of data.
Beginning users and professionals can use Power BI.	Tableau is best suited for professionals.
Simpler user interface for Power BI.	Tableau's user interface might be challenging.
Due of its limited ability to manage big amounts of data, Power BI finds it challenging.	The cloud can be easily supported by Tableau..

4. Differentiate between Power BI and Excel.

Feature	Power BI	Excel
Tabular reports	Power BI is not very good at handling tabular reports.	Excel is better at handling tabular reports.
Duplicate table	Power BI can't display duplicate tables.	Excel allows users to display duplicate tables.
Reports	Power BI allows interactive, personalized reports.	Excel users cannot perform advanced cross-filtering between charts.
Analytics	Power BI offers simple analytics.	Excel offers advanced analytics.
Applications	Power BI is ideal for KPIs, alerts, and dashboards.	Excel has new charts now but they can't connect to data model.

5. What are the different Excel BI add-ins?

The following are the most popular Power BI add-ins for Excel:

- **Power Query** –Editing, loading, and locating external data are made easier with the aid of Power Query.
- **Power Pivot** – Power Pivot is mostly utilized in data modeling and analysis.
- **Power View** – Power View is used to create interactive and visually appealing reports.
- **Power Map** –Power Map is a tool for displaying information on 3D maps.

Power BI Interview Questions for Intermediate

6. Mention the essential features of Power BI.

Power BI is a powerful tool with many features. Some notable features include:

- It enables users to visualize data and share that visualization with others.
- Users are able to browse and examine data from all sources (in a unified view).
- Users may scale across enterprises while benefiting from integrated governance and security.

7. What is the difference between Calculated Columns, Calculated Tables, and Measures?

Calculated Columns	Calculated Tables	Measures
DAX formula is used to add data to tables from already existing data.	DAX formula was used to define the values.	To make complicated calculations, use other DAX functions
Using DAX formulas instead of data sources to query defines values in additional columns.	both Report and Data views were used to create	both Report and Data views were used to create
When data sources don't include information presented in the correct format, it can be useful.	Work well for storing user-requested data in the model and intermediate calculations	used for sales forecasting, comparing sales, highlighting running totals, and other uses

8. What are the differences between a Power BI dataset, a Report, and a Dashboard?

Power BI dataset	Report	Dashboard
Data storage and modeling	Data visualization and analysis	Data presentation and navigation
Stores and prepares data	Displays visualizations	Organizes visuals and reports

Created in Power Query or Power BI Desktop	Created and edited in Power BI Desktop	Created by pinning visuals
No export or print options	Export visuals and reports	Export dashboard visuals
No user interactivity	Interactive filters, slicers, and drill-through	Limited interactivity (drill-through)

9. What are the different Power BI formats?

The following are the various formats available in Power BI:

- Power BI Desktop – You can download and install Power BI Desktop. With the help of templates, you can connect it to a data source, manipulate the data, and then analyze and visualize it.
- Power BI Services – Power BI Services is a cloud-based or service-as-a-platform.
- Power BI Mobile App –The Power BI mobile app is accessible on iOS, Android, and Windows devices.

10. How can you refresh data in Power BI?

Data can be refreshed in Power BI in the following manner:

- To manually update data in Power BI Desktop, click the "Refresh" button on the Home tab to update your report with the latest information from your sources.
- You can choose frequency like daily or weekly when you schedule automatic data refresh for published reports in the Power BI Service.
- In the Power BI Service, dataflows can be scheduled for refresh to keep shared datasets current.
- Data is always real-time for DirectQuery and Live Connection and doesn't need to be manually refreshed.
- To automate data refresh processes and guarantee data accuracy, use Power BI Gateway, Power Automate, APIs, or PowerShell.

Advanced Power BI Interview Questions for Experienced

11. What are the different refresh options available in Power BI?

In Power BI, there are essentially four different categories of refresh possibilities:

- Package Refresh – Dataset is updated with information from Power BI or Excel files that are accessible online in OneDrive, Sharepoint, etc.
- Data Refresh – A gateway is used to update the dataset with on-premises data sources, and the refresh is scheduled.
- Tile Refresh – Dashboard visual tiles are refreshed every 15 minutes and can be made to do so manually by utilizing the visual menu.
- Visual Container Refresh – Pages in a report that contain visuals are refreshed with new data using the visual container refresh feature.

12. What are the major components of Power BI?

There are five different components of Power BI.

- Power Pivot: Fetches and cleans data and loads on to Power Query
- Power Query: Operates on the loaded data
- Power Q&A: Makes it possible for users to interact with reports using simple English language
- Power View: Lets users create interactive charts, graphs, maps, and other visuals
- Power Map: Enables the processing of accurate geographic locations in datasets

13. What is Power Query in Power BI?

- Power Query is an ETL tool. It can help shape, transform, and clean data with the help of intuitive interfaces and no need for coding. Power Query can help with the following:
- Importing data from various data sources like files, databases, social media data, **big data**, etc.
- Appending and joining data from several sources.
- Adding or removing data to shape it according to requirements

14. What is Power Pivot in Power BI?

Microsoft Excel 2010 has a built-in feature called Power Pivot, which enhances its analytical capabilities. Power Pivot allows us to import data from multiple sources, compress data into a single spreadsheet, visualize tabular data using DAX language, define relationships between tables, write formulas, calculate new columns, create PivotTables and PivotCharts, filter and layers use, and we analyze internal data They are. It is a powerful tool for data analysis and management.

15. What is Power View in Power BI?

Power View is a powerful data visualization and reporting tool first introduced as an add-on to Microsoft Excel, later added to the Power BI tool Its primary purpose is to help users visualize data and interactive and engaging reports and dashboards have been developed from a variety of sources. Power View makes it easy for users to search, browse, search and present data in an intuitive and interactive way. Overall, Power View is an essential tool for data analysts and business professionals who need to communicate complex data clearly and efficiently.

16. What is Power Map in Power BI and How can we create it?

Power Map, additionally called 3-d Maps, is a effective records visualization device furnished with the aid of Power BI. It permits customers to create interactive three-D models of geographic and spatial information on a global or custom map. Power Map makes it clean to explore facts systems and traits in a dynamic and immersive manner, making it ideal for geo-region-based information analysis.

To create a Power Map in Power BI:

- Prepare location-based data in Excel.
- Launch Power Map from the "Insert" tab.
- Select location data columns and customize the map.
- Create scenes, interact with the map, and save or share your visualizations.

17. What is Power Q&A in Power BI?

Power Q&A, which stands for Power Query and Answers, is a feature in Power BI that allows users to explore data and ask questions using natural language. Provides immediate visibility into charts, tables, or forms to answer user questions. Power Q&A aims to make data analysis and analysis more accessible and intuitive for a wide variety of people, including those unfamiliar with data analysis tools or SQL queries.

18. What are the different ways to filter the data in Power Bi?

Data can be filtered in Power BI using various filters. There are three types of filters:

- **Drill-through filters:** Power BI Desktop users can create a report page that highlights specific entities, such as suppliers, customers, or manufacturers, using Drillthrough filters.

- **Page-level filters:** On a dashboard, page-level filters are applied to specific pages and can be used to filter charts that are present on those pages.
- **Report-level filters:** Report-level filters are used to filter charts across all report pages simultaneously.

19. What are the different types of visualizations in Power BI?

Some of the most commonly types of visualizations in Power BI include;

- Area charts
- Doughnut charts
- Funnel charts
- Gauge charts
- Bar and column charts
- Combo charts
- Decomposition tree
- Key influencers chart

20. What is DAX? What are the benefits of using variables in DAX?

DAX, or Data Analysis Expressions, is a formula language for calculating data and performing data analysis in Power Pivot. It allows you to query and retrieve data using a table expression, as well as create calculated columns, calculated fields, and measurements. It is important to note that although DAX is useful for data analysis, data cannot be loaded or transformed.

DAX Syntax: *Total Sales = SUM(Sales[SalesAmount])*

Benefits of using variables in DAX:

- Variables in DAX queries can be reused, avoiding additional source database queries.
- Variables make DAX expressions understandable.

21. What are the three fundamental concepts of DAX?

Three fundamental concepts of DAX are as follows:

- **Syntax:** Syntax refers to the rules that define how the code is structured, including the functions to be used. Syntax errors will result in an error message.
- **Functions:** Functions refer to instructions performed in a specific sequence to achieve a specific result.

- **Context:** There are two types of contexts in formulas - Row Context and Filter Context. Row Context is applied when a formula uses a function that filters a table to identify a specific row. Filter Context is applied when one or more filters are used to obtain a certain value.

22. What are the most common DAX functions used?

Some of the most commonly used DAX functions are listed below:

- **Aggregation Functions:** SUM, MIN, MAX, AVG, COUNTROWS, DISTINCTCOUNT
- **Information Functions:** ISBLANK, ISFILTERED, ISCROSSFILTERED
- **Statistical Functions:** GEOMEAN, MEDIAN
- **Logical Functions:** IF, AND, OR, SWITCH
- **Date & Time Functions:** DATEDIFF, DATEVALUE
- **Filter Functions:** VALUES, ALL, FILTER, CALCULATE, TOPN
- **Other Functions:** UNION, INTERSECT, EXCEPT, NATURALINNERJOIN, NATURALLEFTEROUTERJOIN,
- SUMMARIZECOLUMNS, ISEMPTY, VAR

23. What is the CALCULATE function in DAX?

The CALCULATE function helps calculate the sum of the total column and can be customized using filters

- **Syntax:** CALCULATE ([, [, [, …]]])
- **Expression:** That has to be evaluated.
- **Filter:** The filter is an expression used to define a boolean or a table.

24. What is the purpose of the ‘Get Data’ icon in Power BI?

When users click on the "Get Data" icon in Power BI, a drop-down menu appears listing all available data sources from which data can be retrieved.
Power BI allows users to import data from multiple sources, including files in Excel, CSV, XML, JSON, PDF, SharePoint formats, as well as SQL, Access, SQL Server Analysis Services, Oracle, IBM, MySQL , and many others. In addition, Power BI data sets and data flows are compatible with each other. Users can also import data from online sources such as Azure.

25. What are custom visualizations in Power BI?

Power BI allows users to add customized visual elements to their reports and dashboards. These custom visuals, which can be created by users or third-party developers, offer unique ways to present and analyze data beyond the standard visuals provided by Power BI.
By exploring the Custom Visuals Gallery in Power BI, users can discover and integrate these custom visuals into their reports to enhance the presentation and analysis of data. These custom visuals are especially useful when industries require specialized chart types or when the standard visuals don't meet specific visualization requirements. Overall, custom visuals in Power BI enable users to create more engaging and tailored reports and dashboards.

26. What are the different connectivity modes available in Power BI?

Power BI utilizes three primary connectivity modes:

1. **SQL Server Import:** An SQL Server Import is the most commonly used connectivity type in Power BI, allowing full utilization of Power BI Desktop capabilities.
2. **Direct Query:** The Direct Query connection type is only available for specific data sources. In this type, Power BI stores only the metadata of the underlying data, not the actual data.
3. **Live Connection:** When using Live Connection, data is not stored in the Power BI model. Instead, the report interacts directly with the existing Analysis Services model. This connectivity type is only supported by three data sources: SQL Server Analysis Services (Tabular models and Multidimensional Cubes), Azure Analysis Services (Tabular Models), and Power BI Datasets hosted in the Power BI Service.

27. What are the different data sources that Power BI can connect to?

Power BI can connect to various data sources, including:

- Excel
- SQL Server
- SharePoint
- Power BI datasets
- Cloud – Azure, AWS, GCP
- Third-Party Tools

28. What are the different views available in Power BI Desktop?

Power BI has **three distinct** views, each serving a unique purpose:

- Report View: Users can create and publish custom reports with added visualizations and pages.
- Data View: Query Editor tools can be used to shape data.
- Relationship View: In this view, users have the ability to manage the relationships among different datasets.

29. How grouping are performed in Power BI?

To group data in Power BI, simply select the desired fields in a visualization and click on "Group By". Next, define the criteria for grouping and apply functions such as Sum or Average to aggregate data within each group. The grouped data can then be viewed in the visualization, making it easier to analyze and summarize data.

30. What are the different types of filters available in Power BI?

Power BI offers a range of filter types:

- **Visual-level Filters**: These filters can reduce the amount of data a visualization can access and filter both calculations and data.
- **Page-level Filters:** Page-level filters can be different for different pages of the same report.
- **Report-level Filters:** Filters are applied to the entire report, including all visualizations and pages.