

## POWER BI VIVA QUESTIONS

### What is Power BI?

Power BI is a business analytics tool by Microsoft that allows users to connect to, analyze, and visualize data from various sources. It consists of three main components: Power BI Desktop, Power BI Service, and Power BI Mobile.

### What is Power BI Desktop?

Power BI Desktop is a Windows application used to create and design Power BI reports and visualizations. It provides a rich set of tools and features for data modeling, data transformation, and creating interactive reports.

### How is Power BI Desktop different from Power BI Service?

Power BI Desktop is a desktop application used for report development, while Power BI Service is a cloud-based platform for sharing, publishing, and collaborating on Power BI reports. Power BI Desktop is used to create reports, while Power BI Service is used to view and share those reports.

### Different stages in the working of Power BI

**Data Integration:** The primary step in any business intelligence is to establish a successful connection with the data source and integrate it to extract data for processing.

**Data Processing:** The next step in business intelligence is data processing. Most of the time, the raw data also includes unexpected erroneous data, or sometimes a few data cells might be empty. The BI tool needs to interpret the missing values and inaccurate data for processing in the data processing stage.

**Data Presentation:** The final stage in business intelligence is analysing the data got from the source and presenting the insights using visually appealing graphs and interactive dashboards.

### What are the main components of the Power BI Desktop interface?

The main components of the Power BI Desktop interface are the Ribbon, Report View, Data View, Fields pane, Visualizations pane, and Pages pane. These components allow users to design and customize reports.

### What are the Different views available in Power BI Desktop

**Report View:** In this view, users can add visualizations and additional report pages and publish the same on the portal.

**Data View:** In this view, data shaping can be performed using Query Editor Tools.

**Model View:** In this view, users can manage relationships between complex datasets.

### What is the Fields pane in Power BI Desktop used for?

The Fields pane in Power BI Desktop is used to manage the data model. It displays the tables, fields, and relationships imported from the data sources. Users can drag and drop fields from the Fields pane onto the report canvas to create visualizations.

## How do you connect to data in Power BI

To connect to data in Power BI, you start by using the 'Get Data' feature in Power BI Desktop. This allows you to connect to various data sources like Excel, SQL Server, SharePoint, and more

Once connected, you can either load the data directly to the data model or use Power Query Editor to clean and transform it. This process centralizes your data. It makes the data easier to analyze and visualize. This enhances your data insights and decision-making

## What are the different types of data sources you can connect to in Power BI?

Power BI connects to a wide range of data sources, making it versatile for data analysis and visualization. Key data sources include:

**Excel:** Import data directly from Excel files.

**SQL Server:** Connect to SQL Server databases for large datasets.

**SharePoint:** Integrate data from SharePoint lists and libraries.

**Azure:** Access various Azure services like Azure SQL Database and Azure Data Lake.

**Web Data:** Pull data from websites using APIs.

**Other Databases:** Connect to databases like MySQL, Oracle, and PostgreSQL.

**Online Services:** Integrate with services like Google Analytics and Salesforce.

**Flat Files:** Import data from CSV, XML, and JSON files.

## How can you connect Power BI Desktop to data sources?

Power BI Desktop offers various options to connect to data sources, including databases, Excel files, CSV files, SharePoint lists, and cloud-based services. Users can access these options from the Home tab (get data option) in the Power BI Desktop Ribbon.

## What is the Power BI Service?

The Power BI Service is a cloud-based platform where Power BI reports and dashboards can be published, shared, and accessed. It allows users to collaborate, schedule data refreshes, and view reports on the web.

## How can you share Power BI reports with others using the Power BI Service?

Power BI reports can be shared with others by publishing them to the Power BI Service. Once published, you can share reports with specific individuals or groups, control their access permissions, and collaborate on the reports.

## What is Power BI Mobile?

Power BI Mobile is a mobile application that allows users to access and view Power BI reports and dashboards on their smartphones or tablets. It provides a responsive and touch-friendly interface for on-the-go data analysis.

## **DATA MODELLING IN POWER BI**

### **What is data modeling in Power BI?**

Data modeling in Power BI involves structuring and organizing the data to create relationships between tables, define hierarchies, and establish calculations and measures for analysis and reporting.

### **What is the purpose of establishing relationships between tables in Power BI?**

Establishing relationships between tables in Power BI allows for combining and analyzing data from multiple tables. It enables users to create meaningful visualizations and perform calculations across related tables.

### **How can you create relationships between tables in Power BI?**

To create relationships between tables in Power BI, you can go to the “Modeling” tab in Power BI Desktop, select the desired tables, and define the relationship based on common fields or keys.

### **What are the different types of relationships supported in Power BI?**

Power BI supports three types of relationships: one-to-one, one-to-many, and many-to-many. These relationships define how the data in one table relates to the data in another table.

### **How can you enhance data modeling by creating calculated columns in Power BI?**

Calculated columns in Power BI allow you to create new columns based on formulas or expressions using DAX. They can be used to derive additional insights from the existing data or perform calculations.

### **What is a measure in Power BI?**

In Power BI, a measure is a calculation or an aggregate value derived from the data. Measures are typically used for numerical analysis, such as sum, average, count, or percentage calculations.

### **How can you create a measure in Power BI?**

To create a measure in Power BI, you can go to the “Modeling” tab, select the table where the measure will reside, and use the “New Measure” button to define the calculation using DAX expressions.

### **Can you create hierarchies in Power BI? If so, how?**

Yes, you can create hierarchies in Power BI to organize and navigate data at different levels of detail. To create a hierarchy, you can select the desired fields in the “Fields” pane, right-click, and choose the “Create Hierarchy” option.

### **How can you enhance data modeling by using calculated tables in Power BI?**

Calculated tables in Power BI allow you to create new tables based on calculations or queries. They can be used to aggregate data, filter data, or create new dimensions for analysis.

## **DATA VISUALIZATION IN POWER BI**

### **What is data visualization in Power BI?**

Data visualization in Power BI involves representing data in visual formats such as charts, graphs, maps, and tables to gain insights and communicate information effectively.

### **What are the different types of visualizations available in Power BI?**

Power BI offers a wide range of visualizations, including bar charts, line charts, pie charts, scatter plots, maps, tables, and many more. Each visualization type serves a specific purpose and can be customized to meet specific requirements.

### **How can you create visualization in Power BI Desktop?**

To create visualization in Power BI Desktop, you can drag and drop a field from the Fields pane onto the report canvas. Then, choose the desired visualization type from the Visualizations pane and customize it as needed.

### **How can you enhance visualizations in Power BI by adding filters and slicers?**

Power BI allows you to add filters and slicers to visualizations to interactively control the displayed data. Filters and slicers help users focus on specific subsets of data, making it easier to analyze and explore insights.

### **What is a drill-through in Power BI?**

A drill-through in Power BI enables users to navigate from one report page to another to view detailed information related to a specific data point. It allows for a deeper analysis and exploration of data.

### **How can you create a dashboard in Power BI?**

To create a dashboard in Power BI, you can select the desired visualizations and reports from the Power BI Desktop or Power BI Service and pin them to the dashboard. Dashboards provide a consolidated view of key metrics and insights.

### **Can you add custom visuals to Power BI reports and dashboards? If so, how?**

Yes, Power BI supports the addition of custom visuals developed by the Power BI community or created by yourself. You can import custom visuals into Power BI Desktop and use them in your reports and dashboards.

### **What is the role of drill-through and cross-filtering in Power BI dashboards?**

Drill-through and cross-filtering in Power BI dashboards enable users to explore data from different angles and perspectives. They help in drilling down into specific data points or filtering visuals based on selections in other visuals.

### **How can you share Power BI reports and dashboards with others?**

Power BI provides various options for sharing reports and dashboards. You can share them with specific individuals or groups, publish them to the Power BI Service, or embed them in websites or SharePoint portals.

## POWER BI DAX

### What is DAX in Power BI?

DAX stands for Data Analysis Expressions, and it is a formula language used in Power BI to create custom calculations, measures, and aggregations. DAX is similar to Excel formulas but optimized for working with tabular data models.

### How can you create a calculated column using DAX in Power BI?

To create a calculated column using DAX in Power BI, you can go to the “Modeling” tab in Power BI Desktop, select the table, and use the “New Column” button to define the calculation using DAX expressions.

### What is the difference between calculated columns and measures in Power BI DAX?

Calculated columns are computed at the row level and add a new column to the table, while measures are aggregations that summarize data at different levels. Measures are typically used in visualizations and calculations across multiple tables.

### How can you use DAX to filter data in Power BI?

DAX provides several functions to filter data in Power BI, such as the FILTER, CALCULATE, and ALL functions. These functions allow you to define complex filtering conditions based on specific criteria or expressions.

### What is the SUMX function in DAX, and how is it used in Power BI?

The SUMX function in DAX calculates the sum of an expression for each row in a table and returns the total. It is commonly used to perform calculations over a set of rows, such as iterating through a table and summing values.

### How can you use DAX to perform time intelligence calculations in Power BI?

DAX provides time intelligence functions, such as TOTALYTD, SAMEPERIODLASTYEAR, and DATEADD, to perform calculations based on dates and time periods. These functions are useful for analyzing trends, year-over-year comparisons, and cumulative values.

### How can you use DAX to perform conditional calculations in Power BI?

DAX provides conditional functions, such as IF, SWITCH, and CALCULATE, to perform calculations based on specific conditions. These functions allow you to define logic and perform different calculations based on different scenarios.

### What is the role of the CALCULATE function in DAX, and how is it used?

The comparison operator (<>) in Tableau is used to check if two values or fields are not equal. It returns a Boolean value of true if the values are not equal and false if they are equal.

### How can you use DAX to calculate running totals in Power BI?

DAX provides functions like SUMX, CALCULATE, and FILTER to calculate running totals in Power BI. By defining the appropriate expressions and using the appropriate functions, you can calculate cumulative or running totals for specific columns or measures.

## POWER QUERY

### What is Power Query in Power BI?

Power Query is a data transformation and preparation tool in Power BI that allows you to extract, transform, and load (ETL) data from various sources. It provides a user-friendly interface for shaping and cleaning data before it is loaded into the data model.

### How can you access Power Query in Power BI?

In Power BI Desktop, you can access Power Query by selecting the “Edit Queries” option from the “Home” tab. This opens the Power Query Editor, where you can perform data transformations and apply various operations.

### What are the benefits of using Power Query in Power BI?

Power Query offers several benefits, including the ability to connect to multiple data sources, perform data transformations and cleansing operations, create reusable query steps, and automate data refreshes.

### How can you combine multiple data sources using Power Query in Power BI?

Power Query allows you to combine multiple data sources by using the “Append Queries” or “Merge Queries” options. You can join tables based on common columns or append tables vertically to create a consolidated dataset.

### What is data cleansing, and how can you perform it using Power Query?

Data cleansing involves removing or fixing errors, inconsistencies, and invalid values in the data. In Power Query, you can perform data cleansing by applying various operations such as removing duplicates, filtering rows, replacing values, and transforming data types.

### How can you split columns using Power Query in Power BI?

Power Query provides the option to split columns into multiple columns based on delimiters, fixed widths, or custom rules. This is useful when dealing with columns containing combined or structured data.

### Can you create custom columns using Power Query in Power BI? If so, how?

Yes, you can create custom columns using Power Query in Power BI. In the Power Query Editor, you can use the “Add Column” tab to define custom calculations based on expressions or formulas.

### How can you transform and clean data using Power Query functions?

Power Query functions allow you to perform advanced data transformations and cleaning operations. Functions like `Text.Transform`, `Table.TransformColumns`, and `Date.FromText` can be used to apply specific transformations to columns or tables.

### How can you handle null or missing values in Power Query?

Power Query provides functions like `Table.ReplaceValue` and `Table.FillDown` to handle null or missing values. These functions allow you to replace null values with a specific value or fill missing values based on the previous or next non-null value.