Power BI Interview Questions For Freshers

1. What is Power BI?

Power BI is a [business analytics tool](https://www.simplilearn.com/business-analytics-tools-article)developed by Microsoft that helps you turn multiple unrelated data sources into valuable and interactive insights. These data may be in the form of an Excel spreadsheet or cloud-based/on-premises hybrid [data warehouses](https://www.simplilearn.com/data-warehouse-article). You can easily connect to all your data sources and share the insights with anyone.

2. Why should we use Power BI?

Because Power BI provides an easy way for anyone, including non-technical people, to connect, change, and visualize their raw business data from many different sources and turn it into valuable data that makes it easy to make smart business decisions.

3. Difference between Power BI and Tableau

Both [Tableau](https://www.simplilearn.com/learn-tableau-tips-to-start-article) and Power BI are the current IT industry's [data analytics](https://www.simplilearn.com/what-does-a-data-analyst-do-article) and visualization giants. Yet, there are a few significant differences between them. You will now explore the important differences between Tableau and Power BI.

|  |  |
| --- | --- |
| Tableau | Power BI |
| Tableau uses MDX for measures and dimensions | Power BI uses DAX for calculating measures |
| Tableau is capable of handling large volumes of data | Power BI is qualified only to handle a limited amount of data |
| Tableau is best suitable for experts | Power BI is suitable for both experts and beginners |
| Tableau User Interface is complicated | Power BI User Interface is comparatively simpler |
| Tableau is capable of supporting the cloud with ease. | Power BI finds it difficult, as its capacity to handle large volumes of data is limited. |

4. Difference between Power Query and Power Pivot

The differences between Power Query and Power Pivot are explained as follows:

|  |  |
| --- | --- |
| Power Query | Power Pivot |
| [Power Query](https://www.simplilearn.com/tutorials/excel-tutorial/power-query-in-excel) is all about analyzing data. | [Power Pivot](https://www.simplilearn.com/tutorials/excel-tutorial/excel-power-pivot) is all about getting and Transforming data. |
| Power Query is an ETL service tool. | Power Pivot is an in-memory data modeling component |

5. What is Power BI Desktop

Power BI Desktop is an open-source application designed and developed by Microsoft. Power BI Desktop will allow users to connect to, transform, and visualize your data with ease. Power BI Desktop lets users build visuals and collections of visuals that can be shared as reports with your colleagues or your clients in your organization.

6. What is Power Pivot?

Power Pivot is an add-on provided by Microsoft for Excel since 2010. Power Pivot was designed to extend the analytical capabilities and services of Microsoft Excel.

7. What is Power Query?

[Power Query](https://www.simplilearn.com/tutorials/excel-tutorial/power-query-in-excel) is a business intelligence tool designed by Microsoft for Excel. Power Query allows you to import data from various data sources and will enable you to clean, transform and reshape your data as per the requirements. Power Query allows you to write your query once and then run it with a simple refresh.

8. Describe the components of Microsoft’s self-service BI solution.

Self-service business intelligence (SSBI) is divided into the Excel BI Toolkit and Power BI.

9. What is self-service BI, anyway?

SSBI is an abbreviation for Self-Service Business Intelligence and is a breakthrough in business intelligence. SSBI has enabled many business professionals with no technical or [coding](https://www.simplilearn.com/tutorials/programming-tutorial/coding-for-beginners) background to use Power BI and generate reports and draw predictions successfully. Even non-technical users can create these dashboards to help their business make more informed decisions.

10. What is DAX?

DAX stands for Data Analysis Expressions. It's a collection of functions, operators, and constants used in formulas to calculate and return values. In other words, it helps you create new info from data you already have.

11. What are Filters in Power BI?

The term "Filter" is self-explanatory. Filters are mathematical and logical conditions applied to data to filter out essential information in rows and columns. The following are the variety of filters available in Power BI:

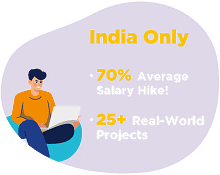
* Manual filters
* Auto filters
* Include/Exclude filters
* Drill-down filters
* Cross Drill filters
* Drillthrough filters
* Drillthrough filters
* URL filters–transient
* Pass-Through filters

12. What are Custom Visuals in Power BI?

Custom Visuals are like any other [visualizations](https://www.simplilearn.com/10-data-visualization-projects-for-every-data-science-geek-article), generated using Power BI. The only difference is that it developes the custom visuals using a custom SDK. The languages like [JQuery and JavaScript](https://www.simplilearn.com/jquery-vs-javascript-article" \o "JQuery and JavaScript" \t "_blank) are used to create custom visuals in Power BI.

14. Mention some advantages of Power BI.

Some of the advantages of using Power BI:

* It helps build an interactable [data visualization](https://www.simplilearn.com/data-visualization-article) in data centers
* It allows users to transform data into visuals and share them with anyone
* It establishes a connection for Excel queries and dashboards for fast analysis
* It provides quick and accurate solutions
* It enables users to perform queries on reports using simple English words 

15. List out some drawbacks/limitations of using Power BI.

Here are some limitations to using Power BI:

* Power BI does not accept file sizes larger than 1 GB and doesn't mix imported data accessed from real-time connections.
* There are very few data sources that allow real-time connections to Power BI reports and dashboards.
* It only shares dashboards and reports with users logged in with the same email address.
* Dashboard doesn't accept or pass user, account, or other entity parameters.

16. What are some differences in data modeling between Power BI Desktop and Power Pivot for Excel?

Power Pivot for [Excel](https://www.simplilearn.com/9-ways-to-improve-microsoft-excel-skills-article) supports only single directional relationships (one to many), calculated columns, and one import mode. Power BI Desktop supports bi-directional cross-filtering connections, security, calculated tables, and multiple import options.

17. Name the different connectivity modes available in Power BI?

There are three main connectivity modes used in Power BI.

SQL Server Import

An [SQL](https://www.simplilearn.com/tutorials/sql-tutorial/what-is-sql) Server Import is the default and most common connectivity type used in Power BI. It allows you to use the full capabilities of the Power BI Desktop.

Direct Query

The Direct Query connection type is only available when you connect to specific data sources. In this connectivity type, Power BI will only store the metadata of the underlying data and not the actual data.

Live Connection

With this connectivity type, it does not store data in the Power BI model. All interaction with a report using a Live Connection will directly query the existing Analysis Services model. There are only 3 data sources that support the live connection method - SQL Server Analysis Services (Tabular models and Multidimensional Cubes), Azure Analysis Services (Tabular Models), and Power BI Datasets hosted in the Power BI Service.

18. What are the various types of refresh options provided in Power BI?

Four important types of refresh options provided in Microsoft Power BI are as follows:

* Package refresh - This synchronizes your Power BI Desktop or Excel file between the Power BI service and OneDrive, or SharePoint Online.
* Model or data refresh - This refreshes the dataset within the Power BI service with data from the original data source.
* Tile refresh - This updates the cache for tile visuals every 15 minutes on the dashboard once data changes.
* Visual container refresh - This refreshes the visible container and updates the cached report visuals within a report once the data changes.

19. Name the data sources can Power BI can connect to?

Several data sources can be connected to Power BI, which is grouped into three main types:

* Files

It can import data from Excel (.xlsx, .xlxm), Power BI Desktop files (.pbix) and Comma-Separated Values (.csv).

* Content Packs

These are a collection of related documents or files stored as a group. There are two types of content packs in Power BI:

* Content packs from services providers like Google Analytics, Marketo, or Salesforce and Content packs are created and shared by other users in your organization.
* Connectors

Connectors help you connect your databases and datasets with apps, services, and data in the cloud.

20. What is a dashboard in Power BI?

A dashboard is a single-layer presentation sheet of multiple visualizations reports. The main features of the [Power BI dashboard](https://www.simplilearn.com/tutorials/power-bi-tutorial/power-bi-dashboard) are:

* It allows you to drill through the page, bookmarks, and selection pane and also lets you create various tiles and integrate URLs
* A dashboard can also help you set report layout to mobile view.

21. Explain how relationnships are defined in Power BI Desktop?

Relationships between tables are defined in two ways:

* Manually - Relationships between tables are manually defined using primary and foreign keys.
* Automatic - When enabled, this automated feature of Power BI detects relationships between tables and creates them automatically.

22. Can you have more than one functional relationship between two tables in a Power Pivot data model?

No. There can be multiple inactive relationships, but only one active relationship between two tables in a Power Pivot data model. Dotted lines represent inactive relationships, and continuous lines represent active relationships.

23. Can you have a table in the model which does not have any relationship with other tables?

Yes. There are two main reasons why you can have disconnected tables:

* The table is used to present the user with parameter values to be exposed and selected in slicers
* It uses the table as a placeholder for metrics in the user interface

24. What is the CALCULATE function in DAX?

The CALCULATE function evaluates the sum of the Sales table Sales Amount column in a modified filter context. It is also the only function that allows users to modify the filter context of measures or tables.

Moving ahead, you will step up to the following Power BI Interview Questions from the Intermediate Level.

Power BI Interview Questions For Intermediate Level

25. Where is data stored in Power BI?

Most of the time, power BI gets assisted by the cloud to store the data. Power BI can use a desktop service. Microsoft Azure is used as the primary cloud service to store the data.

1. Azure SQL Database
2. Azure Blob Storage

26. What is row-level security?

Row-level security limits the data a user can view and has access to, and it relies on filters. Users can define the rules and roles in Power BI Desktop and also publish them to Power BI Service to configure row-level security.

27. Why should you apply general formatting to Power BI data?

Users can use general formatting to make it easier for Power BI to categorize and identify data, making it considerably easier to work with.

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

There are three different views in Power BI, each of which serves another purpose:

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.

29. What are the various versions of Power BI?

* Power BI Desktop
* Power BI service
* Mobile Power BI apps for iOS and Android devices

30. Explain the building blocks of Microsoft Power BI.

The important building blocks of Power BI are as follows:

Visualizations

Visualization is the process of generating charts and graphs for the representation of insights on business data.

Datasets

A dataset is the collection of data used to create a visualization, such as a column of sales figures. Dataset can get combined and filtered from a variety of sources via built-in data plugins.

Reports

The final stage is the report stage. Here, there is a group of visualizations on one or more pages. For example, charts and maps are combined to make a final report.

Dashboards

A Power BI dashboard helps you to share a single visualization with colleagues and clients to view your final dashboard.

Tiles

A tile is an individual visualization on your final dashboard or one of your charts in your final report.

31. What are the critical components of the Power BI toolkit?

The critical components of Power BI are mentioned below.

* Power Query
* Power Pivot
* Power View
* Power Map
* Power Q&A

32. What do you mean by the content pack?

A content pack is defined as a ready-made collection of visualizations and Power BI reports using your chosen service. You'd use a content pack when you want to get up and running quickly instead of creating a report from scratch.

33. Define bi-directional cross filtering.

Bidirectional cross-filtering lets data modelers to decide how they want their Power BI Desktop filters to flow for data, using the relationships between tables. The filter context is transmitted to a second related table that exists on the other side of any given table relationship. This procedure helps data modelers solve the many-to-many issue without having to complicated DAX formulas. So, to sum it up, bidirectional cross-filtering makes the job for data modelers easier.

34. What are the three fundamental concepts of DAX?

Syntax

This is how the formula is written—that is, the elements that comprise it. The Syntax includes functions such as SUM (used when you want to add figures). If the Syntax isn't correct, you'll get an error message.

Functions

These are formulas that use specific values (also known as arguments) in a particular order to perform a calculation, similar to the functions in Excel. The categories of functions are date/time, time intelligence, information, logical, mathematical, statistical, text, parent/child, and others.

Context

There are two types: row context and filter context. Row context comes into play whenever a formula has a function that applies filters to identify a single row in a table. When one or more filters are applied in a calculation that determines a result or value, the filter context comes into play.

35. Why and how would you use a custom visual file?

You will use a custom visual file if the prepackaged files don't fit the needs of your business. Developers create custom visual files, and you can import them and use them in the same way as you would the prepackaged files.

36. What are some familiar sources for data in the Get Data menu in Power BI?

A few familiar data sources are Excel, Power BI datasets, web, text, SQL server, and analysis services.

37. What are the categories of data types?

* All
* File
* Database
* Power BI
* Azure
* Online Services
* Other

38. Name some commonly used tasks in the Query Editor.

* Connect to data
* Shape and combine data
* Group rows
* Pivot columns
* Create custom columns
* Query formulas

39. What do you mean by grouping?

Power BI Desktop helps you to group the data in your visuals into chunks. You can, however, define your groups and bins. For grouping, use Ctrl + click to select multiple elements in the visual. Right-click one of those elements and, from the menu that appears, choose Group. In the Groups window, you can create new groups or modify existing ones.

40. Explain responsive slicers in Power BI.

On a Power BI final report page, a developer can resize a responsive slicer to various sizes and shapes, and the data collected in the container will be rearranged to find a match. If a visual report becomes too small to be useful, an icon representing the visual takes its place, saving space on the report page.

41. What is query folding in Power BI?

Query folding is used when steps defined in the Query Editor are translated into SQL and executed by the source database instead of your device. It helps with scalability and efficient processing.

42. What is "M language."

M is a programming language used in Power Query as a functional, case-sensitive language similar to other programming languages and easy to use.

Power BI Interview Questions For Experienced

43. What are the major differences between visual-level, page-level, and report-level filters in Power BI?

Visual-level filters are used to filter data within a single visualization. Page-level filters are used to work on an entire page in a report, and different pages can have various filters.

Report-level filters are used to filter all the visualizations and pages in the report.

44. List the most common techniques for data shaping.

* Adding indexes
* Applying a sort order
* Removing columns and rows

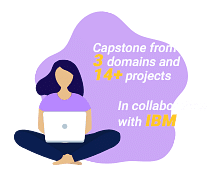
45. How is the Schedule Refresh feature designed to work?

Users can set up for an automatic refresh over data based on daily or weekly requirements. Users can schedule only one refresh maximum daily unless they have Power BI Pro. The Schedule Refresh section uses the pull-down menu choices to select a frequency, time zone, and time of day.

46. What information is needed to create a map in Power Map?

Power Map can display geographical visualizations. Therefore, some location data is needed—for example, city, state, country, or latitude and longitude.

47. Which in-memory analytics engine does Power Pivot use?

Power Pivot uses the xVelocity engine. xVelocity can handle huge amounts of data, storing data in columnar databases. All data gets loaded into RAM memory when you use in-memory analytics, which boosts the processing speed.

48. Mention important components of SSAS

Following are some of the important Components of SSAS:

OLP Engine

An OLAP Engine is used to extensively run the ADHOC queries at a faster pace by the end-users

Data Drilling

It describes data Drilling in SSAS as the process of exploring details of the data with multiple levels of granularity.

Slicers

The data Slicing process in SSAS is defined as the process of storing the data in rows and columns.

Pivot Tables

Pivot Tables helps in switching between the  different categories of data stored between rows and columns

49. What are the three fundamental concepts of DAX?

1. Syntax: This is how the formula is written—the elements that comprise it. The syntax includes functions such as SUM (used when you want to add figures). If the syntax isn't correct, you'll get an error message.
2. Functions: These are formulas that use specific values (also known as arguments) in a certain order to perform a calculation, similar to the functions in Excel. The categories of functions are date/time, time intelligence, information, logical, mathematical, statistical, text, parent/child, and others.
3. Context: There are two types: row context and filter context. Row context comes into play whenever a formula has a function that applies filters to identify a single row in a table. When one or more filters are applied in a calculation that determines a result or value, the filter context comes into play.

50. Name the variety of Power BI Formats.

Power BI is available mainly in three formats, as mentioned below.

1. Power BI Desktop: Open-Source version for Desktop users
2. Power BI Services: For Online Services
3. Power BI Mobile Application: Compatible with mobile devices

51. What are the different stages in the working of Power BI?

There are three different stages in working on Power BI, as explained below.

1. Data Integration
2. Data Processing
3. Data Presentation

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](https://www.simplilearn.com/what-is-data-processing-article). 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 analyzing the data got from the source and presenting the insights using visually appealing graphs and interactive dashboards.

52. Which professionals use Power BI the most?

Beginners and experts prefer Power BI in business intelligence. Power BI is used mainly by the following professionals.

* Business Analysts
* Business Owners
* Business Developers

Business Analysts

A [business analyst](https://www.simplilearn.com/tutorials/business-analysis-tutorial/how-to-become-a-business-analyst) is a professional who analyses the business data and represents the insights found using visually appealing graphs and dashboards

Business Owners

Business owners, decision-makers, or organizations use Power BI to view the insights and understand the prediction to make a business decision.

Business Developers

Business Developers are just[software developers](https://www.simplilearn.com/what-is-a-software-developer-article) who get hired for business purposes to develop custom applications and dashboards to help the business process be smooth.

53. What is the advanced editor?

Advanced editor is used to view queries that Power BI is running against the data sources importing data. The query is rendered in M-code. Users wanting to view the query code select “Edit Queries” from the Home tab, then click on “Advanced Editor” to perform work on the query. Any changes get saved to Applied Steps in the Query Settings.

54. What gateways does Power BI have and why should you use them?

Gateways function as bridges between the in-house data sources and [Azure Cloud Services.](https://www.simplilearn.com/azure-cloud-services-and-its-importance-article)

* Personal Gateway: Used only by one person, data can be imported, and is only valid on Power BI Service.
* On-Premises Gateway: This is an advanced form of the Personal Gateway, supporting Direct Query and usable by multiple users to refresh data.

55. Mention some applications of Power BI

There are multiple applications of Power BI; some of them are as follows:

* Business Analysis
* Data Analysis
* Database Administration
* IT Professional
* [Data Science](https://www.simplilearn.com/why-and-how-data-science-matters-to-business-article)

56. How can you depict a story in Power BI?

Every individual chart or visualization report generated is collected and represented on a single screen. Such an approach is called a Power BI Dashboard. A Dashboard in Power BI is used to depict a story.

57. What are KPIs in Power BI?

KPI is abbreviated as Key Performance Indicator. Any professional organization has teams and employees follow the KPI protocols. The organizations set up KPIs for all the employees. These KPIs act as their targets. These KPIs are compared to previous performance and analyze the progress.

58. What is a Slicer?

Slicers are an integral part of a business report generated using Power BI. The functionality of a slicer can be considered similar to that of a filter, but, unlike a filter, a Slicer can display a visual representation of all values and users will be provided with the option to select from the available values in the slicer’s drop-down menu.

59. Explain Power BI Designer.

It is a combined solution offered to upload the reports and dashboards to the PowerBI.com website for reference. It consists of Power Pivot, Power Query, and Power Table.

60. How do you reshape data in Power BI?

Power BI offers a wide variety of data source connectivity options. Data Editor is one of the tools used to manipulate rows and columns of the data and helps you reshape it according to the requirements.

With that, you have come to an end to this tutorial on “Top 60 Power BI Interview Questions and Answers for 2023”.

**7. What are the available views?**

In power BI, you have various kinds of views viz:

* **Data View:** Curating, exploring, and viewing data tables in the data set. Unlike, Power Query editor, with data view, you are looking at the data after it has been fed to the model.
* **Model View:** This view shows you all the tables along with their complex relationships. With this, you can break these complex models into simplified diagrams or set properties for them at once.
* **Report View:** The report view displays the tables in an interactive format to simplify data analysis. You can create n number of reports, provide visualizations, merge them, or apply any such functionality.

**8. What are the available formats?**

Power BI is available in various formats:

* Power BI desktop: For the desktop version
* Power BI mobile app: For using the visualizations on mobile OS and share it
* Power BI services: For online SaaS

**13. What are the various Power BI versions?**

The three major versions of Power BI are as follows:

* **Power BI Desktop:** The free interactive tool that connects multiple data sources, transforms data, and creates visualized reports.
* **Power BI Premium:** The premium version is used for larger organizations with a dedicated storage capacity for each user. With premium, data sets up to 50GB storage capacity can be hosted along with 100TB storage on the cloud as a whole. It costs $4995 per month.
* **Power BI Pro:**  With the pro version, you get full access to the Power BI dashboard, creation of reports, along with unlimited sharing and viewing of reports. You also have a storage limit of 10GB per user

### 22. What do we understand by Power BI services?

Power BI provides services for its cloud-based business analytics. With these services, you can view and share reports via the Power BI website. Power BI is a web-based service for sharing reports. Power BI service can be best referred to as PowerBI.com, PowerBI workspace, PowerBI site, or PowerBI portal

**23. What is the comprehensive working system of Power BI?**

Power BI’s working system mainly comprises three steps:

* **Data Integration:** The first step is to extract and integrate the data from heterogeneous data sources. After integration, the data is converted into a standard format and stored in a common area called the staging area.
* **Data Processing:** Once the data is assembled and integrated, it requires some cleaning up. Raw data is not so useful therefore, a few transformation and cleaning operations are performed on the data to remove redundant values, etc. After the data is transformed, it is stored in data warehouses.
* **Data Presentation:** Now that the data is transformed and cleaned, it is visually presented on the Power BI desktop as reports, dashboards, or scorecards. These reports can be shared via mobile apps or web to various business users

**24. What are custom visuals in Power BI?**

Using Power BI visualizations, you can apply customized visualizations like charts, KPIs, etc. from the rich library of PowerBI’s custom visuals. It refrains the developers from creating it from scratch using JQuery or Javascript SDK. Once the custom visual is ready, it is tested thoroughly. Post testing, they are packaged in .pbiviz file format and shared within the organization.

Types of visuals available in Power BI are:

* Custom visual files.
* Organizational files.
* Marketplace files

**25. What are the various type of users who can use Power BI?**

Anyone and everyone can use PowerBI to their advantage. But even then a specific set of users are more likely to use it viz:

* **Business Users:** Business users are the ones who constantly keep an eye on the reports to make important business decisions based on the insights.
* **Business Analysts:** Analysts are the ones who create dashboards, reports, and visual representations of data to study the dataset properly. Studying data needs an analytical eye to capture important trends within the reports.
* **Developers:** Developers are involved while creating custom visuals to create Power BI, integrating Power BI with other applications, etc.   
  Professionals: They use Power BI to check the data scalability, security, and availability of data.