

Power BI Assignment 2

1. Explain the advantages of Natural Queries in PowerBI with an example?

Ans: In Power BI, Natural Queries refer to the ability to use natural language to ask questions and get answers from data. This feature is also known as "Q&A" (Question and Answer).

With Natural Queries, users can type or speak questions in simple, everyday language, and Power BI will understand the question and generate visualizations and insights based on the data in the model. This allows users to quickly and easily explore and analyze data without needing to have a deep understanding of the underlying data model or the technical skills required to create complex queries.

A natural language query is input that consists solely of terms or phrases spoken normally or entered as they might be spoken, without any non-language characters, such as the plus symbol or the asterisk, and without any special format or alteration of syntax.

"What was our sales revenue last quarter?"

Function: SUMX

"What were our top-selling products last month?"

Function: TOPN

"What was the average price of our products last month?"

Function: AVERAGE

2. Explain Web Front End(WFE) cluster from Power BI Service Architecture?

Workings of Power BI Architecture

All reports you build in Power BI Desktop are published on the Power BI Service cloud platform.

Users can use client platforms, including websites, mobile devices, etc., to view the reports and dashboards from the Power BI Service. As a result, each client wishing to access content generated by Power BI must engage with the Power BI Service. Therefore, we must examine the inner workings of Power BI Service to understand how it functions.

The architecture of Power BI Service is divided into two sections:

Front End cluster

Back End cluster

Front End Cluster

Clients and the back end are connected by the front end, commonly known as the web front-end cluster. The front-end services handle the initial connection and Azure Active Directory client authentication. User IDs are kept in the Azure Active Directory. After authentication, user requests are routed through Azure Traffic Manager to the closest data center. The Azure Content Delivery Network (CDN) makes static Power BI content and files available to users when a client or user has been authorized.

3.Explain Back End cluster from Power BI Service Architecture?

Ans:

Back End Cluster

Visualizations, datasets, storage, reports, data connections, data updating, and other Power BI interactions are handled by the Power BI services on the back end. A web client can only directly interface with Azure API Management and Gateway Role on the backend. These two parts are in charge of routing, load balancing, authentication, and **authorization**.

4.What ASP.NET component does in Power BI Service Architecture?

Ans: Asp.Net is an open-source, cross-platform, server-side web framework developed and maintained by Microsoft that allows developers to build dynamic web pages, apps, and services.

It extends the .NET platform with the tools and libraries specifically required for building web apps.

Some of these additions include a base framework for processing web requests, a webpage templating syntax (Razor), an authentication system, and libraries for common web patterns.

When using Asp.Net, the backend code is written in C#, F#, or Visual Basic. Since it is based on the .NET framework, developers can still use the extensive ecosystem of libraries and software packages or create their own libraries that are shared among all apps written on the .NET platform.

Some of the top organizations using Asp.Net in their tech stack include Slack, Mastercard, Roblox, HBO, SpaceX, ViaVarejo, etc.

Coming to the question “What ASP.NET component does in Power BI Service Architecture”

ASP.NET is a web development framework created by Microsoft, while Power BI is a business analytics service provided by Microsoft. However, ASP.NET and Power BI can be integrated together to create web applications that incorporate Power BI reports and visualizations.

One way to integrate ASP.NET and Power BI is by embedding Power BI reports into ASP.NET web pages using the Power BI embedded API. This allows developers to create custom web applications that provide rich interactive data visualizations powered by Power BI.

Another way to integrate ASP.NET and Power BI is by using the Power BI REST API, which allows developers to programmatically access and manipulate Power BI resources such as reports, dashboards, and datasets from within an ASP.NET application.

5. Compare Microsoft Excel and PowerBi Desktop on the following features:

Data import

Data transformation

Modeling

Reporting

Server Deployment

Convert Models

Cost

Ans: Comparison between Microsoft Excel and Power BI Desktop on the following features:

Data import: Both Excel and Power BI Desktop allow users to import data from a wide range of sources, including databases, files, and cloud-based services. However, Power BI Desktop has more advanced data import features, such as the ability to import data from web services, Hadoop clusters, and Azure data services. Power BI Desktop also allows for real-time data streaming, while Excel does not.

Data transformation: Excel and Power BI Desktop both provide data transformation capabilities, such as data cleaning, merging, and splitting. However, Power BI Desktop has more advanced data transformation features, such as the ability to apply machine learning algorithms, custom functions, and data profiling tools.

Modeling: Both Excel and Power BI Desktop allow users to create data models and relationships between tables. However, Power BI Desktop has more advanced modeling features, such as the ability to create hierarchies, custom calculations, and measures using DAX (Data Analysis Expressions).

Reporting: Both Excel and Power BI Desktop allow users to create reports and visualizations based on data models. However, Power BI Desktop has more advanced reporting features, such as the ability to create interactive visualizations, drill-down reports, and custom themes. Power BI Desktop also offers more options for sharing and collaborating on reports.

Server Deployment: Excel reports can be saved and shared through a SharePoint server, but this is not as seamless as Power BI Desktop's server deployment options. Power BI Desktop offers a range of deployment options, including Power BI Service, Power BI Report Server, and Azure.

Convert Models: Power BI Desktop models can be easily converted to Excel data models by exporting them to a .pbix file, which can then be opened in Excel. However, Excel data models cannot be converted to Power BI Desktop models.

Cost: Excel is typically included as part of a Microsoft Office subscription, while Power BI Desktop is available for free. However, to access advanced features such as sharing and collaboration, users need to subscribe to the Power BI service, which has a cost associated with it.

Overall, while Excel and Power BI Desktop share some similarities, Power BI Desktop offers more advanced features for data import, transformation, modeling, and reporting. Additionally, Power BI Desktop offers more robust deployment options and is generally more suited for enterprise-level data analytics and reporting. However, for smaller-scale projects and more basic reporting needs, Excel may be a more suitable option.

6. List 20 data sources supported by Power BI desktop.

Ans:

The Get Data dialog box organizes data types in the following categories:

File, Database, Power Platform, Azure, Online Services, Other

- 1) Excel Workbook
- 2) Text/CSV
- 3) XML
- 4) JSON
- 5) Folder
- 6) SQL Server database
- 7) Access database
- 8) SQL Server Analysis Services database
- 9) Oracle database
- 10) IBM Db2 database
- 11) IBM Informix database (Beta)
- 12) Power BI datasets
- 13) Datamarts (pre
- 14) Azure Analyremises)
- 15) Azure DevOps (Boards only)
- 16) Azure DevOps Server (Boards only)
- 17) Salesforce Objects
- 18) Salesforce Reports
- 19) Google Analytics
- 20) Web
- 21) SharePoint list
- 22) OData Feed
- 23) Active Directory
- 24) Microsoft Exchange
- 25) Hadoop File (HDFS)
- 26) Spark
- 27) Hive LLAP
- 28) R script
- 29) Python script