**Power BI Assignment 2**

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

Answer:

* The advantages of Natural Queries in Power BI include improved user experience, faster data exploration, and increased accessibility for non-technical users. Natural Queries allow users to interact with data using natural language queries or expressions, making it easier to explore and analyze data without the need for complex query languages or coding skills.
* For example, let's consider a scenario where a user wants to analyze sales data for a specific product category in Power BI. Instead of writing a complex query or navigating through multiple menus and options, the user can simply type or speak a natural language query like, "Show me the sales trend for electronics category by month."

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

Answer:

In the Power BI Service architecture, the Web Front End (WFE) cluster plays a crucial role in handling user interactions and serving content to users accessing Power BI reports, dashboards, and other features through the web interface. The WFE cluster is responsible for delivering the web-based user experience of the Power BI Service

Key aspects of the Web Front End (WFE) cluster in Power BI Service architecture:

* User Interaction: The WFE cluster facilitates user interaction by handling user requests and rendering the visual elements of reports and dashboards in the web interface.
* Load Balancing: The WFE cluster utilizes load balancing techniques to distribute user requests across multiple servers. This helps in ensuring optimal performance and scalability, as the load is distributed evenly among the nodes within the cluster.
* Authentication and Security: The WFE cluster handles user authentication and ensures secure access to Power BI resources.
* Session Management: The WFE cluster manages user sessions and maintains state information during user interactions.
* Performance Optimization: The WFE cluster incorporates various performance optimization techniques to enhance the user experience.

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

Answer:

The Back End cluster in Power BI Service architecture is responsible for managing data storage, processing, and executing backend operations. It consists of servers and services that handle tasks such as data ingestion, data transformation, data modeling, and data storage. The Back End cluster is responsible for executing complex calculations, managing data connections, refreshing data sources, and maintaining data integrity. It provides the foundation for data storage, processing, and analysis that supports the functionalities and features of the Power BI Service.

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

Answer:

* Power BI Service architecture, ASP.NET components play a crucial role in handling the web-based functionalities and interactions within the service. ASP.NET is a web development framework provided by Microsoft, and it is used extensively in the Power BI Service to build and manage the web application.
* ASP.NET components handle tasks such as request processing, session management, authentication, and rendering of web pages. They provide the necessary infrastructure for creating dynamic and interactive web interfaces, handling user interactions, and integrating with backend services and databases. ASP.NET components enable the Power BI Service to deliver a responsive and interactive user experience through the web interface.

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

Data import

Data transformation

Modeling

Reporting

Server Deployment

Convert Models

Cost

Answer:

* **Data Import:**
  + Microsoft Excel allows users to import data from various sources, such as databases, spreadsheets, and web services. Power BI Desktop offers similar data import capabilities but with more robust connectivity options, including direct connections to cloud-based services and databases.
* **Data Transformation:**
  + Both Microsoft Excel and Power BI Desktop provide data transformation capabilities. However, Power BI Desktop offers a more advanced and user-friendly interface for data transformation, with features like Power Query Editor that allow users to shape and clean data effectively.
* **Modeling:**
  + Power BI Desktop provides advanced modeling capabilities, allowing users to create relationships between tables, define calculated columns and measures, and build complex data models. Excel also offers basic modeling features, but Power BI Desktop is more comprehensive and suitable for larger and more complex datasets.
* **Reporting:**
  + While both Microsoft Excel and Power BI Desktop enable users to create reports, Power BI Desktop offers more robust and interactive reporting capabilities. Power BI Desktop provides a wide range of visualizations, interactive filters, and drill-down options, allowing users to create highly interactive and visually appealing reports.
* **Server Deployment:**
  + Power BI Desktop models can be published to the Power BI service for server deployment, enabling users to share and collaborate on reports and dashboards. Excel, on the other hand, typically relies on file-based sharing and lacks centralized server deployment capabilities.
* **Convert Models:**
  + Power BI Desktop provides the ability to convert Excel models to Power BI models. This allows users to leverage their existing Excel data models and migrate them to the more powerful Power BI environment seamlessly.
* **Cost:**
  + Microsoft Excel is included in the Microsoft Office suite and is typically available through a one-time purchase or subscription model. Power BI Desktop, on the other hand, is free to download and use, making it a cost-effective option for data analysis and reporting.

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

Answer:

* Excel workbook
* SQL Server database
* Azure SQL Database
* Azure Analysis Services
* SharePoint Online list
* SharePoint folder
* Salesforce
* Dynamics 365
* Google Analytics
* Oracle database
* MySQL database
* PostgreSQL database
* IBM DB2 database
* Teradata database
* Web content (HTML, XML, JSON)
* OData feed
* Hadoop File (HDFS)
* SharePoint Online (OneDrive for Business)
* Azure Blob Storage
* Web API (RESTful services)