**Power BI Assignment 2**

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

Ans:

Natural queries allow users to ask questions about their data in a more intuitive, human-like way, using natural language rather than a predetermined set of commands or formulas. This can make it easier for users to explore and analyse their data, especially if they are not familiar with the syntax and structure of traditional query languages.

For example, in Power BI, a user might use a natural query to ask "What were the top selling products last month?" rather than having to write a complex formula to extract this information from the data. The natural query feature in Power BI can interpret the user's question and return the appropriate results.

Other advantages of natural queries include:

Simplicity: Natural queries are easy to use and understand, even for users with little or no technical background.

Speed: Natural queries can be executed quickly, allowing users to get the information they need without having to spend a lot of time writing and debugging complex formulas.

Flexibility: Natural queries can be used to ask a wide range of questions about the data, allowing users to explore and analyze the data in different ways.

Collaboration: Natural queries can be used by multiple users, allowing them to share insights and collaborate on data analysis tasks.

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

Ans:

In the Power BI Service architecture, the Web Front End (WFE) cluster is a group of servers that are responsible for handling user requests and serving up the Power BI content, such as reports and dashboards. The WFE cluster is the first point of contact for users when they access the Power BI Service, and it is responsible for routing requests to the appropriate back-end components and returning the results to the user.

The WFE cluster is designed to be highly scalable and able to handle a large volume of requests from multiple users simultaneously. It is also designed to be highly available, with multiple servers in the cluster working together to ensure that the Power BI Service is always up and running.

In addition to serving up content to users, the WFE cluster also plays a key role in managing user authentication and authorization, as well as handling tasks such as scheduling data refresh and handling user notifications.

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

Ans:

In the Power BI Service architecture, the Back End cluster is a group of servers that handle the data processing and storage tasks for the Power BI Service. This includes tasks such as querying data sources, aggregating data, and storing data in the Power BI data model.

The Back End cluster is designed to be highly scalable and able to handle a large volume of data processing and storage tasks simultaneously. It is also designed to be highly available, with multiple servers in the cluster working together to ensure that the Power BI Service is always up and running.

The Back End cluster communicates with the Web Front End (WFE) cluster to handle user requests and serve up the appropriate content, such as reports and dashboards. It also communicates with data sources to retrieve data and refresh the data model as needed.

In addition to data processing and storage, the Back End cluster also handles tasks such as data security and privacy, data governance, and data quality management.

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

Ans:

ASP.NET is a web development framework that is used in the Power BI Service architecture to build the web-based user interface for the Power BI Service. The Power BI Service is a cloud-based service that allows users to access, analyze, and share data and insights through a web browser.

ASP.NET is used to build the user interface for the Power BI Service, including the pages and controls that users interact with to view and interact with their data. ASP.NET is a powerful framework that allows developers to build dynamic, interactive web applications that can be accessed from any device with a web browser.

In the Power BI Service architecture, the ASP.NET component is integrated with the Web Front End (WFE) cluster and the Back End cluster to handle user requests and serve up the appropriate content. It is responsible for handling user input, interacting with the data model and data sources, and rendering the results to the user in the form of reports, dashboards, and other visualizations.

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

Data import

Data transformation

Modeling

Reporting

Server Deployment

Convert Models

Cost

Ans:

Here is a comparison of Microsoft Excel and Power BI Desktop on the listed features:

Data import: Both Excel and Power BI Desktop support the import of data from a wide range of sources, including databases, spreadsheets, and text files. However, Power BI Desktop has more advanced data import options, such as the ability to connect to real-time data streams and integrate with external APIs.

Data transformation: Both Excel and Power BI Desktop provide tools for cleaning and transforming data, such as sorting, filtering, and pivot tables. However, Power BI Desktop has more advanced data transformation capabilities, including the ability to use M language to write custom transformations and the ability to use the Power Query editor to build complex data transformations.

Modeling: Both Excel and Power BI Desktop support the creation of data models for analysis and visualization. However, Power BI Desktop has more advanced modeling capabilities, such as the ability to create relationships between tables and the ability to use DAX (Data Analysis Expressions) to create custom measures and calculated columns.

Reporting: Both Excel and Power BI Desktop allow users to create reports and visualizations to present data insights. However, Power BI Desktop has more advanced reporting capabilities, such as the ability to create interactive dashboards and the ability to publish reports to the Power BI Service for sharing and collaboration.

Server deployment: Excel is a desktop application that is installed on a local machine, while Power BI Desktop can be published to the Power BI Service, which is a cloud-based platform for sharing and collaborating on data insights.

Convert models: Power BI Desktop has the ability to import Excel workbooks and convert them into Power BI models, while Excel does not have this capability.

Cost: Excel is typically included as part of the Microsoft Office suite and is available for purchase through a one-time purchase or subscription model. Power BI Desktop is available for free, but users must have a Power BI Pro subscription to publish content to the Power BI Service and access advanced features.

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

Ans:

Here are 20 data sources that are supported by Power BI Desktop:

Excel files

CSV files

Text files

Access databases

SQL Server databases

Oracle databases

MySQL databases

PostgreSQL databases

IBM DB2 databases

SAP HANA databases

Teradata databases

OData feeds

Web pages

SharePoint lists

Salesforce data

Google Analytics data

Azure SQL Database

Azure SQL Data Warehouse

Azure Cosmos DB

Azure Blob Storage