**Power BI Assignment 2**

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

Natural queries, also known as natural language queries or NLQ, allow users to ask questions in their own words, using natural language, rather than having to use a specific syntax or structure. This can make it easier for users to ask for the information they need and can make PowerBI more accessible to those who may not be familiar with the specific syntax and structure of traditional queries.

**Advantages of using natural queries in Power BI include:**

Improved accessibility: Natural queries can make it easier for users who may not be familiar with the specific syntax and structure of traditional queries to get the information they need.

Enhanced user experience: Natural queries can provide a more intuitive and user-friendly way to interact with the data, as users can ask questions in their own words.

Increased efficiency: Natural queries can save time and effort for users who don't have to spend time learning the specific syntax and structure of traditional queries.

Improved accuracy: Natural queries can reduce the risk of errors or misunderstandings, as users can clearly communicate their intent and ask questions in their own words.

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

In the Power BI Service architecture, a Web Front End (WFE) cluster is a group of servers that handle requests from users to access Power BI dashboards and reports. The WFE cluster is responsible for rendering the user interface and handling user interactions, such as clicking on a report or dashboard element to drill down or filter the data.

The WFE cluster is one component of the Power BI Service architecture, which also includes a data storage layer and a data processing layer. The data storage layer stores the raw data and processed data that is used to populate the reports and dashboards, while the data processing layer is responsible for querying and transforming the data as needed to generate the final report or dashboard.

The WFE cluster communicates with the data processing layer to retrieve the necessary data for rendering the user interface, and it communicates with the data storage layer to persist any changes made by the user, such as applying filters or drill-down actions.

Overall, the WFE cluster plays a critical role in the Power BI Service architecture by providing the interface through which users can interact with and explore their data.

**Explain Back End cluster from Power BI Service Architecture?**

The back-end cluster is a component of the Power BI service architecture that is responsible for processing and managing the data and queries that are sent to the service. It is made up of a group of servers that work together to handle the workload of the Power BI service.

The back-end cluster is responsible for a number of tasks, including:

Receiving and processing requests from users and other components of the Power BI service.

Storing and managing data, including data that is imported into Power BI and data that is generated by the service.

Providing data to the front-end cluster, which is responsible for rendering the data and visualizations in the Power BI service and mobile apps.

Executing queries and calculations on the data and returning the results to users and other components of the service.

Managing and maintaining the data in the Power BI service, including tasks such as data refresh, security, and performance optimization.

Overall, the back-end cluster is a critical component of the Power BI service architecture, as it is responsible for handling and processing the data that is used by the service.

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

ASP.NET is a web development framework that is used to build web applications and services. It is not a component of the Power BI service architecture.

Power BI is a business analytics service provided by Microsoft. It allows users to visualize and analyze data, share insights, and collaborate with others in real-time. Power BI includes a cloud-based service, as well as desktop and mobile applications. The Power BI service architecture includes a number of components, such as the Power BI service, the Power BI mobile apps, the Power BI Gateway, and various connectors and integrations.

**Compare Microsoft Excel and PowerBi Desktop on the following features:**

* **Data import:** Both Excel and Power BI Desktop can import data from a wide variety of sources, including other spreadsheet programs, databases, and text files. However, Power BI Desktop has more advanced connectivity options, such as the ability to connect to online services like web pages and APIs.
* **Data transformation:** Both Excel and Power BI Desktop allow you to manipulate and transform data using functions and formulas. However, Power BI Desktop has more advanced options for data transformation, such as the ability to use the M language to create custom functions and the ability to use data wrangling tools to shape and clean data.
* **Modeling**: Both Excel and Power BI Desktop allow you to create relationships between tables and create calculated columns and measures. However, Power BI Desktop has more advanced modeling features, such as the ability to create hierarchies and the ability to use the DAX language to create more complex calculations.
* **Reporting**: Both Excel and Power BI Desktop allow you to create charts and graphs to visualize your data. However, Power BI Desktop has more advanced reporting options, such as the ability to create interactive dashboards and the ability to publish reports to the web.
* **Server Deployment**: Excel does not have the ability to deploy reports or models to a server, while Power BI Desktop does. Power BI Desktop allows you to publish your reports and dashboards to the Power BI service, where they can be shared with others and accessed on the web.
* **Convert Models**: Excel does not have the ability to convert models to other formats, while Power BI Desktop does. Power BI Desktop allows you to save your models in a variety of formats, including Excel, CSV, and PDF.
* **Cost**: Excel is a part of the Microsoft Office suite of products and is available for purchase as a standalone product or as part of an Office 365 subscription. Power BI Desktop is a free tool, but the Power BI service, which is required for server deployment and some other features, requires a subscription.

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

1. Excel
2. CSV
3. Text
4. PDF
5. XML
6. JSON
7. Access
8. SQL Server
9. Oracle
10. IBM DB2
11. MySQL
12. PostgreSQL
13. Sybase
14. Teradata
15. SAP HANA
16. Azure SQL Database
17. Azure SQL Data Warehouse
18. Azure Synapse Analytics
19. Azure Cosmos DB
20. Azure Blob Storage