**Power BI Assignment 2**

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

One of the key advantages of natural language queries in Power BI is that they allow users to interact with data and create visualizations without needing to have expertise in data analysis or query languages. Instead of writing complex queries, users can ask questions using natural language, and Power BI will generate the appropriate visualizations to answer those questions. Another advantage of natural language queries in Power BI is that they can help users identify insights and patterns in data more easily.

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

In the Power BI service architecture, the Web Front End (WFE) cluster refers to the set of servers that handle incoming user requests and manage the web interface for the Power BI service. The WFE cluster is responsible for handling user authentication, serving up the Power BI portal, and managing user sessions. It also handles load balancing, ensuring that user requests are distributed evenly across the available servers to avoid overloading any one server.

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

* In the Power BI service architecture, the back-end cluster refers to the set of servers that are responsible for managing and processing data within the service.
* The back-end cluster is responsible for data ingestion, processing, and storage. It includes components such as the Data Management Gateway, which allows users to connect to on-premises data sources, and the Power BI data model, which allows users to create relationships between data sources and build complex visualizations.
* The back-end cluster also includes the Power BI Query Engine, which is responsible for executing user queries and generating the data that is displayed in visualizations. The Query Engine uses a variety of techniques, such as in-memory caching and query optimization, to ensure that queries are executed quickly and efficiently.
* Another important component of the back-end cluster is the Power BI Data Center, which provides the underlying infrastructure and services that support the Power BI service. This includes components such as networking, storage, and virtual machines.

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

In the Power BI service architecture, the ASP.NET component is a web development framework used for building web applications and services. It is used in the back-end of the Power BI service to develop and manage the web interface for the service. ASP.NET provides a set of libraries and tools that developers can use to build web applications, including features such as user authentication, session management, and caching. In the Power BI service, ASP.NET is used to develop the server-side code that runs in the background and provides the core functionality of the service.

Some specific uses of ASP.NET in the Power BI service include:

* Providing user authentication and access control for the service
* Managing user sessions and storing user-specific data
* Handling user requests and managing server-side processes
* Providing the back-end functionality for features such as data ingestion, processing, and storage
* Managing the interaction between the front-end web interface and the back-end data processing components

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

**Data import:**

Excel: Supports importing data from a variety of sources, including files, databases, and web services.

Power BI Desktop: Supports importing data from a wide range of sources, including files, databases, and cloud-based services.

**Data transformation:**

Excel: Offers basic data transformation features such as filtering, sorting, and grouping.

Power BI Desktop: Provides advanced data transformation capabilities, such as data shaping, data cleaning, and data modeling.

**Modeling:**

Excel: Offers basic modeling features such as pivot tables and charts.

Power BI Desktop: Provides advanced modeling capabilities, such as data modeling, hierarchies, and relationships.

**Reporting:**

Excel: Provides basic reporting features such as charts, tables, and graphs.

Power BI Desktop: Offers advanced reporting capabilities such as interactive visualizations, dashboards, and drill-down reports.

**Server Deployment:**

Excel: Does not have server deployment capabilities.

Power BI Desktop: Provides server deployment options, including Power BI Service and Power BI Report Server.

**Convert Models:**

Excel: Does not support converting models.

Power BI Desktop: Supports converting models between different formats.

**Cost:**

Excel: Requires a one-time purchase or subscription for Microsoft Office.

Power BI Desktop: Free to download and use, but requires a Power BI Premium license for certain features.

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

* Excel workbooks (.xlsx, .xls)
* CSV files
* Text/CSV files
* JSON files
* XML files
* Web pages
* SharePoint lists
* Microsoft Access databases
* SQL Server databases
* Oracle databases
* IBM DB2 databases
* MySQL databases
* PostgreSQL databases
* Sybase databases
* Amazon Redshift databases
* Microsoft Azure SQL Database
* Google BigQuery
* Salesforce reports and dashboards
* Dynamics 365
* Facebook Ads