**PowerBI Assignment 2**

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

Natural Queries in Power BI, also known as Q&A (Question and Answer), allow users to query and visualize their data using plain language questions, making it more accessible and user-friendly. Here are some advantages of Natural Queries in Power BI

**Advantages of Natural Queries in Power BI** with an example:

1. Accessibility: Enables users of all technical levels to interact with data.
2. Intuitive: Users can ask questions in plain language.
3. Time-saving: No need to create predefined reports.

**Example**: "Show total 2023 sales for electronics."

In summary, Natural Queries in Power BI simplify data exploration and analysis by allowing users to interact with their data using everyday language, saving time and making it more accessible to a broader audience.

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

In the Power BI Service Architecture, the Web Front End (WFE) cluster plays a critical role in delivering the web-based user interface and managing user interactions. Here's an explanation of the WFE cluster's role: -

1. Delivers the Power BI web interface to users.
2. Utilizes load balancing for scalability and reliability.
3. Handles user authentication and authorization.
4. Manages user sessions for seamless interactions.
5. Communicates with other service components for data retrieval.
6. Enforces security measures to protect user data and service integrity.

In summary, the Web Front End (WFE) cluster in the Power BI Service Architecture is a critical component that handles user interactions, delivers the web interface, manages user authentication and authorization, and ensures a secure and responsive user experience. It works in conjunction with other components to provide users with access to their reports and dashboards.

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

In the Power BI Service Architecture, the Back End cluster is a critical component that manages data processing, storage, and management tasks. Here's an explanation of the Back End cluster's role:

1. Data processing and transformation.
2. Data storage and retrieval.
3. Data refresh for up-to-date reports.
4. Data security and access control.
5. Metadata management for datasets and reports.
6. Query optimization for improved performance.
7. Integration with the Web Front End cluster.
8. Scalability and high availability for consistent service.

In summary, the Back End cluster in the Power BI Service Architecture is responsible for data processing, storage, security, and management tasks. It plays a pivotal role in making data available, secure, and accessible to users through the Power BI platform.

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

ASP.NET is a critical component responsible for handling web application functionality and user interactions. Here's what ASP.NET does in this context:-

**ASP.NET in Power BI Service Architecture helps in :**-

1. Hosts the Power BI web application.
2. Generates the user interface.
3. Manages user authentication and authorization.
4. Handles user requests and interactions.
5. Manages user sessions for a personalized experience.
6. Integrates with Back End components for data retrieval.
7. May work with load balancers for scalability.
8. Enforces security measures for user data protection.

ASP.NET is a crucial component in the Power BI Service Architecture that hosts the web application, handles user interactions, manages user sessions, and ensures secure and efficient operation of the Power BI web interface.

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

| **Feature** | **Microsoft Excel** | **Power BI** |
| --- | --- | --- |
| **Data Import** | Supports various sources but may require manual entry or connections | Streamlines data import with built-in connectors |
| **Data Transformation** | Basic capabilities using formulas, pivot tables, and Power Query | Robust data transformation with Power Query |
| **Modeling** | Limited modeling with PivotTables | Comprehensive modeling with relationships and DAX |
| **Reporting** | Suitable for basic visualization | Designed for interactive and visually appealing reports |
| **Server Deployment** | Typically standalone; sharing via files or SharePoint | Integration with Power BI Service for cloud-based sharing |
| **Convert Models** | Limited options for direct conversion | Easy conversion to Power BI Service models |
| **Cost** | Included with Microsoft 365 subscription, cost varies | Free to download, additional costs for Pro or Premium |

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

Power BI Desktop supports a wide range of data sources. Here's a list of 20 commonly used data sources:-

SQL Server Database

Excel Workbook

SharePoint List

Web Content (HTML, XML, JSON)

Azure SQL Database

Azure Data Lake Storage

Azure Blob Storage

Oracle Database

MySQL Database

PostgreSQL Database

IBM Db2 Database

Salesforce

Google Analytics

SharePoint Online

Dynamics 365

Web API (REST and OData)

Hadoop HDFS

Facebook

JSON file

XML file