Power BI Assignment 2

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

Ans. Natural Queries in Power BI allow users to ask questions in a natural language format, such as English, rather than using a specialized query language. This can make it easier for users to interact with the data and find the information they need without having to have a deep understanding of the underlying data structure or query languages.

One of the main advantages of using Natural Queries in Power BI is that it can improve the user experience by allowing users to quickly and easily explore the data in a way that is intuitive and familiar to them. For example, a user could ask "What were the top selling products last quarter?" and the system would understand the question and provide an answer in the form of a chart or table.

Another advantage is that it can make it easier for non-technical users to access and understand the data. For example, a business analyst who is not well-versed in SQL could still easily get the information they need by asking a question in natural language.

Additionally, it can help to increase the adoption of self-service BI by making it more accessible to a broader range of users.

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

Ans. In the architecture of Power BI Service, the Web Front End (WFE) cluster is responsible for handling and processing incoming requests from users. The WFE cluster acts as a reverse proxy, directing incoming requests to the appropriate backend service or cluster based on the type of request.

The WFE cluster is made up of one or more servers that are load balanced to handle incoming requests. These servers are responsible for handling the following tasks:

- Authenticating users: The WFE cluster checks user credentials and verifies that the user has the appropriate permissions to access the requested resources.
- Routing requests: The WFE cluster directs incoming requests to the appropriate backend service or cluster based on the type of request.
- Processing requests: The WFE cluster processes requests for data and metadata, and returns the results to the user.
- Caching: The WFE cluster stores commonly requested data and metadata in memory to improve performance by reducing the number of requests to the backend services or clusters.
- Security: The WFE cluster is responsible for ensuring that requests are secure and that sensitive data is protected.

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

Ans. In the architecture of Power BI Service, the Back End (BE) cluster is responsible for handling and processing the data and metadata that is used to generate reports and visualizations.

The Back End cluster is made up of one or more servers that work together to handle the following tasks:

- Data processing: The BE cluster processes large amounts of data to create the models and data sets that are used in reports and visualizations.
- Data storage: The BE cluster stores the data and metadata that is used to generate reports and visualizations.
- Query processing: The BE cluster processes user queries and returns the results to the Web Front End cluster.
- Data refresh: The BE cluster is responsible for scheduling and running data refreshes to ensure that the data and metadata used in reports and visualizations is up-to-date.
- Security: The BE cluster is responsible for ensuring that data and metadata is protected and that only authorized users have access to i

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

Ans. ASP.NET is a web application framework that is used in the Power BI Service architecture to handle and process incoming requests from users.

In Power BI Service, ASP.NET is used to handle the following tasks:

- Request handling: ASP.NET receives and processes incoming requests from users, such as requests for reports and visualizations.
- User authentication: ASP.NET is responsible for authenticating users and verifying that they have the appropriate permissions to access the requested resources.
- Authorization: ASP.NET is responsible for ensuring that users only have access to the resources they are authorized to access.
- Session management: ASP.NET manages user sessions and ensures that each user's session is separate and secure.
- Error handling: ASP.NET handles and logs errors that occur during the processing of requests.
- Routing: ASP.NET routes requests to the appropriate backend service or cluster based on the type of request.

5. Compare Microsoft Excel and PowerBi Desktop on the following features: Data import, Data transformation, Modelling, Reporting, Server Deployment, Convert Models, Cost

Ans. Compare between Microsoft Excel and PowerBi Desktop

- Data Import: Both Microsoft Excel and Power BI Desktop allow users to import data from a variety of sources, including Excel files, CSV files, and databases. However, Power BI Desktop has more advanced data import capabilities, such as the ability to import data from cloud services like Azure, Salesforce, and Google Analytics.
- Data Transformation: Both Excel and Power BI Desktop have tools for data transformation, such as pivot tables and formulas. However, Power BI Desktop has more advanced data transformation capabilities, such as the ability to create custom data transformations using the Power Query Editor.

- Modeling: Both Excel and Power BI Desktop allow users to create data models, but Power BI Desktop has more advanced modeling capabilities, such as the ability to create relationships between tables and create calculated columns and tables.
- Reporting: Both Excel and Power BI Desktop allow users to create reports and visualizations, but Power BI Desktop has more advanced reporting capabilities, such as the ability to create interactive and dynamic reports, and the ability to create reports that can be easily shared and accessed by multiple users.
- Server Deployment: Excel is primarily a desktop application, while Power BI Desktop is designed to be used in conjunction with the Power BI Service, which allows users to publish and share their reports and visualizations with others. Power BI Report Server allows users to deploy Power BI reports on-premises, but it's a separate add-on product.
- Convert Models: Power BI Desktop offers the ability to convert Excel data models to Power BI models, which can be beneficial in cases where users want to take advantage of the more advanced modeling capabilities offered by Power BI.
- Cost: Microsoft Excel is part of the Microsoft Office Suite and is often included in business or enterprise-level Office plans. Power BI, on the other hand, is generally available as a separate subscription service, with different pricing plans for personal use, professional use, and enterprise use.

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

Ans. Below are the list of 20 data sources supported by Power Bi desktop

- Excel
- CSV
- Text
- JSON
- XML
- Access
- SQL Server
- Oracle
- IBM DB2
- MySQL
- PostgreSQL
- Sybase
- Teradata
- SharePoint List
- OData Feed
- Web
- Hadoop (HDInsight)
- Spark (HDInsight)
- Power Query
- Analysis Services (Tabular or Multidimensional)