**Power BI Assignment 2**

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

Sol:

The Q&A feature in Power BI lets you explore your data in your own words using natural language. Q&A is interactive, even fun. Often, one question leads to others as the visualizations reveal interesting paths to pursue. Asking the question is just the beginning. Travel through your data, refining or expanding your question, uncovering new information, zeroing in on details, or zooming out for a broader view. The experience is interactive and fast, powered by an in-memory storage.

Some Examples include:

* **Ask natural questions** Which sales has the highest revenue?
* **Use relative date filtering** Show me sales in the last year
* **Return only the top N** Top 10 products by sales
* **Provide a filter** Show me sales in the USA
* **Provide complex conditions** Show me sales where product category is Category 1 or Category 2
* **Return a specific visual** Show me sales by product as pie chart

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

Sol:

The **WFE** cluster manages the initial connection and authentication process for Power BI, using AAD to authenticate clients and provide tokens for subsequent client connections to the Power BI service. Power BI also uses the **Azure Traffic Manager** (ATM) to direct user traffic to the nearest datacentre, determined by the DNS record of the client attempting to connect, for the authentication process and to download static content and files. Power BI uses the **Azure Content Delivery Network** (CDN) to efficiently distribute the necessary static content and files to users based on geographical locale.

Explain Back End cluster from Power BI Service Architecture?

Sol:

The Back-End cluster is **how authenticated clients interact with the Power BI service**. The Back-End cluster manages visualizations, user dashboards, datasets, reports, data storage, data connections, data refresh, and other aspects of interacting with the Power BI service. The **Gateway Role** acts as a gateway between user requests and the Power BI service. Users do not interact directly with any roles other than the **Gateway Role**. **Azure API Management** will eventually handle the **Gateway Role**.

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

Sol:

The ASP.NET component within the WFE cluster parses the token to determine which organization the user belongs to, and then consults the Power BI Global Service. The WFE specifies to the browser which back-end cluster houses the organization's tenant.

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

* Data import: **Power BI can connect to a large number of data sources**, while Excel's connectivity capacity is limited. Also, unlike Excel, Power BI can be easily used from mobile devices.
* Data transformation: **Excel** is used to **organize data, transform it and perform mathematical operations** and calculations. On the other hand, **Power BI** was conceived as a **business intelligence and data visualization tool for businesses**.
* Modelling: **While excel is designed to work on simple and structured data PowerBi can work efficiently on building complex models easily**
* Reporting: **Power BI dashboards** are **more visually appealing, interactive and customizable** than those in Excel.
* Server Deployment: Server deployment of excel files are complex, while powerbi not only deploys but also allows to create beautiful dashboards out of it.
* Convert Models: Data in excel is not automatically updated but in powerbi it is automatically updated.
* Cost: Excell has a payment tool, powerbi has both fee and payment option.

List 20 data sources supported by Power Bi desktop.

* Excel Workbook
* Text/CSV
* XML
* JSON
* Folder
* PDF
* Parquet
* SharePoint folder
* SQL Server database
* Access database
* SQL Server Analysis Services database
* Oracle database
* IBM Db2 database
* IBM Informix database (Beta)
* IBM Netezza
* MySQL database
* PostgreSQL database
* Sybase database
* Teradata database
* SAP HANA database
* SAP Business Warehouse Application Server
* SAP Business Warehouse Message Server
* Amazon Redshift