**Power BI Assignment 2**

**Explain the advantages of Natural Queries in PowerBi with an example?**  
It’s a feature within the Power BI online service and embedded in the Power BI desktop as well.

In the dashboard, there is a search bar that says ****Ask a question about your data.**** It will give you some suggestions to start with. Example if we type profit by region in bar graph it will generate the insight

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

The WFE cluster provides the user's browser with the initial HTML page contents on site load, as well as pointers to CDN content used to render the site in the browser. A WFE cluster consists of an ASP.NET website running in the [Azure App Service Environment](https://learn.microsoft.com/en-us/azure/app-service/environment/intro). When users attempt to connect to the Power BI service, the client's DNS service may communicate with the Azure Traffic Manager to find the most appropriate (usually nearest) datacenter with a Power BI deployment. 

**Explain Back End cluster from Power BI Service Architecture?**Each back-end cluster consists of multiple virtual machines combined into multiple resizable-scale sets tuned for performing specific tasks.  
Tenant metadata and data are stored within cluster limits except for data replication to a secondary back-end cluster in a paired Azure region in the same Azure geography. The secondary back-end cluster serves as a failover cluster in case of regional outage, and is passive at any other time.

Back-end functionality is served by micro-services running on different machines within the cluster's virtual network that are not accessible from the outside.

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

The front end services are used for establishing an initial connection and authenticating clients using Azure Active Directory. The Azure Active Directory stores user identities.

Along with this, Azure Traffic Manager is used to direct user requests to the nearest data center after authentication. Once a client/user is authenticated, the Azure Content Delivery Network (CDN) distributes static Power BI content/files to users.

Compare Microsoft Excel and PowerBi Desktop on the following features:

**Data import -** Power BI can connect with different varieties of sources while Microsoft Excel can connect to limited sources.

**Modeling -** The Data Model for Microsoft Excel is focused on keeping it simple while offering you a wide array of features, while for Power BI the Data Model is primarily focused on Data Ingestion along with the ability to build more complex structures on top of it.

**Reporting -** power bi has multiple reports for creation while excel has few.

**Cost -** Power BI Desktop is free to download and use for personal use, but it takes  $10 per month per user to share reports with others.Since we already have Excel, we need to spend additional money to procure this and build dashboards.

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

An important component of Power BI is its vast range of data sources. You can import data from files in your system, cloud-based online data sources or connect directly to live connections. If you import from data on-premise or online services there is a limit of 1 GB. Some commonly used data sources in Power BI are:

* Excel
* Text/CSV
* XML
* JSON
* Oracle Database
* IBM DB2 Database
* MySQL Database
* PostgreSQL Database
* Sybase Database
* Teradata Database
* SAP HANA Database
* SAP Business Warehouse server
* Amazon Redshift
* Impala
* Google BigQuery (Beta)
* Azure SQL Database
* Salesforce Reports
* Google Analytics
* Facebook
* GitHub