**Power BI Assignment 2**

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

A natural language query is input that consists solely of terms or phrases spoken normally or entered as they might be spoken, without any non-language characters, such as the plus symbol or the asterisk, and without any special format or alteration of syntax. Natural language queries may be conducted through a text or voice interface.

Natural language processing ([NLP](https://www.techtarget.com/searchbusinessanalytics/definition/natural-language-processing-NLP)) makes it possible for software to “understand” typical human speech or written content as input and possibly respond to it, depending on the application. A [virtual assistant](https://www.techtarget.com/searchcustomerexperience/definition/virtual-assistant-AI-assistant), for example, is designed to respond to spoken input or text. However, no software is capable of actually deriving meaning from human language as it is spoken, so NLP involves processes to translate language between the two.

NLP applies syntax techniques such as parsing for a grammatical analysis, word segmentation to break text up into smaller units, sentence breaking to apply meaningful boundaries in unbroken text, morphological segmentation to identify the structure and form of words and [stemming](https://www.techtarget.com/searchenterpriseai/definition/stemming), reducing words to the stems to which suffixes and prefixes attach. In addition to these processes, NLP uses techniques including named entity recognition ([NER](https://www.techtarget.com/whatis/definition/named-entity-recognition-NER)) and word sense disambiguation to understand input user queries, translate and return them as human-understandable responses through natural language generation ([NLG](https://www.techtarget.com/searchenterpriseai/definition/natural-language-generation-NLG)).

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

The Web Front End (**WFE**) cluster. The **WFE** cluster manages the initial connection and authentication to the Power BI service. The **Back-End** cluster. Once authenticated, the **Back-End** handles all subsequent user interactions. Power BI uses Azure Active Directory (Azure AD) to store and manage user identities. Azure AD also manages data storage and metadata using Azure BLOB and Azure SQL Database, respectively.

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

The Back-End cluster **determines 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

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

*Power BI is a business suite that includes several technologies that work together.* To deliver outstanding business intelligence solutions, Microsoft Power BI technology consists of a group of components such as:

* Power Query (for data mash-up and transformation)
* Power BI Desktop (a companion development tool)
* Power BI Mobile (for Android, iOS, Windows phones)
* Power Pivot (for in-memory tabular data modeling)
* Power View (for viewing data visualizations)
* Power Map (for visualizing 3D geo-spatial data)
* Power Q&A (for natural language Q&A)

In simple terms, a Power BI user takes data from various data sources such as **files, Azure source, online services, DirectQuery or gateway sources.** Then, they work with that data on a client development tool such as [***Power BI Desktop***](https://data-flair.training/blogs/power-bi-desktop/)***.*** Here, the imported data is cleaned and transformed according to the user’s needs.

Once the data is transformed and formatted, it is ready to use in making visualizations in a report. A report is a collection of visualizations like *graphs, charts, tables, filters, and slicers.*

Moving on to the chain of processes, you can publish the reports created in Power BI desktop on two kinds of platforms; **Power BI Service** and [***Power BI Report Server***](https://data-flair.training/blogs/power-bi-report-server/).

Power BI Service is a cloud-based public platform whereas Power BI Report Server is an on-premise platform protected by firewall security.

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

Data import

Data transformation

Modeling

Reporting

Server Deployment

Convert Models

Cost

|  |  |  |
| --- | --- | --- |
| Features | Power BI | Excel |
| Duplicate Tables | Can’t display duplicated tables | Allows you to display duplicated tables |
| Reports | More visually appealing, customized, appealing, and interactive reporting. | Reports are simpler and less appealing than those in Power BI. |
| Data Model | Ideal for quickly creating complex data models. | Works with simple and structured data model |
| **Cost to Acquire** | 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. |

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

* 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
* Impala
* Google BigQuery
* Vertica
* Snowflake
* Essbase
* Actian (Beta)
* Amazon Athena
* AtScale cubes
* BI Connector
* Data Virtuality LDW
* Denodo
* Dremio Software
* Dremio Cloud (Beta)
* Exasol