---------------------------------------------Power-Bi-Assignment\_no\_02--------------------------------------------------

Q1. Explain the advantages of Natural Queries in PowerBi with an example?

Ans: Advantages of Natural queries in power bi are:

1. Simplifying employee access to BI data:

Natural language querying is designed to simplify the user interface in business intelligence applications. It enables both BI professionals and business users to generate queries and explore analytics data in natural language, using voice or text. Early implementations are focused mainly on enabling a larger number of employees to get information on common business metrics.

Example : Voice interfaces like Alexa will make it easier for these users to [take advantage of voice-enabled technology](https://www.techtarget.com/searchcio/opinion/What-technical-challenges-face-voice-AI-technology-There-are-many) to ask questions and get understandable answers in a natural manner, . For example, Micro Strategy has created NLP capabilities that can formulate a data visualization from a sentence of text entered by a user; it also has added Alexa connectivity and Chabot support.

2. Driving deeper business insights

Some experts believe that natural language querying could help drive deeper insights by lowering the expertise required to interact with [BI and analytics tools](https://www.techtarget.com/searchbusinessanalytics/feature/How-to-evaluate-and-select-the-right-BI-analytics-tool). Instead of being limited to [BI analysts](https://www.techtarget.com/searchbusinessanalytics/feature/What-does-a-business-intelligence-analyst-do), data scientists and other skilled analytics professionals, the tools become directly accessible to business users

Many deep insights come about through careful iterative processes where queries lead to noisy results with a very subtle signal hidden within, and through careful clean-up, cross-analysis and projections, the noise is cleaned, the signal becomes clearer and deep insights emerge

For example, if a user might be challenged in searching for a data element on credit card numbers across several data sources that use different names for the field, a natural language query could help identify and locate the various instances.

3. Reducing confusion about analytics results:

To aid in the querying process, NLG technology enables BI tools to create narratives from data so that trends, variances and exceptions can be both visualized and described. The adage "A picture is worth a thousand words" is often true, but in many cases, there are different ways to interpret that picture -- or data visualization.

"Narration describes a visualization so there is no ambiguity [about] what it means, additionally, for many [BI team members](https://www.techtarget.com/searchbusinessanalytics/answer/Key-roles-and-responsibilities-of-a-business-intelligence-team) or business analysts, creating a narration of analytics results takes up huge amounts of time. NLG accelerates that activity in a profound way,

4 .Applying structure to unstructured data

The flip side of natural language querying on the front end lies in applying NLP techniques to help analyze [unstructured data](https://www.techtarget.com/searchbusinessanalytics/definition/unstructured-data). "NLP makes sense of that unstructured data, making it organized, queryable and searchable,

Example: A common example of unstructured data is social media data on a company's brand. Business executives want to know what people are saying and how they feel about the brand. NLP can both categorize social media mentions by topic and analyze the sentiments in posts. Those kinds of capabilities give business users a new way to query and analyze all the unstructured data in corporate systems, which an often-cited statistic says could be [up to 80%](https://www.capgemini.com/2018/08/reorganizing-unstructured-data/) of enterprise data overall.

Q2. Explain Web Front End (WFE) cluster from Power BI Service Architecture?

Ans: The front end also called the web front-end cluster acts as an intermediary between clients and the back end. 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.

Q3) 3. Explain Back End cluster from Power BI Service Architecture?

Ans: The Power BI services at the back end take care of visualizations, datasets, storage, reports, data connections, data refreshing, and other interactions with Power BI. At the back-end, a web client has only two direct points of interaction, **Azure API Management**, and **Gateway Role**. These two components are responsible for load balancing, authentication, authorization, routing, etc.

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

Ans: ASP.NET component is used to publish the power bi report in asp.net web application

There are two ways how to do it:

* Use embedded Power BI report in iframe – use this option if users are authenticated using Azure AD. It’s the fastest way to get work done.
* Use C# and JavaScript to embed Power BI report – use this option if users are authenticated using Azure AD or if you have service account for Power BI that all users must use. This option is also good if you need more server-side control over Power BI service.

Q5 Compare Microsoft Excel and PowerBi Desktop on the following features:

Data import

Data transformation

Modelling

Reporting

Server Deployment

Convert Models

Cost

Ans:

Data import: Excel has limitations in the amount of data it can work with. In contrast, Power BI can handle much larger amounts of data. 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: provides strong graphical and data transformation capabilities in reports, dashboards, and customized, appealing, interactive, and simple-to-understand visualizations.

Modelling: Excel is totally focused on simple and structured data models with wide range of features . Power-Bi is focused on data ingest and building complex data models easily

Reporting: reporting in power bi is more visually appealing, customized, appealing, and interactive reporting. Reports in excel are simpler and less appealing than those in Power BI.

Server Deployment: power bi supports server deployment whereas excel does not supports server deployment.

Cost: powerbi has a free version and a payment version. . Excel has a payment tool.

Q6. List 20 data sources supported by Power Bi desktop.

Ans: The 20 data sources supported by powerbi desktop are:

1. Text/CSV
2. XML
3. JSON
4. Oracle Database
5. IBM DB2 Database
6. MySQL Database
7. PostgreSQL Database
8. Sybase Database
9. Teradata Database
10. SAP HANA Database
11. SAP Business Warehouse server
12. Amazon Redshift
13. Impala
14. Google Big Query (Beta)
15. Azure SQL Database
16. Salesforce Reports
17. Google Analytics
18. Facebook
19. GitHub
20. Snowflake