**Power BI Assignment 2**

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

Natural language queries in power BI provide several advantages, making data analysis more accessible to a wider audience. Some key benefits are ease of use, increase accessibility, quick insights.

Example – lets say you have a sale dataset in power BI instead of writing a traditional query user can simply type or speak, “ Show me the total sales by region for the last quarter.” Power BI natural language processing would interrupt this query, generate the appropriate visualizations, and present the user with a clear report showcasing the total sales by region for the specific time period. This approach is more intuitive and user friendly compared to writing complex queries or navigating through the data model, making data exploration and analysis more accessible to a broader audience within an organization.

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

In power Bi service architecture Web Front End cluster plays a crucial role in handling user interactions, rendering reports on managing the overall user experience. Its serves as the user-facing components, handling requests, rendering reports and providing a responsive and interactive experience through a scalable and fault tolerant cluster of web servers. This architecture ensures that user can efficiently interact with and drive insights from their power Bi reports and dashboards.

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

The Back End cluster in Power BI Service Architecture is a vital component responsible for data processing, storage and coordination of various back end services. It collaborates with the web front-end to deliver a seamless and responsive experience for user interacting with power Bi reports and dashboards the scalable and efficient design of the back end cluster contributes to the overall performance and reliability of the power Bi service.

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

ASP.Net serves the technologies stack for building the web front end component of the power Bi service. It is responsible for creating a user friendly interface, handling user interactions and facilitating communication between user and backend services. The Architecture allow users to seamlessly access and interact with their power Bi reports and dashboards through web browsers.

**5. Compare Microsoft Excel and PowerBi Desktop on the following features.**

Data import

Data transformation

Modeling

Reporting

Server Deployment

Convert Models

Cost

|  |  |  |
| --- | --- | --- |
| Feature | Microsoft Excel | PowerBi Desktop |
| Data import | Excel allows data inmporting from various sources including databases, text files and online sources.It Supports importing data through built-in connectors. | Power Bi desktop excels in data iomport with a wide range of connectors for different data sources. It offers a more extensive set of options for connecting to and importing data. |
| Data transformation | Excel provides basic data transformation capabilities through functions and formulas. Power query in excel enhances data transformation but may not be as robust as power bi power query . | Power Bi desktop has a dedicated tool called power query for advanced data transformation. It offers a visual and powerful ETL (Extract ,Transform, Load) process to clean and shape data. |
| Modeling | Excel has data modelling features but they are generally more manual. Pivot takes and pivot charts are commonly used for basic modelling | Power Bi desktop excels in data modelling with a robust and user friendly interface. It support relationships, calculated columns, measures and DAX for advanced modelling. |
| Reporting | Excel is strong in creating tabular reports and basic charts, its suitable for smaller data sets and simple reporting needs | Power Bi desktop is designed for sophisticated reporting. It offers a wide range of visualizations, interactive reports and features like drill-downs , slicers and book marks for dynamic and compelling reports |
| Server Deployment | Excel workbooks can be shared via email or stored on shared drives it lacks centralized server deployment for collaborative and enterprise level used. | Power Bi reports can be deployed to the power Bi service, providing a centralized and cloud based platform for sharing and collaboration. it supports collaboration, sharing and updates in real time. |
| Convert Models | Excel models can be converted to power Bi datasets but the process may require adjustments its not always seamless due to differenced in feature and capabilities | Power Bi models can be easily shared and published to the power Bi services. Power Bi models can also be reused in other power Bi reports, ensuring consistency and reusability. |
| Cost | Excel is often included in Microsoft office studies there may be additional cost for advanced features like power pivot depending on the specific office 365 plan. | Power Bi desktop is a free tool for creating reports. Costs are associated with sharing and collaboration which involves using the power bi service or power bi pro license. |

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

Here are 20 data sources supported by Power Bi desktop:

1. Excel workbook

2. CSV

3. Text/CSv

4. SQl server database

5. Azure sql database

6. Azure sql data warehouse

7. Oracle database

8. MySql database

9. PostgreSQL

10. Web

11. Share point list

12. Folder

13. Json

14. XML

15. OData Feed

16. Hadoop file

17. Azure blob storage

18. Azure table storage

19. Web API

20. Dynamics 365 business central.