**Power BI Assignment 2**

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

Ans=>Power Bi provides users with a way to interact with their data using everyday language rather than requiring them to write complex queries or understand the underlying data model.

a) **Accessibility:** Instead of writing a complex DAX query, user can simply ask a question in natural language.

b) **Time Efficiency:** Instead of spending time creating complex reports users can quickly get answers to their questions by typing or speaking natural language queries.

c) **Ease of Use:** Users can questions like “Show me the average revenue per product category” or “what are top selling products”.

d) **Flexibility:** Users can ask follow up questions or refine their queries based on the initial results, allowing for an interactive exploration of the data.

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

Ans=> The web front end cluster in the power bi service architecture is responsible for handling user requests that come through the web interface.

Characteristics: the WFE cluster is the point of interaction for users accessing power bi content through their browsers.

To ensure high availability and scalability multiple services are typically configured in a WFE cluster. Load balancing distributes user requests across these services to optimize performance and prevent overloading any single server.

Security: the WFE cluster is responsible for enforcing security measures ensuring that users only access the data and reports they are authorized to see.

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

Ans=> The architecture and components may have evolved since then, so its, advisable to consult the latest documentation for any updates. Back end cluster in the power bi is responsible for handling the backend processing, storage and management of data processing, storage and retrieval. Data Processing the backend cluster is involved in processing data which includes tasks such as refreshing, aggregating data for reports and performing calculations defined in Power Bi reports.

Back end cluster handles the scheduled or ondemand data refresh processes. The back end cluster is designed to scale horizontally or vertically to handle increasing workloads and growing datasets.

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

Ans=>

ASP.NET is a server side web framework developed by Microsoft and it is part of the broder .NET framework.

**ASP.NET web application:** Power Bi service usses ASP.NET to build the web front end that users interact with.

**ASP.NET Middleware:** middleware components in the ASP.NET stack handle various aspects to the request-response pipeline. They might include components for logging, security and other cross cutting concerns.

**Communication with backend services:** ASP.NET is involved in transmitting data between the client and server ensuring the secure and efficient exchange of information.

**ASP.NET Web API:** PowerBI service exposses web APIs for programmatic access to its functionalities.

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

Data import

Data transformation

Modeling

Reporting

Server Deployment

Convert Models

Cost

Ans=>

**Data Import:**

Microsoft Excel: Excel Supports importing data from various sources, including databases, CSV files, and online services.

Power BI: Power Bi is robust data connectivity with a wide range of sources, including, databases, cloud services, and online platforms.

**Data transformation:**

Excel**:** allows basic data transformations using functions and formulas.

May require manual steps for complex transformations.

Power BI:

Power Query Editor in Power BI Desktopprovides advanced data transformation capabilities with a graphical interface.

Supports extensive data shaping and cleaning operations**.**

**Modeling:**

Microsoft Excel:

Supports basic data modeling with Pivot Tables and PivotCharts.

Relationships and modeling capabilities are limited compared to Power BI.

Power BI Desktop: Offers advanced data modelling with relationships, hierarchies, and calculated columns.

Optimized for creating robust and scalable data models for business intelligence.

**Reporting:**

Microsoft Excel:

Excel provides basic reporting features with charts, graphs, and tables.

Customization options are available but are often less dynamic than Power BI.

Power BI Desktop:

Specialized in creating dynamic and interactive reports and dashboards.

Offers a wide range of customizable visuals and supports real-time updates.

**Server Deployment:**

Microsoft Excel:

Excel workbooks can be shared via email or stored on cloud platforms.

Limited centralized management and version control.

Power BI Desktop:

Reports and dashboards can be deployed to the Power BI service for centralized management. Supports collaboration, sharing, and access control through the Power BI service.

**Convert Models:**

Microsoft Excel:

Limited ability to convert Excel models to other formats directly.

Power BI Desktop:

Can export Power BI Desktop models to Power BI service or other compatible formats. Supports seamless conversion and deployment of models.

**Cost:**

Microsoft Excel:

Part of Microsoft Office suite; licensing costs are associated with the entire suite.

No additional costs for using Excel itself.

Power BI Desktop:

Power BI Desktop is free to download and use.

Costs may be associated with Power BI Pro or Premium licenses for sharing and collaboration features.

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

Ans=> Excel Workbook, CSV, SQL, Azure SQL databases, Oracle Database, MySQL Database, PostgreSQL, SharePoint List, Web, JSON, XML, Folder, Azure Data Lake Storage, Azure Blob Storage, Hadoop File, Exchange, Dynamics, Web API.