PowerBI Assignment 3

1.List and explain different PowerBi products?

Power BI is a suite of business analytics tools developed by Microsoft. It offers a range of products and services to help organizations analyze data and share insights.

1)Power BI Service: Power BI Service is a cloud-based platform that allows users to publish, share, and collaborate on Power BI reports and dashboards. It provides features like data refresh, scheduled data updates, sharing and collaboration options, and content management. Power BI Service is accessed through a web browser and is used by report consumers and administrators.

2)Power BI Desktop: Power BI Desktop is a Windows application that provides a powerful environment for creating and designing interactive visualizations and reports. It allows users to connect to multiple data sources, transform and model data, and create rich visualizations using a drag-and-drop interface. Power BI Desktop is primarily used by data analysts and report designers.

3)Power BI Mobile: Power BI Mobile is a set of mobile applications available for iOS and Android devices. It allows users to access and interact with Power BI reports and dashboards on their mobile devices. With Power BI Mobile, users can stay connected to their data and receive notifications about important changes or data-driven insights.

4)Power BI Report Server: Power BI Report Server is an on-premises solution that allows organizations to host Power BI reports within their own infrastructure. It provides the same functionality as Power BI Service but is designed for organizations that require their data to remain on-premises due to data security or compliance requirements.

5)Power BI Embedded: Power BI Embedded is a set of APIs and tools that developers can use to integrate Power BI capabilities directly into their own applications. It allows developers to embed Power BI reports, dashboards, and visualizations into custom applications, providing end-users with a seamless experience.

6)Power BI Dataflow: Power BI Dataflow enables organizations to create, manage, and share reusable data entities within the Power BI ecosystem. It allows users to connect to various data sources, perform data transformation

and cleansing operations, and create dataflows that can be consumed by multiple reports and dashboards. Dataflows help ensure consistency and accuracy of data across different reports and reduce the duplication of efforts.

2. What limitations of Excel, Microsoft solved by PowerBi?

The limitations of Excel, Microsoft solved by PowerBi are as follows:

1)Visualizations and interactivity: While Excel offers basic charting and visualization capabilities, Power BI provides a wide range of advanced visualizations and interactive features. Power BI offers a rich library of customizable visualizations and supports third-party visualizations from the Power BI marketplace. Users can create interactive dashboards and reports with drill-through, filtering, and cross-filtering options, enabling deeper insights and exploration of data.

2)Data refresh and real-time updates: Excel requires manual data refresh, and real-time updates are limited. Power BI provides automated data refresh options, allowing users to schedule regular data updates from various sources. Power BI can connect to live data sources, enabling real-time or near-real-time data analysis and reporting. This ensures that reports and dashboards always display the most up-to-date information.

3)Data volume and performance: Excel has limitations in handling large data volumes efficiently. Power BI can handle significantly larger datasets and provides optimized performance for data processing and visualization. Power BI can connect to a variety of data sources, including databases, cloud services, and big data platforms, allowing users to work with massive datasets seamlessly.

4)Data modeling and relationships: In Excel, creating and managing complex data models with multiple relationships between tables can be challenging. Power BI offers a robust data modeling environment where users can define relationships, create calculated columns and measures, and perform advanced data transformations using the Power Query Editor. The data modeling capabilities in Power BI make it easier to work with structured data and create meaningful relationships between different data sources.

5)Mobile access and responsiveness: Excel files may not be optimized for mobile devices, and the viewing experience may be limited. Power BI offers

dedicated mobile apps for iOS and Android devices, providing optimized experiences for accessing and interacting with reports and dashboards on mobile devices. Power BI reports and dashboards are responsive and adapt to different screen sizes, ensuring a consistent and user-friendly experience across devices.

3. Explain Power Query?

Power Query is a data connectivity and transformation tool that is part of the Microsoft Power BI and Excel ecosystems. It allows users to connect to various data sources, transform and shape the data, and load it into their preferred destination, such as a Power BI report, Excel worksheet, or data model.

Some of the functionalities of Power Query:

1)Data Source Connectivity: Power Query supports a wide range of data sources, including databases (SQL Server, Oracle, MySQL, etc.), files (Excel, CSV, XML, JSON, etc.), online services (SharePoint, Dynamics 365, Salesforce, etc.), and more. It provides built-in connectors to establish connections to these sources and retrieve data.

2)Data Transformation and Shaping: Power Query enables users to perform various data transformation and shaping operations to prepare the data for analysis. Users can apply filtering, sorting, grouping, aggregating, and other operations to clean and reshape the data according to their requirements. Power Query provides an intuitive user interface for performing these transformations using a step-by-step process.

3)Query Editor: The Query Editor is the graphical interface within Power Query where users can define the transformation steps for their data. It allows users to view and modify the applied transformations, preview the data at each step, and make adjustments as needed. The Query Editor also provides a formula bar where users can write custom expressions and functions to perform advanced transformations.

4)Applied Steps: In Power Query, each transformation operation is recorded as an "Applied Step." These steps form a sequence that defines the transformation logic applied to the data. Users can modify, rearrange, or remove these steps to refine the data transformation process. The Applied Steps feature provides transparency and repeatability in data transformations.

5)Query Dependencies: Power Query allows users to create queries that reference and depend on other queries. This capability enables users to build a series of interconnected queries and establish relationships between them. For example, users can create a primary query that retrieves raw data and then create additional queries that reference the primary query and apply further transformations.

6)Data Mashup: Power Query supports data mashup, which refers to the process of combining data from multiple sources into a single dataset. Users can merge, append, or join data from different sources using common key columns or conditions. Data mashup enables users to consolidate data from various sources for unified analysis and reporting.

4. Explain Power Map?

Power Map, previously known as 3D Maps, was a data visualization tool available in Microsoft Excel. It allowed users to explore and analyze data in a geographic context by visualizing it on interactive 3D maps.

Power Map provided the following features:

1)Geospatial Mapping: With Power Map, users could plot their data on a 3D map based on geographic locations. Users could specify the geographical fields in their data, such as country, city, or latitude/longitude coordinates, and Power Map would plot the data points on the map accordingly.

2)Data Exploration: Power Map allowed users to interact with the 3D map and explore their data visually. Users could navigate the map, zoom in and out, and tilt and rotate it to gain different perspectives. They could also customize the map with various visual effects, such as heat maps, column charts, and pie charts, to represent data values in an engaging and informative way.

3)Time Animation: Power Map included a time feature that enabled users to create animated visualizations over time. Users could associate their data with a time dimension, such as dates or periods, and Power Map would animate the data changes on the map, showing how the values evolve over the specified time range.

4)Data Integration: Power Map seamlessly integrated with Excel, allowing users to leverage their existing data in spreadsheets. Users could import data from Excel worksheets or connect to external data sources and bring them into

Power Map for visualization. Power Map also supported data filtering, enabling users to focus on specific subsets of their data on the map.

5. How powerBi eliminated the need to host SharePoint Server on premises?

Power BI eliminates the need to host SharePoint Server on premises by providing a cloud-based platform for sharing and collaborating on reports and dashboards. Here's how Power BI achieves this:

1)Cloud-Based Sharing: Power BI allows users to publish reports and dashboards to the Power BI Service, a cloud-based platform provided by Microsoft. Instead of hosting and managing SharePoint Server on premises, users can leverage the Power BI cloud to share their reports securely. This eliminates the need for infrastructure setup, maintenance, and administration associated with hosting SharePoint Server.

2)Easy Access: With Power BI, users can access reports and dashboards from anywhere using a web browser or the Power BI mobile app. They can securely sign in to the Power BI Service and access the shared content without the need for VPNs or complex network configurations. Power BI provides a user-friendly and intuitive interface for browsing and interacting with reports and dashboards.

3)Collaboration and Sharing Features: Power BI offers robust collaboration and sharing features that enable users to work together on reports and dashboards. Users can share reports with colleagues and control access rights, allowing them to view, edit, or collaborate on the content. Power BI provides options for real-time collaboration, allowing multiple users to work on the same report simultaneously.

4)Data Refresh and Security: Power BI provides automated data refresh options to ensure that reports and dashboards always display the most up-to-date information. Users can schedule regular data updates from various data sources, eliminating the need for manual data refreshing. Power BI also incorporates robust security measures to protect data in transit and at rest, ensuring that sensitive information is secure in the cloud.

6. Explain the updates done in Power Bi Service(power BI 2.0) as compared to older version ?

Here are some significant updates made in Power BI Service compared to older versions:

1)Redesigned User Interface: Power BI has undergone several updates to its user interface, introducing a modernized and intuitive experience. The navigation and menu structure have been streamlined to improve usability and discoverability of features.

2)Paginated Reports: Power BI introduced the capability to create paginated reports, which are fixed-layout reports optimized for printing or generating PDFs. Paginated reports provide pixel-perfect layouts and support features like headers, footers, and multi-column layouts, making them suitable for formal or operational reporting requirements.

3)Power Automate Integration: Power BI Service has enhanced integration with Power Automate (previously known as Microsoft Flow), allowing users to create automated workflows and perform actions based on events or triggers in Power BI. Users can automate report distribution, data refreshes, notifications, and more, leveraging the capabilities of Power Automate.

4)Export to PDF and PowerPoint: Power BI introduced the ability to export reports and dashboards directly to PDF or PowerPoint formats. This feature allows users to create offline copies of their visualizations for sharing, presenting, or printing purposes.

5)Personalized Dashboards: Power BI introduced the concept of "My Workspace" where users can create and organize personalized dashboards and reports for their own use. This allows individual users to curate and access their own set of relevant visualizations and reports without impacting the shared content in the Power BI workspace.

6)AI and Machine Learning Integration: Power BI has integrated various AI and machine learning capabilities, such as AI visuals, natural language queries (Q&A), and anomaly detection. These features enable users to gain deeper insights from their data and make data-driven decisions more effectively.

7)Advanced Data Analysis: Power BI has introduced several advanced data analysis features, including quick measures, grouping, forecasting, and advanced analytics integration with Azure Machine Learning. These capabilities empower users to perform complex calculations, discover patterns, and derive insights from their data directly within Power BI Service.

8)Note that the Power BI Service is continuously evolving, and new updates and features are regularly introduced by Microsoft. It is always recommended to refer to the official Microsoft Power BI documentation or website for the latest information on updates and features available in Power BI Service.

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