**Power BI Assignment 3**

1. **List and explain different Power Bi products?**

Below are the different Power BI products:

**Power BI Desktop** is a free, self-service BI tool that you can use to connect to data, explore and visualize it, and share your insights with others.

**Power BI Pro** is a paid subscription that gives you access to additional features, such as the ability to publish reports to the Power BI service, share reports with others outside your organization, and collaborate on reports.

**Power BI Premium** is a premium capacity that offers even more features, such as the ability to handle large datasets, scale to meet the needs of your organization, and provide a high-performance user experience.

**Power BI Mobile** is a collection of apps that you can use to view Power BI reports on your mobile devices.

**Power BI Embedded** is a set of tools that you can use to embed Power BI reports and dashboards in your applications.

**Power BI Report Server** is a server-based solution that you can use to publish and share Power BI reports.

1. **What limitations of Excel, Microsoft solved by Power Bi?**

Below are some of the limitations of Excel that Microsoft solved by Power BI:

**Data size limitations:** Excel has a maximum limit of 1,048,576 rows and 16,384 columns per worksheet. Power BI can handle much larger datasets, up to 10 GB in size.

**Collaboration:** Excel is not designed for collaboration. Power BI makes it easy to share reports and dashboards with others, both inside and outside your organization.

**Visualization:** Excel's visualization capabilities are limited. Power BI offers a wide range of visualization options, including charts, graphs, maps, and dashboards.

**Performance:** Excel can be slow to perform complex queries or calculations. Power BI is designed to be more performant, even with large datasets.

**Security:** Excel is not a secure platform for storing data. Power BI offers several security features, such as data encryption and role-based access control.

1. **Explain Power Query?**

Power Query is a data transformation and preparation engine available in Microsoft Excel, Power BI, and other Microsoft products. It enables connection to various data sources, including Excel spreadsheets, text files, databases, and web APIs. Power Query empowers you to clean, transform, and merge data in diverse ways.

**Power Query benefits you by:**

1. **Extensive data source connectivity:** With support for numerous data sources, such as Excel spreadsheets, text files, databases, and web APIs, you can access data from any storage location.

2. **Data cleansing and transformation:** Power Query provides a wide array of tools for removing errors, converting data types, and merging data from different sources.

3. **Data combination:** You can merge data from various sources into a unified dataset, allowing for the creation of comprehensive reports or dashboards.

4. **Reusability of data queries:** Power Query permits saving data queries as reusable objects, facilitating their seamless reuse across multiple projects.

1. **Explain Power Map?**

In Power BI, Power Map is a powerful data visualization component that allows users to create interactive, 3D geographic visualizations based on location-based data. It provides a visually engaging way to explore and analyse data in a geographical context.

Here's how Power Map works in Power BI:

**1**. **Data import:** Power Map in Power BI allows you to import datasets that include location-based data. This could include latitude and longitude coordinates, addresses, or geographical names.

**2. Mapping data:** Once the data is imported, you can map it onto a 3D globe or custom map. Power Map uses the spatial information in your dataset to plot your data points accurately.

**3. Visualizing data:** Power Map offers various options to visualize and represent the data on the map. You can customize the appearance of data points, such as size, colour, and shape, based on additional attributes or measures from your dataset. This enables you to convey more information visually.

**4. Animation and exploration:** Power Map allows you to animate your data over time. You can set a timeline and play through the data to see changes and trends spatially. Additionally, you can explore the data by zooming, panning, and rotating the map, gaining different perspectives on the information.

**5. Interaction and filtering:** Power Map provides interactive capabilities within Power BI. Users can click on data points to see detailed information, apply filters to isolate specific data subsets, and use slicers or other Power BI features to enhance the analysis and interactivity of the visualization.

Power Map in Power BI helps users uncover insights, patterns, and relationships within location-based data by providing an immersive and dynamic platform for visualization and analysis.

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

Power BI 2.0 is a major update to the Power BI service that was released in 2022. It includes several new features and improvements, including:

**New data connectors:** Power BI 2.0 includes new data connectors for several popular data sources, including Salesforce, Google Analytics, and Amazon Redshift.

**Enhanced data modelling:** Power BI 2.0 includes several enhancements to the data modelling features, making it easier to create and manage complex data models.

**Improved performance:** Power BI 2.0 has been optimized for performance, making it faster to load reports and dashboards.

**New visualizations:** Power BI 2.0 includes a few new visualizations, including maps, tree maps, and heat maps.

**Enhanced collaboration:** Power BI 2.0 makes it easier to collaborate on reports and dashboards, with features like real-time co-authoring and version history.

In addition to these new features, Power BI 2.0 also includes several improvements to the existing features, such as:

**Improved user interface:** The user interface of Power BI 2.0 has been redesigned to be more modern and intuitive.

**Enhanced security:** Power BI 2.0 includes several new security features, such as role-based access control and data encryption.

**Improved scalability:** Power BI 2.0 has been designed to scale to meet the needs of large organizations.

Overall, Power BI 2.0 is a major update that includes a few new features and improvements. If you are using Power BI, I recommend upgrading to Power BI 2.0 to take advantage of these new features.