1. **List and explain different PowerBi products?**

Some key Power BI products and their explanations:-

1. **Power BI Desktop** : Windows application for creating reports and visualizations.
2. **Power BI Service (Pro and Premium)**: Cloud-based platform for sharing and collaborating on reports. Pro for individual users, Premium for enterprise-level features.
3. **Power BI Mobile:** Mobile apps for accessing and interacting with Power BI content on iOS and Android.
4. **Power BI Embedded:** Developer-focused service to embed Power BI into custom applications or websites.
5. **Power BI Report Server:** On-premises solution for hosting Power BI reports within an organization's own servers.
6. **Power BI Dataflows:** Data preparation and transformation within the Power BI service.
7. **Power BI Paginated Reports:** For creating pixel-perfect, printable reports with tables and charts.

These products cater to various needs within data visualization, analytics, and reporting, catering to both individual users and enterprise-level requirements.

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

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| --- | --- |
| **Limitations of Excel** | **Solutions provided by Power BI** |
| Limited data visualization capabilities | Offers advanced data visualization and interactive reports. |
| Difficulty handling large datasets | Handles larger datasets with optimizations for performance. |
| Manual data preparation and cleaning | Provides automated data transformation and cleansing. |
| Limited collaboration and sharing options | Offers cloud-based collaboration and sharing in real-time. |
| Limited support for streaming and real-time data | Supports real-time data streaming and analysis. |
| Difficulty in embedding reports in web apps | Allows easy embedding of reports in custom applications. |
| Limited support for mobile access | Provides dedicated mobile apps for data access and usage. |

1. **Explain PowerQuery?**

Power Query, often referred to as "Get & Transform" in Excel, designed to help users efficiently connect to various data sources, clean and shape data, and load it into their analysis tools. In essence, Power Query simplifies the process of gathering, transforming, and preparing data for analysis, saving time and reducing the risk of errors.

**Key aspect of Power Query**:

1. **Data Connectivity**: Power Query connects to diverse data sources, making it easy to import data from databases, spreadsheets, cloud services, and web sources.
2. **Data Transformation:** It simplifies data cleaning and shaping by providing a user-friendly interface for tasks like filtering, sorting, merging, and aggregating data.
3. **Data Cleaning and Enrichment:** Power Query removes duplicates, handles missing data, and allows merging with external sources to add context and information.
4. **Query Folding:** It optimizes performance by pushing data transformation tasks back to the source system whenever possible.
5. **Formula Language (M):** Power Query uses the "M" language for defining custom data transformation steps, offering advanced users greater flexibility.
6. **Parameterization and Automation:** Users can create reusable templates and automate data refreshes, ensuring up-to-date analysis.
7. **Integration with Analysis Tools:** Power Query seamlessly integrates with tools like Power BI and Excel, enabling direct loading of prepared data for reporting and analysis.
8. **Data Source Privacy and Security:** It respects data source privacy settings and ensures secure access according to organizational policies
9. **Community and Ecosystem:** Power Query benefits from an active user community and supports various data providers and partners.

In essence, Power Query streamlines data preparation, enhances data quality, and facilitates data integration across various sources, offering valuable time-saving and efficiency benefits to data professionals.

1. **Explain PowerMap?**

Power Map, now known as "3D Maps" in Microsoft Excel, is a data visualization tool that enables users to create interactive, three-dimensional geographical and temporal visualizations. It allows you to plot data on a 3D globe or custom map, making it easier to analyze and understand spatial and time-based trends in your data.

**Key Features of Power Map**:

1. Geospatial Visualization: Power Map lets you plot data points on a map or globe to visualize spatial relationships and geographic patterns.
2. Time Animation: You can create dynamic visualizations that show how data evolves over time, allowing for time-based analysis.
3. Custom Maps: Users can import custom map data, including topographical and geographic information, to tailor visualizations to specific needs.
4. Layering: Power Map supports multiple data layers, enabling the overlay of different datasets to uncover correlations and insights.
5. Data Exploration: It provides tools for exploring and interacting with data points, such as tooltips and filtering.
6. Tour Creation: You can create guided tours to present your data stories, complete with custom annotations and narratives.

Power Map enables users to plot data on maps and globes, analyze spatial relationships, and uncover time-based trends.

With features like custom maps, layering, and data exploration tools, Power Map empowers users to create compelling data stories and presentations

1. **How Power BI eliminated the need to host SharePoint Server on premises?**.

Power BI has not eliminated the need for hosting SharePoint Server on-premises. Instead, Power BI and SharePoint can be integrated to provide a more comprehensive solution for data visualization, collaboration, and reporting. Here's how Power BI and SharePoint work together, and why organizations might still need to host SharePoint on-premises:

1. **Integration with SharePoint Online:** Power BI seamlessly integrates with SharePoint Online, which is the cloud-based version of SharePoint. This integration allows users to embed Power BI reports and dashboards directly within SharePoint Online sites and pages, enhancing data visualization and collaboration.
2. **Access to Data Sources:** Power BI can connect to various data sources, both on-premises and in the cloud. While Power BI can access cloud-based data sources directly, on-premises data sources often require a gateway, such as the Power BI On-Premises Data Gateway, to facilitate secure data transfer between the on-premises environment and the cloud-based Power BI service.
3. **Hybrid Solutions:** Some organizations opt for hybrid solutions, where they maintain certain data and services on-premises while leveraging the cloud for others. In this scenario, SharePoint may still be hosted on-premises for specific reasons, such as data security, compliance, or specific business requirements.

1. **Customization and Governance**: SharePoint provides a platform for customizing and governing content and access within an organization. It allows for extensive document management, workflow automation, and intranet capabilities, which may not be fully replicated by Power BI alone.
2. **Data Sensitivity and Compliance:** Some organizations, especially those in highly regulated industries, may have strict data sensitivity and compliance requirements. Hosting SharePoint on-premises allows them to have more control over their data and adhere to specific compliance standards.
3. **Legacy Systems and Investments:** Many organizations have made significant investments in on-premises SharePoint environments, including custom solutions and infrastructure. Migrating everything to the cloud may not be feasible or cost-effective in the short term.

In summary, while Power BI and SharePoint Online offer powerful cloud-based solutions for data visualization and collaboration, they do not eliminate the need for hosting

SharePoint Server on-premises entirely. Instead, organizations have the flexibility to choose the deployment model that best suits their specific business needs, whether it's fully cloud-based, hybrid, or on-premises, depending on factors like data security, compliance, and existing infrastructure investments.

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

* **Enhanced Collaboration and Sharing:**
  + Improved sharing options: Power BI Service has evolved to offer more flexible and granular sharing options, allowing users to share reports and dashboards with specific individuals, groups, or across an organization.
* **Improved Performance:**
  + Better performance: Microsoft continually works on optimizing the performance of Power BI Service, making it faster and more responsive, particularly for handling large datasets and complex reports.
* **Advanced AI and Analytics:**
  + Integration of AI capabilities: Power BI has incorporated more advanced AI features for data analysis, including automated insights, natural language querying, and AI-driven visuals.
* **Enhanced Data Connectivity:**
  + Expanded data source support: New connectors and data source options have been added to Power BI Service, allowing users to connect to a broader range of data sources, both cloud-based and on-premises.
* **Improved Data Preparation:**
  + **Enhanced data transformation:** Power BI Service has improved its data preparation capabilities, making it easier to clean, shape, and transform data directly within the service.
* **Custom Visuals and Themes:**
  + Custom visuals and themes: Users can now create and apply custom visuals and themes to reports, allowing for more personalized and branded data visualizations.
* **Mobile Enhancements**:
  + Improved mobile experience: Power BI's mobile app has seen significant improvements in terms of usability and functionality, making it easier to access and interact with reports on mobile devices.
* **Enterprise-Grade Features:**
  + Power BI Premium: The Power BI Premium offering has expanded, providing dedicated capacity for larger organizations and more extensive data requirements.
  + Power BI Report Server: Organizations can host Power BI reports on their own servers using Power BI Report Server, ensuring data remains on-premises for data governance purposes.
* **Data Security and Compliance:**
  + Enhanced data security and compliance features: Power BI Service has introduced various features to help organizations meet data governance and compliance requirements, including data sensitivity labels and integration with Azure Active Directory.
* **Integration with Other Microsoft Products**:
  + Deeper integration with Microsoft 365: Power BI has improved integration with other Microsoft products such as Teams and SharePoint, making it easier to collaborate and share insights.