Q1. List and explain different PowerBi products?

Ans: (a) Power bi desktop

Creating and editing customized reports for every level of expertise.

Data ingestion from hundreds of supported data sources.

Data transformation, cleaning, data model creation with built-in Power Query Editor.

AI-driven analytics.

Interactive reporting with pre-built or custom visuals.

(b) Power bi pro

Self-service BI in the cloud.

Creating, editing and sharing reports and dashboards among users.

Collaboration in personal and team workspaces.

10 GB of storage per user.

(c) Power bi premium

Enterprise BI both on-premises and in the cloud.

Dedicated storage (100 TB) and compute resources.

Consumption of Power BI content without individual licensing.

Maintaining BI assets on-premises with the Power BI Report server.

Paginated reporting.

Multi-geo capability.

(d) Power bi embedded

Reports, dashboards and visual analytics embedded into applications.

An extensive library of data connectors, APIs, and fully documented SDKs.

Q2. What limitations of Excel, Microsoft solved by PowerBi?

Ans: Excel is used to organize data, transform it and perform mathematical operations and calculations. On the other hand, Power BI was conceived as a business intelligence and data visualization tool for businesses.

Excel has limitations in the amount of data it can work with. In contrast, Power BI can handle much larger amounts of data.

Power BI can connect to a large number of data sources, while Excel's connectivity capacity is limited. Also, unlike Excel, Power BI can be easily used from mobile devices. Power BI has faster processing than Excel.

Power BI dashboards are more visually appealing, interactive and customizable than those in Excel.

Power BI is a more powerful tool than Excel in terms of comparison between tables, reports or data files.

Power BI is more user friendly and easy to use than Excel.

Q3. Explain PowerQuery?

Ans: Power Query is Microsoft's Data Connectivity and Data Preparation technology. It basically, enables business users to access data stored in data sources seamlessly whilst, reshaping it to fit their needs. It's easy to use, engaging, even convenient to use for the no-code users.

The Power Query user experience is provided through the Power Query Editor user interface. The goal of this interface is to help you apply the transformations you need simply by interacting with a user-friendly set of ribbons, menus, buttons, and other interactive components. When you create a new transformation step by interacting with the components of the Power Query interface, Power Query automatically creates the M code required to do the transformation so you don't need to write any code.

Currently, two Power Query experiences are available:

- **Power Query Online**—Found in integrations such as Power BI dataflows, Microsoft Power Platform dataflows, Azure Data Factory wrangling dataflows, and many more that provide the experience through an online webpage.
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- **Power Query for Desktop**—Found in integrations such as Power Query for Excel and Power BI Desktop.

Q4. Explain PowerMap?

Ans: Microsoft Power Map for Excel is a three-dimensional (3-D) data visualization tool that lets you look at information in new ways. A power map lets you discover insights you might not see in traditional two-dimensional (2-D) tables and charts.

With Power Map, you can plot geographic and temporal data on a 3-D globe or custom map, show it over time, and create visual tours you can share with other people. You'll want to use Power Map to:

- **Map data :** Plot more than a million rows of data visually on Bing maps in 3-D format from an Excel table or Data Model in Excel.
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- **Discover insights :** Gain new understandings by viewing your data in geographic space and seeing time-stamped data change over time.
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- **Share stories :** Capture screenshots and build cinematic, guided video tours you can share broadly, engaging audiences like never before. Or export tours to video and share them that way as well.

Q5. How power Bi eliminated the need to host SharePoint Server on premises?

Ans: Microsoft SharePoint is a document management and collaboration platform that helps a company manage archives, documents, reports and other content that is vital to its business processes. SharePoint's enterprise content management capabilities are helpful to organizations in all industries and in any department within an organization.

Sharepoint 2016 was focused on traditional document management. With SharePoint 2019, Microsoft eliminated some collaboration, social media and enterprise search functions that are now included in Office 365. Those functions include the following:

- **Delve.** A data visualization and discovery tool that incorporates elements of social networking and machine learning with the search capabilities of the Office 365 suite.

- **Office Graph.** A back-end tool in the Office 365 Suite that facilitates search across integrated applications and applies machine learning to organizational interactions and content use.

- **Sway.** A presentation tool in the Office suite.

- **Teams.** A work collaboration tool that allows employees to interact on a working document wherever they are.

Other features that were removed from the SharePoint 2016 server include the following:

- **Excel services.** Excel capabilities are no longer hosted on SharePoint Server. Instead, it is part of Excel Online in Office Online Server.

- **Forefront Identity Manager.** FIM synchronizes between Active Directory and SharePoint. SharePoint 2016 does not use FIM but instead uses Microsoft Identity Manager 2016 or another third-party tool.

- **SharePoint BI capabilities.** Power Pivot and Power View for BI features are not deployed in SharePoint 2016. Power Pivot for SharePoint and Power View for SharePoint add-ins can only be deployed with SharePoint 2016 when using SQL Server 2016.

- **SharePoint Foundation.** SharePoint Foundation is a free edition that provides a secure, web-based collaboration platform. It is not available in SharePoint Server 2016 but is still available in SharePoint 2013.

- **Standalone install mode.** This feature is no longer available on SharePoint 2016. It has been replaced by the MinRole farm topology.

Q6. Explain the updates done in Power Bi Service(power BI 2.0) as compared to older version ?

Ans: The following updates are new to Power BI Desktop :

Get Data

There are now two different sections in the "Get Data" of your workspace which each of them have two parts:

- Content Pack Library

My Organisation : from here you can easily create you organisational content packs. A content pack is basically a single repository to keep dataests, reports, dashboards, Q&A, integration with other data sources, data refresh and more. You can also package up and publish your dashboards, reports and datasets with your colleagues in a specific group or the entire organisation. You can also browse the content packs that other people in your organisation published.

Services: you can use lots of online services built to connect to different platforms like Microsoft Dynamics CRM, Microsoft Dynamics Marketing, Visual Studio Online , and much more.

- Import Or Connect to Data

Files: You can upload your reports, data or workbooks from Excel, Power BI Desktop or CSV files. The location of the files could be your local hard drive, on OneDrive Business or OneDrive Personal.

Databases: You can connect to Azure SQL Database, Azure SQL Data Warehouse, SQL Server Analysis Services Tabular Model or Azure HDInsight (Spark) and browse your live data.

Content pack Library – My Organisation

- From Get Data click on "My Organisation"

As you can see there is a brief definition of "My Organisation" which is "MY ORGANISATION IS WHERE YOU CAN FIND CONTENR PACKS PUBLISHED BY YOU AND OTHER IN YOUR ORGANISATION"

- Click "Create Content Pack"

Choose who will have access to this content pack. If you choose "My Entire Organisation" then you just need to type a title as well as description for the content pack then click Publish. If you want to publish the content pack with specific groups then you need to enter email addresses separated by semicolon (;) or comma (,)

Select the items you want to publish. If you select a dashboard it will automatically select all corresponding reports and datasets.

You can also upload a company logo or image by clicking on Upload link

Click Publish

All done.

Reports

The report's features are improved significantly. We can know change the chart's colours, adding free texts into TextBoxes and much more.

- After logging into Power BI website clock on a desired report
- Right after you open the report you'll get prompted to use the new report canvas

After you open the report, click on EDIT REPORT

You might get a message saying "To make changes to this report, you need to convert it to new Power BI report canvas". You can decide to convert or cancel. As the report that I opened is a test report I'm safe to convert it.

Now that your report is open click on EDIT REPORT button.

You'll immediately see a toolbox on the right pane that wasn't available before.

With the new features we are able to modify the visualisation as desired.

By clicking a chart related features to the chart is added to the visualisation pane.