**Power BI Assignment 3**

1. List and explain different PowerBi products?

* **Power BI Desktop:**Intended for small businesses, Power BI Desktop is available for free. With Power BI Desktop, you can create reports and export them in different formats.
* **Power BI Service:**It is an online Software as a Service (SaaS) that allows you to share the reports with other users and connect the data from the cloud. However, you can only use Power BI Service in the paid version.
  + **Power BI Pro:** A pay-per-user license that allows you to access advanced features and share Power BI reports.
  + **Power BI Premium:** Intended for large enterprises and businesses, here, you can scale in and out the license as per the requirements.
* **Power BI Mobile Apps:** These are applications for mobile phones and tablets for sharing and viewing Power BI dashboards and Power BI reports.
* **Power BI Report Server:** It is an on-premises version of Power BI, suitable for businesses that need to keep their data on in-house servers.
* **Power BI Embedded:**Instead of building analytical features from scratch, you can embed this white-label version with Power BI apps and get better results.

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

* **Data Size:** One of the key differences is handling the capacity of data quantity. With Power BI, we can handle millions of rows together with fast speed, but with Excel, it is frustrating to handle large amounts of data.
* **Cloud-Based Features:** Once the dashboard building completes in Power BI, we can publish the report to the end-users with Microsoft’s cloud-based services. But, when it comes to Excel, we need to share the large data with the dashboard via email or any online sharing tool.
* **Visualizations:** In Power BI, we have plenty of visualizations to design the dashboard, but with excel, we have only limited visualizations.
* **Custom Visualizations:** Power BI allows us to import visualizations that are not there in the file by going to the marketplace, but Excel does not have that luxury.

1. Explain Power Query?

* With **Power BI**  you can connect to the world of data, create compelling and interactive reports, share your efforts with others, and expand their business intelligence efforts. The **Power Query**helps you to connect to sources, shape and transform the data to meet your needs.
* 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.
* **Power Query Editor:**

The Power Query Editor is the primary data preparation experience natively integrated into several Microsoft products, including but not limited to [Microsoft Excel](https://www.edureka.co/blog/excel-tutorial/), [Microsoft Power BI](https://www.edureka.co/blog/power-bi-visuals/), [Microsoft SQL Server Data Tools](https://www.edureka.co/blog/msbi-vs-power-bi/), etc. This, in turn, allows users to apply over 300 different data transformations by previewing data and selecting transformations in the user experience.

**M: Power Query Formula Language:**

* Microsoft Power Query provides a powerful data import experience that encompasses many features. Power Query works with Analysis Services, Excel, and Power BI workbooks.
* A core capability of Power Query is to filter and combine data from a rich collection of data sources that it supports. Any such data mashup is expressed using a functional, case sensitive language known as M Formula Language.
* It is pretty similar to F# and is used to query a multitude of data sources. It contains commands to transform data and can return the results of the query to either an Excel table or Power BI data model.

1. Explain Power Map?

- 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.
* **Discover insights :** Gain new understandings by viewing your data in geographic space and seeing time-stamped data change over time.
* **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.

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

* The cloud version of SharePoint offers a myriad of benefits to users, including straightforward ways to store, share, and keep track of information. **External**collaboration and communication efforts can be made easily as SharePoint Online connects with many outside customers and vendors.
* SharePoint Online comprises both web and **cloud-based** technologies. It eliminates high data storage costs, subscription charges, and other **SharePoint on-premises** deployments.

The primary benefits of migrating to the SharePoint Online platform are:

* The ability to integrate with Microsoft 365 applications
* High-level security features
* Compatibility with mobile devices, so information is accessible on the go
* Easy external collaboration efforts with users
* HIPPA, FIMSA, and ISO27001 compliance, among others
* Ability to create document libraries for enhanced collaboration efforts

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

* Power BI 2.0 pulls in all of the excellent Excel plug-in technology and sets it free. This new release positions Power BI and Microsoft to be the major player in self-service BI. And perhaps a first step for companies to migrate to Office 365.
* **Online Portal**  
  With Microsoft gently nudging users to migrate online to Office 365, it's not surprising that Power BI is a hosted, cloud service. As an analysis and reporting tool, Power BI covers the expected areas of dashboards, report building, data sourcing and organization. But as an online business intelligence service, Power BI is forced to bridge the divide between the online service and the reality that at least for now, most of the data used by an analyst will be from local, on-premise data sources. And while local files and static database pulls are relatively easy, enabling a data refresh from a database server to an online report gets complicated. Microsoft reworked and updated the original Data Management Gateway into the new Power BI Personal Gateway to handle this task.
* **OneDrive based Report**  
  When it comes to analysis, it's all about the data. Power BI is about setting analysts free to rapidly build and deploy reports for their organizations. In addition to the online portal, Power BI has several application components that expand Power BI's functionality and ease of use. Building a simple report online can be easy, but advanced reports benefit from a locally installed tool. The Power BI Desktop application handles this nicely. And while the portal makes connecting to online resources straight forward, a lot of data is from on-premise databases. Two additional components enhance connections with local databases. To support scheduled or on-demand data refreshes for your reports, the Power BI Personal Gateway manages your connections to local, on-premise databases such as your SQL Server data warehouse. For real time access to your Analysis Services tabular database you will want to utilize the Power BI Analysis Services Connector. And the Power BI mobile apps for Windows, iPhone and Android devices are available to all users, even the free accounts.
* **Get Data**  
  Online, the Get Data option offers the ability to acquire data from a growing list of online services, local or OneDrive files, databases in Azure and Spark on Azure HDInsight. There's even a feature to connect to an Analysis Service tabular database. Next to each data set is a three dot ellipsis that provides a limited set of actions.
* **Reports**  
  A new report starts with the selection of a dataset. Simply click on a dataset and the work area for a new report appears. On the right side of the page, the dataset, with all of the data elements are listed. Visualizations include line, dot, bar and pie charts, a data table, a data slicer, and maps. As you add visualizations to the report, you'll start to notice that they are dynamically filtered in unison.
* **Dashboard**  
  Dashboards are containers to be shared. One or more report visualizations can be pinned to a dashboard, from one or more reports. When a dashboard is initially displayed to a share recipient, the visualizations are static. However, click on one of the visualizations, and Power BI generates the full interactive report showing all of the visualizations in the report, including those not on the dashboard.
* **Data Refresh**  
  One time reports are great, but it is not uncommon for a one-time report to need a data refresh. Power BI has this covered. Some data sources, such as our OneDrive file, can only be manually refreshed. That makes sense since it is coming from my personal account. But what about when it is connected to the company's data warehouse? That requires the installation of the Power BI Personal Gateway and the Power BI Desktop. With the Personal Gateway and the Desktop installed, able to design a more involved report pulling data directly from a SQL Server data warehouse into a Power BI report that could be scheduled for a refresh.
* **Power BI Personal Gateway**  
  The Power BI Personal Gateway provides a bridge between your reports and on-premise data sources that need to be refreshed. Its personal, in that you install this as a service on your machine, to manage your refreshes. And Gateway, in that when a refresh is requested for one of your datasets, your personal gateway manages the connection. For current Power BI for Office 365 users, Power BI documentation suggests that you can continue to use Data Management Gateway.
* **Pricing**  
  Prior to the official release, the basic version was listed as free, with the Pro version listed as $9.99/user/month or included with some of the enterprise Office 365 versions. All offer the ability to use the Power BI Desktop, use of the mobile apps, access to the extended connection packs and the ability to refresh and stream data. The Pro version expands data storage from 1GB to 10GB, allows for hourly verses daily refresh schedules and increases the streaming limit from 10K rows/hour to 1 million rows/hour. But perhaps the best feature of the Pro version will be the ability to use Active Directory groups for sharing and managing access control.