# Power BI Assignment 3

1. List and explain different Power Bi products?

   Different Power BI products are:

   i. **Power BI Desktop-** Power BI Desktop is basically the version of Power BI that you install on to your local system / computer to access the basic features of Power BI and act as a companion to the main, cloud-based application. It is the ideal version to start with no matter your skill level Power BI Free enables you to connect to 70+ data sources, analyse data, publish to the web, export to excel and much more.

   ii. **Power BI Pro:** Power BI Pro is the full version of Power BI, which means it comes complete with the ability to use Power BI for both building dashboards, reports and unlimited viewing, sharing and consumption of your created reports (and reports shared by others) which is not possible with Power BI Desktop.

   iii. **Power BI Premium:** The Power BI Premium licence is not a per-user licence like a Free or Pro Licence. Instead, Power BI Premium licence provides a dedicated unit of capacity for all users in the organisation. This dedicated capacity (aka Premium Workspace) can be used to host large datasets up to 50GB while offering a total storage of 100TB in the cloud.

   It enables your organization to use your own dedicated capacity and hardware rather than relying on Microsoft's shared capacity. Although you will in fact need to determine said capacity accurately and ensure that it has the capabilities to handle your reporting and analysis needs. This allows for much larger scale and better performance if you size the capacity properly. Microsoft offers three sizes for Premium capacity and each come with a different number of v-cores and memory size.

   iv. **Power BI Mobile:** Power BI offers a set of mobile apps for iOS, Android, and Windows mobile devices. In the mobile apps, we connect to and interact with our cloud and on-premises data. We create reports in Power BI Desktop. We create dashboards, and view dashboards and reports in the Power BI report service.

   v. **Power BI Embedded:** Power Bi Embedded is an azure service that allows companies to integrate Power BI's analytical capabilities into other applications. In other words, Power BI Embedded allows businesses to create

reports and analyse datasets through their own applications portals or websites.

vi. **Power BI Report Server:** Power BI report server is an op-premises report server with a web portal in which we display and manage reports and KPIs. Along with it come the tools to create Power BI reports, paginated reports, mobile reports, and KPIs.

## 2. What limitations of Excel, Microsoft solved by Power Bi?

Microsoft Power BI is a multi-functional business analytics solution that helps us visualize data, share insights across our organization, and even embed them in our app or website. With the ease of data access, visibility and sharing capabilities offered in this platform, various users are making the switch from more outdated tools like Microsoft Excel.

**Advantages of Power BI over Excel**

➢ **Single Source of Truth- Workspace**
We all know it can be stressful receiving reports from different managers, analysts or even departments that don't work together often. By building a workspace in Power BI, we can give our company the advantage of structuring and associating data schema into one place.

➢ **Row-Level**
Are we spending too much time building multiple reports for each stakeholder? For example, building a P&L report for each store can be time-consuming. By implementing Row-level security we can specify each set of data for a user or group. This means less analysis time needed, as just one view would be built for Power BI to deliver based on the predefined rules.

➢ **Cloud Service**
Save time involved in moving and sharing data. Data can be uploaded from multiple on-premise sources (Excel, DB, CSV, etc.) or reported directly from multiple cloud web services such as Azure, Mail Chimp, Zendesk, and Salesforce. Once uploaded, reports are accessible from any modern browser. Power BI also has dedicated apps for most popular devices, such as Windows, Android, and iOS.

➢ **Q&A**
Do you know what you are looking for, but don't know where (or how) to find it? With Q&A, users can browse their data by typing questions into a Natural Language capability tool that Power BI has incorporated.

➢ **Mobile Accessibility**
We know Excel is available on all devices, but is it really user friendly? With Power BI, data analysts can create custom views of their reports for mobile

devices. Why search through a spreadsheet on your phone if you can create a KPI view?

3. Explain Power Query?

Power Query is the Heart of Power BI. Power Query Editor allows user to transform data and create queries in much faster way and load them to main window. Power BI allows a massive variety of ways to transform data. Power Query is just one piece of the suite of Power BI and Excel products from Microsoft.

These data transformations could include tasks like:
➢ Remove columns, rows, blanks
➢ Convert data types – text, numbers, dates
➢ Split or merge columns
➢ Sort & filter columns
➢ Add calculated columns
➢ Aggregate or summarize data
➢ Find & replace text
➢ Unpivot data to use for pivot tables

It is the mostly used tool by the analyst to get data and pre-process them to use it for final report. It is a must known skill for any developers to user power BI.

4. Explain Power Map?

A power map lets us discover insights we might not see in traditional two-dimensional (2-D) tables and charts.
With power maps we can plot geographic and temporal data on 3-D globe or custom map, show it overtime, and create visual tours we can share with people. We can 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.

Power BI integrates with Bing Maps to provide default map coordinates (a process called geo-coding) so you can create maps. Together they use algorithms to identify the correct location, but sometimes it's a best guess. If Power BI tries, but can't create the map visualization on its own, it enlists the help of Bing Maps.

To increase the likelihood of correct geo-coding, use the following tips. The first set of tips is for you to use if you have access to the dataset itself. The second set of tips is things you can do in Power BI if you don't have access to the dataset.

The Power BI service and Power BI Desktop send Bing the geo data it needs to create the map visualization. This may include the data in the **Location**, **Latitude**, and **Longitude** buckets of the visual's field well. Exactly what is sent varies by map type.

- For maps (bubble, scatter, and dot plot maps), if latitude and longitude are provided, then no data is sent to Bing. Otherwise, any data in the **Location** bucket is sent to Bing.
- Filled maps require a field in the **Location** bucket; even if latitude and longitude are provided. Whatever data is in the **Location**, **Latitude**, or **Longitude** bucket is sent to Bing.

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

There has been a lot of buzz and questions around connecting your Office 365 tenant to data located on Premises. This is a common requirement and is now made possible with PowerBI.

Connecting to your data source is made possible with the Data Management Gateway (DMG) The awesome part of the DMG is that is makes the connection outside the firewall. That means, no reverse proxies, custom web services or firewalls to deal with!

Overall, there are few requirements and caveats that I encountered while setting up my demo environment. FYI, I set this up in under and hour, including the time is took to spin up a PowerBI trial.

- ➢ The DMG must be installed on a non-SQL server in your on-premises environment. I could not get anything to work on my SQL server so I am thinking this has to be done on a member server.
- ➢ A new Gateway must be created via your bi admin center.
- ➢ You must register the gateway with the on premises DMG client.
- ➢ You can then store your credentials for the data sources on premises OR in the cloud. The benefit to storing the creds in the cloud is you can recover quicker from a system failure.

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

- Admin & governance

- Email subscriptions access via Admin API
- Allow sharing links to include your changes to the report
- Announcing Public Preview of Hybrid Tables in Power BI Premium
- Deployment pipelines: assign a workspace to all pipeline stages