Power BI Assignment 1

1.What do you mean by BI? Explain.

Ans: BI is nothing but Business intelligence which refers to process of collecting data, mining, technologies, and analyze data into meaningful information in various form such as Data visualization, charts, graphs, etc.

In simple words, Converting raw data into meaningful information.

2.How Power-BI helps in BI, and how does it help Analysts? Explain.

Ans: Power BI is a business intelligence tool which helps you connect with various data sources, clean and transform the data into data modelling and analyze efficiently for data visualization and publish it with others within your organization.

It is very easy to operate drag-and-drop options which makes quick processing to give you complex data related queries without the need of programming skills.

3.Explain Descriptive analytics?

Ans: Descriptive analytics is the type of data analytics that focuses on past data for summarizing and highlighting the pattern of what has happened. These statistics are useful for keeping the track of your operation, especially when you track changes in them from month-to-month or year-to-year.

4.Explain Predictive analytics?

Ans: Predictive analytics is another type of advanced analytics that makes prediction about the future events by analyzing patterns in each set of input data. Predictive analytics uses descriptive data (Past data) to predict what is going to happen.

5. Explain perspective analytics?

Ans: Prescriptive analytics is a process which provides what you need to do ahead rather than what is occurring right now or what will happen later. These decisions aimed at maximum system performance. Perspective analytics uses predictive analytics as a foundation and adds optimize capabilities. It is valuable tool for data driven decision making.

6. Write five real-life questions that Power BI can solve.

Ans: a. Power BI helps you to interpret several types of data sources in one project without any problem.

b. Using Power BI's questions & answers feature, it is now possible to ask your software these questions using natural language. This natural language technology makes your work extremely easy to outcome your results.

c. Coding is difficult to solve complex data, now Power BI produce the solution without any coding knowledge, you can do it immediately with extensive data.

d. Manual work can result in errors but with power BI reduces the possibility of errors by allowing reports to be run in seconds using only the most current data.

e. Long ago, individuals or employees used to make Power point presentation or charts using data to analyze it and to understand the data quickly. It used time consuming task, but Power BI makes it easier to create charts/graphs or dashboards to analyze and present it. Most important that we can share/publish this live data with employees through cloud

Power BI Assignment 2

1.Explain the advantages of Natural Queries in Power BI with an example?

Ans: i. It is fastest way to get the result/ answer for the question you ask.

ii. Power BI lets you explore your data in your own words using Natural Language.

iii. To make it easier for you to notice which words the algorithm recognized or didn't, Q&A highlights certain terms.

iv. Power BI Q&A provides contextual and relevant recommendations as you write your query, enabling you to rapidly use natural language to ask questions and get answers.

v. The purpose of Q&A is to automatically plot the fields on the appropriate axis, instantaneously analyze the question, visualize the answer, and interpret both.

2. Explain Web Front End (WFE) cluster from Power BI Service Architecture?

Ans: The Power BI initial connection and authentication procedure is managed by the WFE cluster, which uses AAD to verify client identities and provide tokens for further client connections to the Power BI service. Additionally, Power BI makes use of the Azure Traffic Manager (ATM) to route user traffic to the closest datacenter for authentication purposes and to download static files and content based on the DNS record of the client making the connection. Power BI effectively distributes the required static material and files to users based on location using the Azure Content Delivery Network (CDN).

3. Explain Back End cluster from Power BI Service Architecture?

Ans: The Back-End cluster oversees data storage, data connections, data refresh, reports, datasets, user dashboards, visualizations, and other elements of interfacing with the Power BI service. User queries are sent through the Gateway Role to the Power BI service. Other than the Gateway Role, no other roles are directly interacted with by users. The Gateway Role will eventually be managed by Azure API Management.

4. What ASP.NET component does in Power BI Service Architecture?

Ans: The business suite Power BI consists of a number of interconnected technologies. Microsoft Power BI technology is made up of a variety of parts, in order to create superior business intelligence solutions: • An ASP.NET website operating in the Azure App Service Environment makes up a WFE cluster. The client's DNS service may get in touch with Azure Traffic Manager when users try to connect to the Power BI service to determine the best (often closest) datacenter for their needs.

5. Compare Microsoft Excel and Power BI Desktop on the following features:

Data import
Data transformation
Modeling
Reporting
Server Deployment
Convert Models
Cost

Ans: • Data import: Power BI can connect to a large number of Data sources, whereas, Excel's connectivity with data sources is limited.

• Data Transformation: Power Query is used by Excel and Power BI for data cleansing and transformation. With the inclusion of this function, Excel is now a strong candidate for data analysis and reporting.

• Modeling: While Power BI's data model focuses mostly on large datasets and the ability to construct more complicated structures on top of it, Microsoft Excel's data model focuses on keeping things simple while still providing you with a wide range of functionality. While Power BI works with the simplification of real-time data acquired from many sources in addition to complicated analysis of past data, Microsoft Excel is mostly utilized for basic analytical activities on past data only.

• Reporting: When it comes to functionality and interaction, Microsoft Excel only provides a small selection of dashboards. Its tabular data structure enables you to view data using a variety of chart types. however For bigger datasets, it is not the best tool. The reports are simple to read and aesthetically appealing because to Power BI's powerful features including easy formatting, natural language querying, scaling, editing, and filtering.

• Server Deployment: The on-premises option made available by the Microsoft Power BI Deployment Suit is called Power BI Report Server. On the other hand, the cloud service and cloud solution is Power BI Service. By setting up an Excel Services Application service application in Central Administration, Excel Services can be made available. Running the Excel Services application pool requires a domain account. To carry out the procedures, you must be a member of the Farm Administrators group.

• Convert Models: Excel has ability to work on simple and structured data models. On the other hand, power bi is ideal for building complex data models easily. Power BI Desktop allows you to quickly import Excel files with Power Query queries and Power Pivot models. Based on the Excel worksheet, Power BI Desktop automatically generates reports and visualizations. With Power BI Desktop, you may keep enhancing and modifying such reports after import.

• Cost: Excel is only paid version and power BI has free version and a payment version.

6. List 20 data sources supported by Power Bi desktop.

Ans: Here are the 20 listed data sources supported by Power BI Desktop are as follows: i. Excel ii. Text/CSV iii. XML iv. JSON v. Folder vi. PDF vii. Parquet viii. SharePoint Folder ix. SQL server database x. Access database xi. Oracle Database xii. IBM Db2 database xiii. SAP Hana xiv. Amazon Redshift xv. Impala xvi. Google Big Query xvii. Snowflake xviii. Vartica xix. Exasol xx. Azure SQL Database

Power BI Assignment 3

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

   Ans: a. Power BI Desktop: A Windows Desktop application for data analysis and reports making.
   b. Power BI Service: An online software as a service, used to collaborate and publish Power BI reports.
   c. Power BI mobile: Access and view Power BI dashboards and live reports on mobile devices such as IOS and Android.
   d. Power BI Report Builder: A tool for creating Paginated reports that can be published to Power BI.
   e. Power BI Report Server: Power BI Report Server is an on-premises reporting solution that can be moved to the cloud tomorrow. You can transition to the cloud at your own pace because it is a part of Power BI Premium.
   f. Power BI Embedded: You can embed Power BI products like reports, dashboards, and tiles in a website or a web application thanks to embedded analytics in Power BI.

2. **What limitations of Excel, Microsoft solved by Power BI?**

   Ans: Excel is used to arrange data, manipulate it, then carry out computations and mathematical procedures. Power BI, on the other hand, was designed as a business intelligence and data visualization tool.

   a. The amount of information that Excel can handle has limits. Power BI, in comparison, can manage far more data.
   b. While Excel's connectivity options are restricted, Power BI can connect to a vast number of data sources. Furthermore, Power BI is much easier to utilize on mobile devices than Excel is.
   c. Excel can be processed more quickly than Power BI.
   d. In comparison to Excel dashboards, Power BI dashboards are more aesthetically pleasing, interactive, and configurable.
   e. Compared to Excel, Power BI is a more potent tool for comparing tables, reports, or data files.

3. **Explain Power Query?**

   Ans: Power Query is a crucial tool for any analyst working since it allows users to source data in various formats while saving users hours of time and minimizing human mistakes. Power Query can successfully automate time-consuming manual tasks by remembering the user's data transformation actions. Modifying data layout, connecting to central data sources, merging related tables, and combining numerous data are common use cases.

4. Explain Power Map?

Ans: Microsoft Power map is an effective data visualization application that enable to us to see data in variety of ways More than a million sets of data can be visually plotted in 3D format. By looking at our data in a geographical context and tracking changes over time, we can gain new insights. We have 4 map types in in Power BI.
1. Basic Map: Used to plot the numerical distribution of data in the form of data points.
2. Filled Map: These are used to plot the geographical distribution of categorical data.
3. Shape Map: It is used to plot Power BI custom map visuals.
4. ArcGIS Map: This is most advanced type of map supported by Power BI. It allows you to plot maps containing street view and heat maps, with advanced customization options.

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

Ans: A large number of companies utilize SharePoint to manage and provide BI material to consumers. Power BI have made investments in upgrading and building more complex connections with SharePoint since Power BI team understand how crucial this strategy is. The Power BI webpart for SharePoint Online and an improved Reporting Services Report Viewer webpart for SharePoint on-premises were also released over the last year. Customers like the freedom it enables them to use their BI content to create highly personalized SharePoint experiences. By eliminating the SharePoint integrated mode from Reporting Services deployment options while still allowing integration with SharePoint using the new web element, SharePoint 2019 keeps up with the goal we initially stated in our Reporting Services blog. The changes were made to enable us to develop and deliver integration features more quickly and often, better meeting the demands of customers both now and in the future. This decision was based on the constant input from Power BI users.

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

Ans: • Get Data: Click the Get Data button. The workspace has two different "Get Data" sections, each consisting of two parts of him: at the bottom of the left navigation pane. a. Content Pack Libraries and b. Importing or Connecting Data. • Reporting: The reporting functionality has been significantly improved. You can change the colors of the graph and insert free text into the Text Box. • Settings: You now have more control over Power BI. Click the "Settings" button. B. Manage personal storage, create content packs, view content packs, and Power BI for Office 365.