**Power BI Assignment 2**

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

**Ans.** The natural queries Q&A section in the power BI is very useful to understand the data. It can be used directly to get data analysis done and finding the required data just by putting natural language question. This is easy and quick and doses not involve making complicated dashboard for little analysis.

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

**Ans**. All reports in Power BI Desktop are published on the Power BI Service cloud platforms. User can access these reports and dashboard through Power BI service. The architecture of Power BI Service is divided into two sections- Front end Cluster, Back End cluster.

**Front End Cluster**- The **WFE** cluster manages the initial connection and authentication to the Power BI service.

The front-end services handle the initial connection and Azure Active Directory client authentication. User IDs are kept in the Azure Active Directory. After authentication, user requests are routed through Azure Traffic Manager to the closest data center. The Azure Content Delivery Network (CDN) makes static Power BI content and files available to users when a client or user has been authorized.

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

**Ans.** Once authenticated, the Back-End handles all subsequent user interactions. Power BI uses Azure Active Directory (Azure AD) to store and manage user identities. Azure AD also manages data storage and metadata using Azure BLOB and Azure SQL Database, respectively.

The Back-End cluster determines how authenticated clients interact with the Power BI service. The Back-End cluster manages visualizations, user dashboards, datasets, reports, data storage, data connections, data refresh, and other aspects of interacting with the Power BI service.

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

Ans. ASP.NET is a free web framework for building great websites and web applications using HTML, CSS, and JavaScript. It can also create Web APIs and use real-time technologies like Web Sockets. ASP.net is used for designing the front end of the service architecture to have a better interaction with the user.

1. Compare Microsoft Excel and PowerBi Desktop on the following features:

**Data import**- Power BI support data import from wide sources of data. Its faster and easier to import huge data in power BI as compared to excel.

**Data transformation**- It easier to perform data transformation in power BI as it can store the actions which can be copied or deleted without effecting other steps.

**Modelling**- excel has ability to work in simple and structured data model but power bi can be used to easily work on much complex model.

**Reporting**- making reports and publishing is very easy in power BI

**Server Deployment-** Server deployment is very easy in power BI as Power BI services are an integrated component these can be directly publish but in excel it is very complex.

**Convert Models-** power BI can be used to easily convert complex models

Cost- Power BI desktop is available as a free tool ( paid tool is also there) whereas Excel is a paid tool.

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

* **Ans.** Excel Workbook, Text, CSV, XML, JSON, Folder, PDF, SQL Server database, Access database, SQL Server Analysis Services database, Oracle database, IBM Db2 database, IBM Informix database (Beta), IBM Netezza, MySQL database, PostgreSQL database, Sybase database, Google BigQuery, Vertica, Snowflake, Essbase, Actian (Beta), Amazon Athena, AtScale cubes, BI Connector.