

## Power BI Assignment 2

**1. Power BI Q&A** is free and available to all users. In Power BI Desktop, report designers can use Q&A to explore data and create visualizations. In the Power BI service, everyone can explore their data with Q&A. Sometimes the fastest way to get an answer from your data is to perform a search over your data using natural language. The Q&A feature in Power BI lets you explore your data in your own words by using natural language.

Following are the advantages with examples:

**a) Autocomplete:** As you type your question, Power BI Q&A shows relevant and contextual suggestions to help you quickly become productive with natural language. As you type, you get immediate feedback and results. The experience is like typing in a search engine.

**b) Red/Blue/Orange underlines:** Q&A shows words with underlines to help you see which words the system recognized or didn't recognize. A solid blue underline indicates that the system successfully matched the word to a field or value in the data-model. An orange dotted underline indicates that the word or phrase is categorized as low confidence. A red double-underline means Q&A didn't recognize the word at all.

**c) Visualization results:** As you enter your question, Q&A tries to instantly interpret and visualize the answer. As part of the latest updates, Q&A now tries to interpret the question and plot the fields automatically to the correct axis. For example, if you enter 'Sales by year', Q&A detects that year is a date field and always prioritizes placing this field on the X axis. If you want to change the visualization type, enter 'as chart type' after the question.

**d) Use Q&A for dashboards:** By default, Q&A is available at the top of dashboards. To use Q&A, enter a question in the Ask a question about your data box.

**2-** The WFE cluster uses Azure AD to authenticate clients and provide tokens for subsequent client connections to the Power BI service. Power BI uses the Azure Traffic Manager (Traffic Manager) to direct user traffic to the nearest datacenter. Traffic Manager directs requests using the DNS record of the client attempting to connect, authenticate, and to download static content and files. Power BI uses the Azure Content Delivery Network (CDN) to efficiently distribute the necessary static content and files to users based on geographical locale. To authenticate customers and provide tokens for subsequent Power BI customer connections, the WFE cluster manages the original Power BI link and authentication mechanism using AAD.

### 3- Backend Cluster:

The Back-End cluster is how authenticated clients interact with the Power BI service. Visualization, user dashboards, datasets, reports, data storage, information links, information refresh, and other Power BI service interaction elements are managed by the Back-End cluster. The Role Gateway works as a gateway between the demands of clients and the Power BI service.

Users do not directly communicate with positions other than the gateway's role. Azure API Management will eventually manage the gateway role.

**4-** ASP. NET Core is an open-source and asp.net core training cross-platform that runs on Windows, Linux, and Mac to develop modern cloud-based applications including IoT apps, Web Apps, Mobile Backends, and more. Power BI (PBI) is embedded into ASP.NET webforms as AppOwnsData model. Power BI embedded analytics allows you to embed your Power BI items such as reports, dashboards and tiles, in a web application or on a website. We can:

**a)** Deliver compelling data experiences for your end users, enabling them to take action based on insights from your solutions data.

**b)** Quickly and easily provide exceptional customer-facing reports, dashboards, and analytics in your own apps by using and branding Power BI as your own. Microsoft. PowerBI. Api library for .NET enables you to work with Power BI REST APIs in your .NET or NET Core application.

**5-** Comparison of Microsoft Excel and PowerBi Desktop on the following features:

**a) Data import:** Power BI also has Power Query; it can fetch data from everywhere. Excel can get data from everywhere with Power Query.

**b) Data transformation:** Excel's connecting capacity is limited, whereas Power BI can link to a vast number of data sources. Power BI may also be used via mobile devices, unlike Excel.

**c) Modeling:** Excel is focused on structured and simple data models with a wide range of features. Power BI focuses on data ingesting and easily building potentially complex data models.

**d) Reporting:** Excel reports are normal and ordinary compared with Power BI. Power BI offers Beautiful branded reports comparing Excel.

**e) Server Deployment:** Power BI Report Server can be deployed in Azure VMs (hosted cloud) if licensed through Power BI Premium or SQL Server Enterprise with Software Assurance

**f) Convert Models:** Power BI does not have the luxury of customizing a chart to the full extent. Therefore, if you are working with one set of charts, you can only work with that chart. Excel is special. We can create another set of charts only using built-in charts. For example, a thermometer chart.

**g) Cost:** Power BI Desktop is free to download and use for personal use, but it takes \$10 per month per user to share reports with others. Since we already have Excel, we need to spend additional money to procure this and build dashboards.

**6-** Following are the 20 data sources supported by Power Bi desktop:

1. Excel Workbook
2. Text/CSV
3. XML

4. JSON
5. Folder
6. PDF
7. Parquet
8. SharePoint folder
9. SQL Server database
10. Access database
11. SQL Server Analysis Services database
12. Oracle database
13. IBM Db2 database
14. IBM Informix database (Beta)
15. IBM Netezza
16. MySQL database
17. PostgreSQL database
18. Sybase database
19. Teradata database
20. SAP HANA database