Power BI Assignment 2

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

- It requires no prior knowledge on any querying language like SQL, excel. Querying is carried out using common and natual English language.
- Once dashboard is created and submitted to Business stakeholders, stakeholders find it easy to query on their own in the report submitted by the Analyst Team.
- Power BI shows predictions as user types the query which indeed helps user to query faster and confidently
- It reduces confusion to layman

for example, we may query **"show total sales country wise"**. Power BI understands the query as we type. When we type "show" it lists all the features available. The respected query results are displayed to user/Business stakeholders.

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

Power BI service Architecture contains two clusters.

- Web Front end cluster (WFE)
- Back-end cluster

Web Front End (WFE) cluster manages two important components.

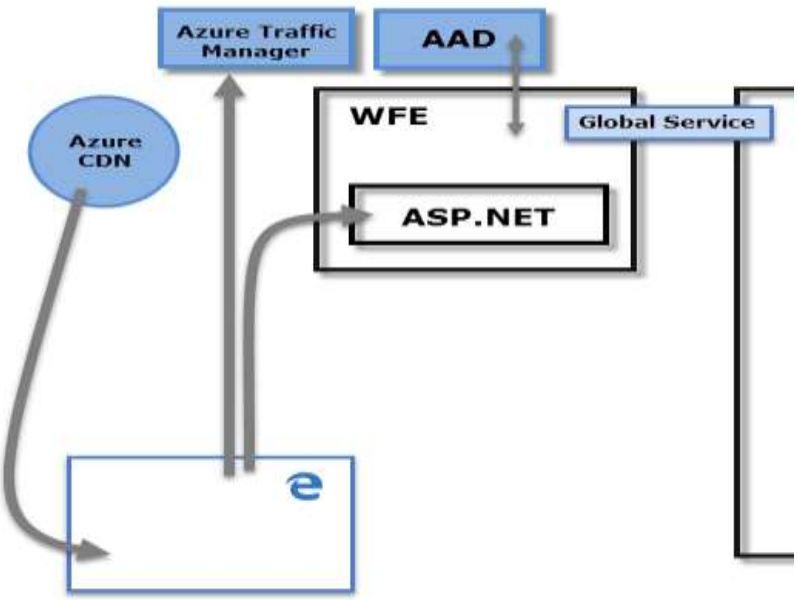
- Initial Connection
- User Authentication

Frond end cluster acts as intermediary between client and back end.

It uses **Azure Traffic Manager (ATM)** to make efficient and quick authentication. It attempts to send user traffic to nearest data center to reduce connection time. The nearest location is found by the DNS record of client attempting to connect.

Once user is connected, he/she can access static content & files. To share these files, Power BI uses another technology called **Azure Content Delivery (ACD)** to efficiently distribute the respective user file contents based on geographic locale.

Power BI uses **Azure Active Directory (AAD)** to authenticate users who sign in to the Power BI service, and in turn, uses the Power BI login credentials whenever a user attempts to access resources that require authentication



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

The Power BI services at the back end take care of

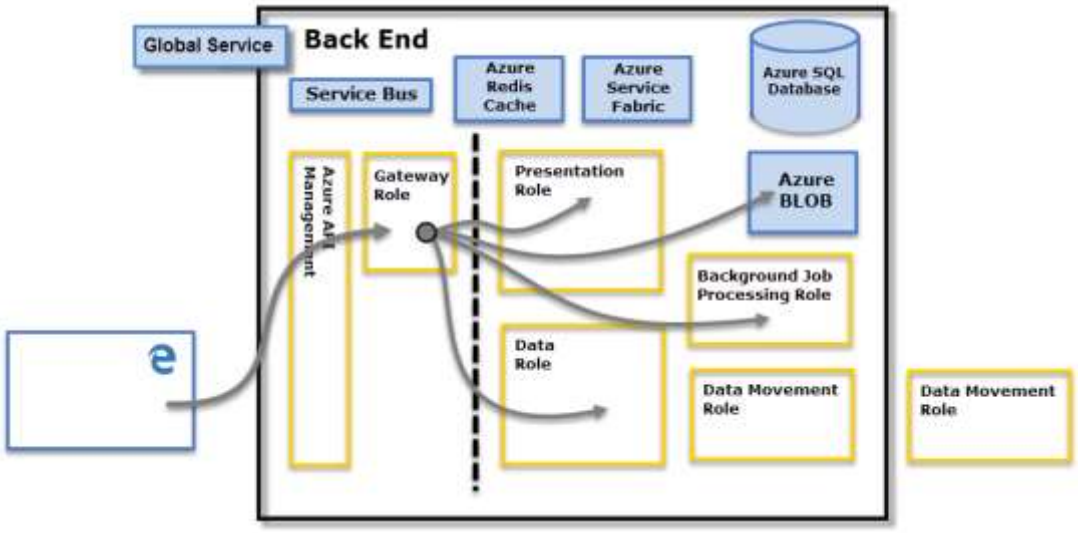
- Visualisation
- Datasets
- Storage
- Reports
- Data Connections
- Data refreshing and other interactions with Power BI

At the back-end, a web client has only two direct points of interaction

- Azure API Management
- Gateway role

The Gateway Role acts as a gateway between user requests and the Power BI service. Users do not interact directly with any roles other than the Gateway Role. Azure API Management will eventually handle the Gateway Role. Azure API Management will eventually handle the Gateway Role.

These two components are responsible for load balancing, authentication, authorization, routing, etc.

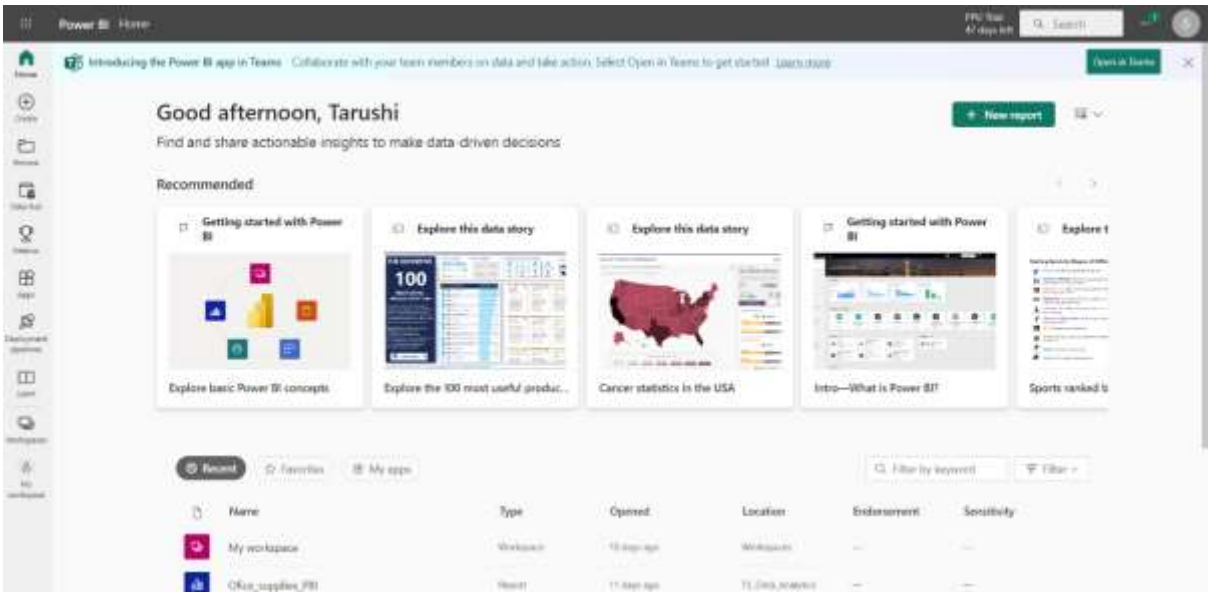


4. What ASP.NET component does in Power BI Service Architecture?

ASP.NET is a web development platform provided by microsoft.

- ASP ➔ Active Server Page
- NET➔ Network enabled technologies

ASP.NET component plays a major role while publishing reports and dashboards to workspace where stakeholder interact with it in front end provided by Power BI service. Not only that, BI dashboards can also be accessed through other apps like Microsoft teams which embeds BI Application through ASP.NET framework



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

Data import
Data transformation
Modelling
Reporting
Server Deployment
Convert Models
Cost

FEATURE	EXCEL	POWER BI
Data Import	Excel can get data from limited resources with “Power query.”	Power BI can exclusively get any data from 80+ data sources.
Data Transformation	Using Power Query Editor, Data transformation becomes easier.	Power Query Editor has extra Diagnostic feature when compared to excel.
Modelling	Excel is totally focused on structured and simplest data models with wide range of features.	Power BI is really focused on data ingest and building potentially complex data models easily.
Reporting	Excel reports are normal and ordinary comparing Power BI	Power BI offers beautiful, branded reports comparing excel
Server Deployment	Can share a workbook by saving it to a document management server	Can publish the report by Power BI service which can be accessed by stakeholders in workspace
Convert Models	Complex models cannot be converted and used in excel	Models used in Excel file can be converted and used in Power BI
Cost	Power BI Desktop is free to download and use for personnel use, but it takes $10 per month to share report with others.	Comes with paid version, we need to spend any additional amount to procure this and build dashboards

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

1. SQL Server database
2. Access database
3. SQL Server Analysis Services database
4. Oracle database
5. IBM Db2 database
6. IBM Informix database (Beta)
7. IBM Netezza
8. MySQL database
9. PostgreSQL database
10. Sybase database
11. Teradata database
12. SAP HANA database
13. SAP Business Warehouse Application Server
14. SAP Business Warehouse Message Server
15. Amazon Redshift
16. Impala
17. Google Big Query
18. Google Big Query (Azure AD)(Beta)
19. Vertica
20. Snowflake