

Power BI Assignment 2

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

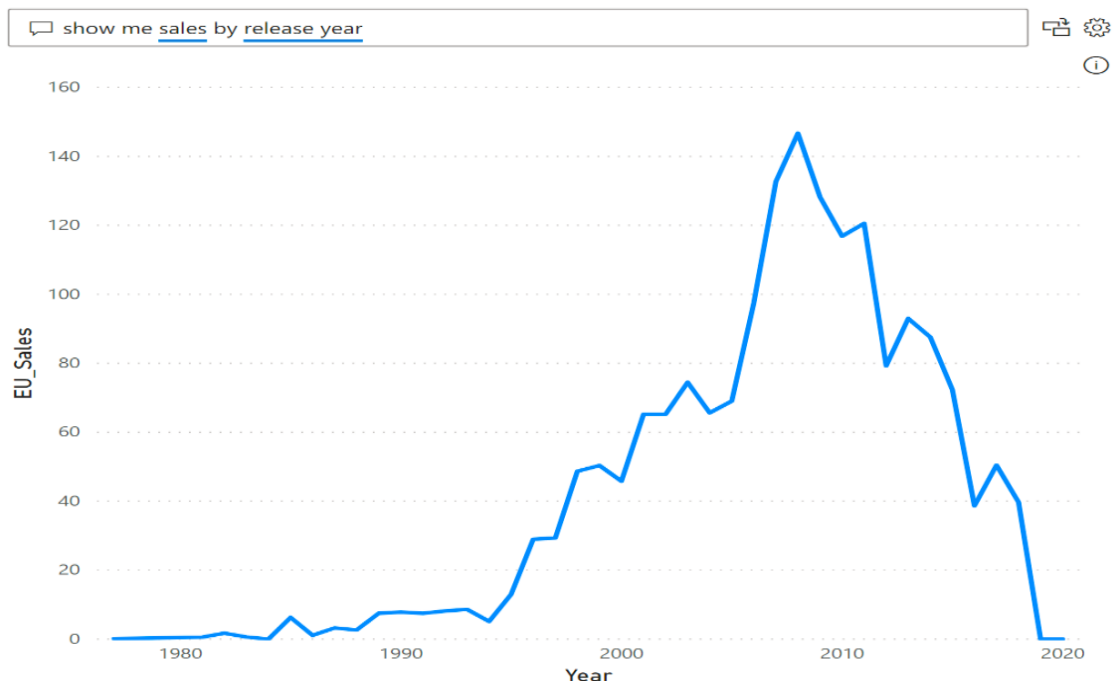
Sometimes the fastest way to get an answer from your data is to perform a search over your data using natural language. The Q&A feature in Power BI lets you explore your data in your own words using natural language.

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. Our mobile apps support Q&A too, with the Q&A virtual assistant in iOS and the Q&A visual on Android devices. If you have permission to edit a dashboard or report, you can also pin your Q&A results.

Even before you start typing, Q&A displays a new screen with suggestions to help you form your question. Start either from one of the suggested questions or type your own questions. Q&A supports a wide range of questions, including but not limited to:

- **Ask natural questions** Which sales has the highest revenue?
- **Use relative date filtering** Show me sales in the last year
- **Return only the top N** Top 10 products by sales
- **Provide a filter** Show me sales in the USA
- **Provide complex conditions** Show me sales where product category is Category 1 or Category 2
- **Return a specific visual** Show me sales by product as pie chart
- **Use complex aggregations** Show me median sales by product
- **Sort results** Show me top 10 countries by sales ordered by country code
- **Compare data** Show me date by total sales vs total cost
- **View trends** Show me sales over time

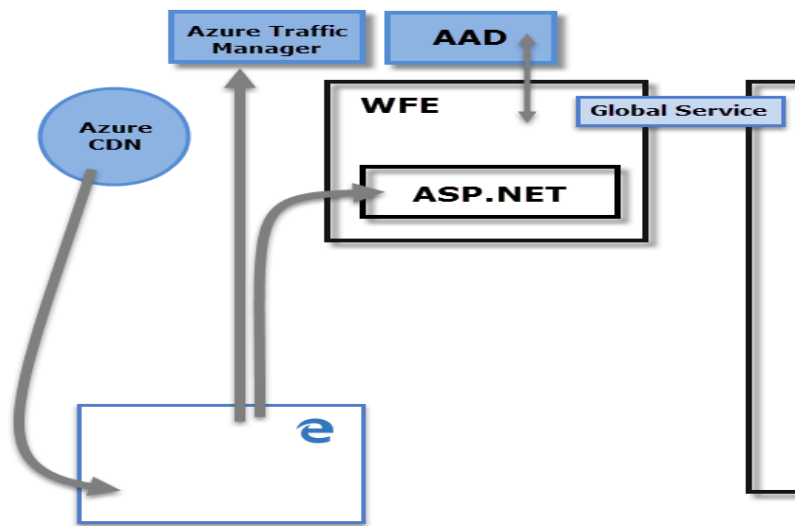
Example



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

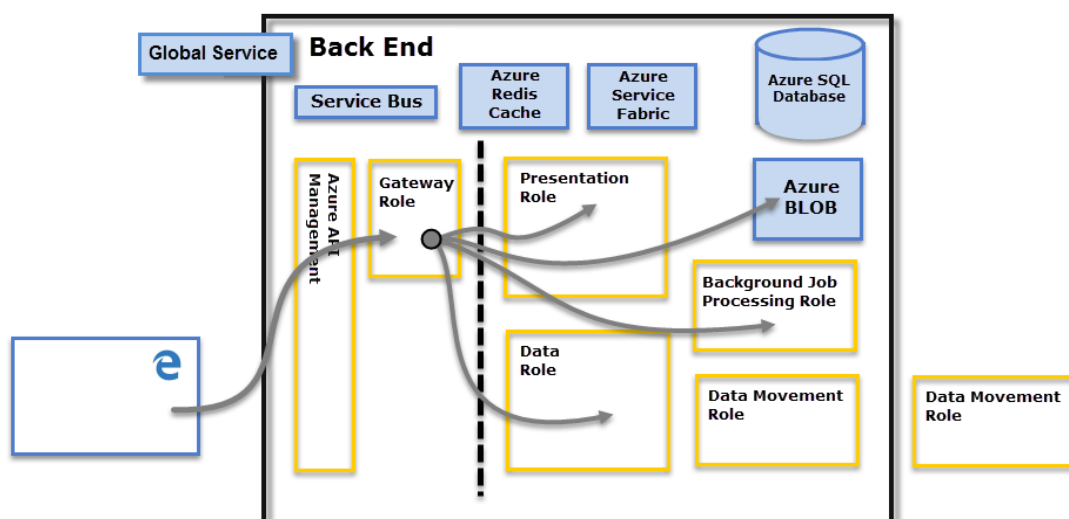
Each Power BI deployment consists of two clusters – a Web Front End (**WFE**) cluster, and a **Back-End** cluster.

The **WFE** cluster manages the initial connection and authentication process for Power BI, using AAD to authenticate clients and provide tokens for subsequent client connections to the Power BI service. Power BI also uses the **Azure Traffic Manager** (ATM) to direct user traffic to the nearest data centre, determined by the DNS record of the client attempting to connect, for the authentication process 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.



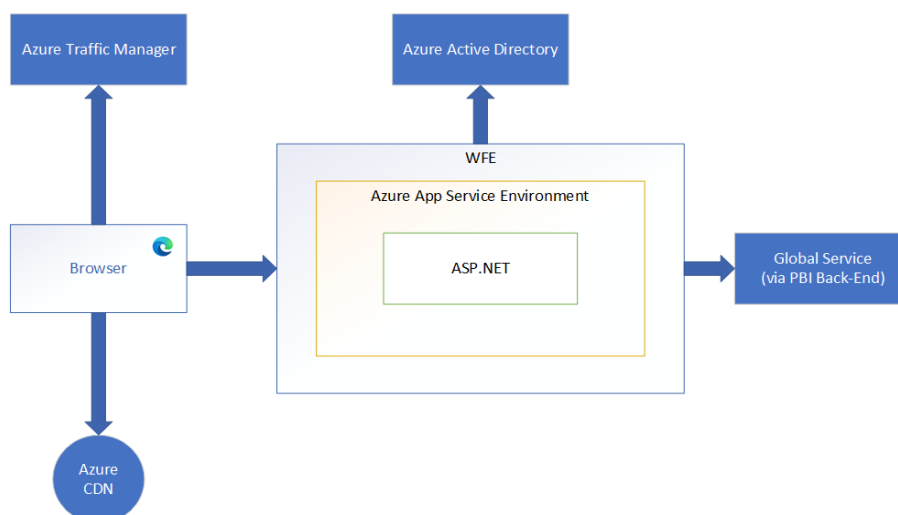
3. Explain Back End cluster from Power BI Service Architecture?

The **Back-End** cluster is 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. 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**.



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

The WFE cluster provides the user's browser with the initial HTML page contents on site load and manages the initial connection and authentication process for Power BI, using Azure Active Directory (Azure AD) to authenticate clients and provide tokens for subsequent client connections to the Power BI back-end service.



A WFE cluster consists of an ASP.NET website running in the [Azure App Service Environment](#). When users attempt to connect to the Power BI service, the client's DNS service may communicate with the Azure Traffic Manager to find the most appropriate (usually nearest) datacenter with a Power BI deployment. For more information about this process, see [Performance traffic-routing method for Azure Traffic Manager](#).

The WFE cluster assigned to the user manages the login and authentication sequence (described later in this article) and obtains an Azure AD access token once authentication is successful. The ASP.NET component within the WFE cluster parses the token to determine which organization the user belongs to, and then consults the Power BI Global Service. The WFE specifies to the browser which back-end cluster houses the organization's tenant. Once a user is authenticated, subsequent client interactions for customer data occur with the back-end or Premium cluster directly, without the WFE being an intermediary for those requests.

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

Features	Microsoft Excel	Microsoft PowerBi
Data import:	Excel can get data from everywhere with Power Query.	Since Power BI also has Power Query it can also fetch data from almost everywhere.
Data transformation:	As of 2017, a variant of this technology has become officially available in Power Query (add-column-from-example), which is also available naively in Excel (from the "Data" tab -> "From Tables" -> Add Column from Examples)	In Power Bi importing data into Power Query Editor. As we are intended to sort our data, we will go with the "Transform Data" option.

Modelling:	Excel is entirely focused on structured and straightforward data models with a wide range of features.	Power BI is really focused on data ingest and building potentially complex data models quickly.
Reporting:	Simple and less attractive reports than those of Power bi	More beautiful, personalized attractive and interactive reports
Server Deployment:	Power BI Report Server is an on-premises report server with a web portal in which you display and manage reports and KPIs. Along with it come the tools to create Power BI reports, paginated reports, mobile reports, and KPIs.	Launch Microsoft Office Excel. Open the Excel worksheet you want to publish. Click the "File" tab. Click the "Save As" icon. Click the down arrow on the "Save as type:" list box. Select "Web Page" from the list of file types. Type an appropriate name in the "File name" input box. Click the button labeled "Publish." Press the button labeled "Publish file format option" in the "Publish as Web Page" dialog box. Launch your FTP application. Log on to your Web server. Upload the Web page.
Convert Models:	We will click any cell on the table and go to the Design tab. We will click Convert to Range in the Tools group.	Using DAX formula, we can convert Model or table in PBI.
Cost:	Since we already have excel with us, we need to spend any additional amount to procure this and build dashboards.	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.

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

The **Database** category provides the following data connections:

1. SQL Server database	2. Google BigQuery
3. Access database	4. Snowflake
5. SQL Server Analysis Services database	6. Azure Cosmos DB

7. Oracle database	8. Azure HDInsight (HDFS)
9. IBM Db2 database	10. Azure Databricks
11. MySQL database	12. Salesforce Objects
13. PostgreSQL database	14. Google Analytics
15. Teradata database	16. Adobe Analytics
17. SAP HANA database	18. GitHub (Beta)
19. Amazon Redshift	20. Web

