**Power BI Assignment 5**

1. Explain DAX.

### 1. **Explain DAX (Data Analysis Expressions)**

**DAX** is a formula language used in Power BI, Excel, and Analysis Services for creating calculated columns, measures, and custom tables in tabular data models. It is similar to Excel functions but designed specifically for working with relational data and creating more complex calculations.

**Key Features of DAX**:

* **Calculated Columns**: New columns based on existing data, calculated row by row.
* **Measures**: Aggregated data such as sums, averages, or ratios.
* **Functions**: DAX includes a wide variety of functions like date and time functions, filter functions, statistical functions, etc.

**Example**: A common DAX formula could be SUM(Sales[Revenue]) to calculate the total sales revenue.

### 2. **Datasets, Reports, and Dashboards in Power BI**

* **Datasets**: These are collections of data that have been imported or connected to Power BI. Datasets can come from databases, cloud services, Excel files, and more. They serve as the source of data for creating reports and visualizations.
* **Reports**: Reports are collections of visualizations (charts, graphs, tables) created from a dataset. A report can contain multiple pages, each with different insights or analyses from the same dataset.
* **Dashboards**: Dashboards are single-page, consolidated views of multiple reports or datasets. They allow users to pin the most important or relevant visualizations from different reports onto one page for quick, high-level insights.

**Relationship**:

* A dataset feeds data into reports.
* Reports consist of visualizations generated from the dataset.
* Dashboards consolidate key elements from multiple reports and datasets for a summarized view.

### 3. **How Reports Can Be Created in Power BI: Two Ways**

#### 1. **Using Power BI Desktop**

* **Navigation**:
  1. Open **Power BI Desktop**.
  2. Go to the **Home tab** and click **Get Data** to connect to a dataset (e.g., Excel, SQL Server).
  3. After connecting, use the **Fields pane** to drag and drop fields onto the **Report canvas** to create visualizations.
  4. Use the **Visualizations pane** to switch between different types of charts (bar, pie, line).
  5. Create multiple pages within the report by clicking **New Page** at the bottom.
  6. Save the report or publish it to the **Power BI Service** for sharing.

#### 2. **Using Power BI Service (Online)**

* **Navigation**:
  1. Go to **Power BI Service** and log in.
  2. Click on **My Workspace** or another workspace where you have access.
  3. Click **Create** > **Report** and choose a dataset or create one by importing data.
  4. Start building the report by selecting fields from the dataset and creating visualizations.
  5. Customize the report layout and visual types as needed.
  6. Save the report within the workspace or share it directly with others.

### 4. **How to Connect to Data in Power BI?**

#### Steps to Use Content Pack to Connect to Google Analytics:

1. **Open Power BI Service** and log in.
2. Go to **Apps** and search for the **Google Analytics Content Pack**.
3. Select the **Google Analytics** app and click **Get It Now**.
4. You will be prompted to sign in to your Google Analytics account.
5. After signing in, choose the **specific dataset** you want to pull from Google Analytics (e.g., website traffic).
6. The data will load, and Power BI will automatically generate a pre-built dashboard and report.
7. You can then customize the report or dashboard as needed using the data from Google Analytics.

### 5. **How to Import Local Files in Power BI?**

#### Steps:

1. **Open Power BI Desktop** or **Power BI Service**.
2. In **Power BI Desktop**, click on **Get Data** in the **Home tab**.
3. Select **Local File** (e.g., Excel, CSV, or any supported format).
4. Browse and select the local file you want to import.
5. Click **Load** to import the data or click **Transform Data** to make any changes using Power Query.
6. Once loaded, you can start creating visualizations from the dataset.

### 6. **Power BI Visualization: Reading View vs. Editing View**

* **Reading View**:
  + This view is available in **Power BI Service** (online). It is a **view-only mode**, where users can interact with reports and dashboards but cannot make any changes to the underlying visuals or data.
  + **Use Case**: This is ideal for end-users or stakeholders who need to view and interact with reports but don’t need to edit them.
* **Editing View**:
  + The **Editing View** is where you can modify or create reports and visualizations. This mode allows full control over the dataset, reports, and visuals, enabling users to edit or customize reports.
  + **Use Case**: Used by report creators or analysts who need to design, modify, or improve existing reports in Power BI Service or Power BI Desktop.