**Power BI Questions**

**1. What is the difference between DirectQuery and Import mode in Power BI, and when would you use each?**

**Difference Between Slicer and Filter in Power BI**

1. **Usage**
   * **Slicer: Used for interactive filtering, allowing users to dynamically change the displayed data.**
   * **Filter: Used for background filtering, applying predefined conditions to limit the data shown.**
2. **Location**
   * **Slicer: Added directly to the report page as a visual element.**
   * **Filter: Found in the Filter Pane, applied at different levels (visual, page, report).**
3. **Types**
   * **Slicer: Supports dropdowns, checkboxes, buttons, and multi-selection options.**
   * **Filter: Includes visual filters, page filters, report filters, and drillthrough filters.**
4. **User Control**
   * **Slicer: Users can interact directly with it to modify the data view.**
   * **Filter: Can be pre-set by the report creator, ensuring consistency across the report.**
5. **Example**
   * **Slicer: Allows users to filter data by Year (2019, 2020, 2021) dynamically.**
   * **Filter: A report filter can be applied to show only the last 6 months’ sales, regardless of user input.**

**2. How do you create a hierarchy in Power BI, and what are its use cases?**

**Steps to Create a Hierarchy:**

1. In the **Fields pane**, right-click on a column (e.g., "Year").
2. Select **Create Hierarchy** and rename it.
3. Drag additional related fields (e.g., "Month", "Day") into the hierarchy.
4. Use it in visuals like **drill-down reports**.

**Use Cases:**

* **Drill-down analysis** (e.g., Year → Quarter → Month → Day).
* **Consistent navigation** across different reports.
* **Better organization** of data in Power BI.

**3. Explain how to use the "What-If" parameter in Power BI for scenario analysis.**

**Steps to Create a "What-If" Parameter:**

1. Go to the **Modeling** tab and select **New Parameter → What-If Parameter**.
2. Set a **minimum, maximum, and increment value** (e.g., 0 to 100 with steps of 5).
3. Power BI creates a **DAX measure** for using the parameter in calculations.
4. Use it in visuals to **see different scenarios dynamically**.

**Use Case Example:**

* Adjusting **discount rates** to see their effect on sales.
* Changing **budget allocations** to analyze different financial scenarios.

**4. How can you schedule data refreshes in Power BI for live reports?**

**Steps to Schedule a Refresh:**

1. Publish the report to **Power BI Service**.
2. Go to **Datasets → Scheduled Refresh** in Power BI Service.
3. Configure the **refresh frequency** (daily, hourly, etc.).
4. Ensure a **Power BI Gateway** is installed for on-premise data sources.
5. Save the settings.

**Use Case:**

* Automatically updating reports without manual intervention.
* Keeping dashboards in sync with real-time business data.

**Difference Between Measures and Calculated Columns in Power BI**

1. **Definition**
   * **Measures**: A formula computed dynamically at the **visual level**, based on the context of the data.
   * **Calculated Columns**: A **new column** added to the dataset that is computed once during data refresh.
2. **Storage**
   * **Measures**: **Not stored** in the data model; calculated only when needed.
   * **Calculated Columns**: **Stored** in the data model, making them part of the data table.
3. **Performance**
   * **Measures**: **More efficient**, as they are recalculated on the fly depending on the filter context.
   * **Calculated Columns**: **Can increase report size** due to storage in the data model.
4. **Example**
   * **Measures**: SUM(sales[Revenue]) – Aggregates revenue dynamically based on visual context.
   * **Calculated Columns**: sales[Discounted Price] = sales[Price] \* 0.9 – Adds a calculated column to the table for discounted price.
5. **Use Case**
   * **Measures**: Used for **aggregations** like sums, averages, and **KPIs** where the result is dynamic.
   * **Calculated Columns**: Used for **grouping** data, **creating categories**, or **filtering** based on calculated values.