Lesson 7

Topic: Project 1 - Basic Sales Dashboard
Prerequisites: Download Retail_sales_data.xlsx file

1. **Import Retail_Sales_Data.xlsx into Power BI.**

   Open Power BI Desktop.

   On the **Home tab**, click **"Get Data"**.

   Choose **"Excel workbook"** from the dropdown.

   Browse your computer to locate the file:
   Select **Retail_Sales_Data.xlsx**
   Click **"Open"**

   Power BI will show a **Navigator pane** with the sheets or tables inside the file.
   Check the boxes for the sheets/tables you want to import (e.g., Sales, Products, etc.).

   Click **"Load"** to load the data directly into Power BI.

2. **Create a table visual showing Region and Sales.**

   1. In Power BI Desktop, go to the Report view (the icon with the chart on the left sidebar).
   2. In the Visualizations pane (on the right), click the Table visual (the one that looks like a grid/table).
   3. The empty table visual will appear on your canvas.
   4. In the Fields pane, locate and do the following:
      - Drag the Region field into the Values section of the table visual.
      - Drag the Sales field into the Values section as well.
   5. You now have a table that shows Region-wise Sales.

   Optional Enhancements:

   - Sort by Sales: Click the column header to sort ascending/descending.

- Format numbers: Click the visual > go to “Format” > Data Labels / Values to change number formats (e.g., currency).

3. **Add a slicer for Product.**
    1. Go to the Report view in Power BI.
    2. In the Visualizations pane, click on the Slicer visual (it looks like a filter icon or a rectangle with a funnel).
    3. A blank slicer will appear on your report canvas.
    4. In the Fields pane, find the Product field (or Product Name, depending on your data).
    5. Drag the Product field into the Field area of the slicer visual.
    6. The slicer now allows you to filter the entire report by Product.

4. **Format the dashboard theme to "Dark Mode."**
    1. Open your Power BI report.
    2. Go to the “View” tab on the top ribbon.
    3. In the Themes section, click the drop-down arrow next to the current theme (e.g., *Default*, *Colorblind Safe*, etc.).
    4. Scroll through the list and select “Dark” or “Storm” (both are dark themes).
        - "Dark" is a true black-based theme.
        - "Storm" is a dark grey with modern accents.
    5. Power BI will automatically apply the dark theme across your report**.**

    To **customize** the theme further:

    - Click **"Customize current theme"** (at the bottom of the theme list).
    - You can adjust colors, fonts, and backgrounds.

5. **What is the purpose of the "Data/Model" view in Power BI?**

    Data View

Purpose:
To explore, clean, and inspect the raw data you've loaded into Power BI.

- You can:

- View table contents like in Excel.
- Add calculated columns or measures using DAX.
- Check for errors or missing values.
- Rename or hide columns.

2. Model View

Purpose:
To define and manage relationships between different tables in your data model.

- You can:

- Create and manage relationships (e.g., connect Sales table to Products via ProductID).
- Set cardinality (e.g., one-to-many).
- Choose cross-filter direction (single/both).
- Create hierarchies and organize fields into folders.

6. **Build a dashboard with:**
    - **A bar chart of Sales by Region.**
    - **A line chart of Sales over Date.**
    - **A card showing total Profit.**

1. Bar Chart: Sales by Region

- Click the bar chart visual from the Visualizations pane.
- Drag Region to the X-axis (or "Axis").
- Drag Sales to the Values field.
- Optional: Sort by Sales descending for clarity.

2. Line Chart: Sales Over Date

- Click the line chart visual.
- Drag Date to the X-axis.
- Drag Sales to the Values.
- Make sure your Date field is properly formatted as a date.
- Power BI will automatically plot Sales over time.

3. Card: Total Profit

- Click the Card visual (looks like a single number).
- Drag the Profit field into the card.
- It will show the total profit value from your dataset.
- Format as currency if needed (Home tab > Currency format).

7. **Add a drill-through filter from Region to a detailed sales page.**

1. Create the Detailed Page

1. At the bottom of Power BI, click + New Page.
2. Rename it to something like “Region Sales Details”.
3. On this new page, add any visuals you want (e.g., table with product sales, chart of sales by category, etc.).

2. Set Up Drill-through Filter

1. On the “Region Sales Details” page:
    - Look in the Visualizations pane for the Drill-through filter well on the right (under Filters).
2. Drag the Region field into the Drill-through section.
3. Power BI will automatically add a Back button – if not:
    - Insert > Buttons > Back (this allows users to return to the previous page).

- 3. Use the Drill-through Feature

1. Go back to your main report page (with bar chart of Sales by Region).
2. Right-click on any bar (a Region) in the chart.
3. Choose Drill through > Region Sales Details.
4. You will be taken to the second page, filtered for the selected Region.

8. Use conditional formatting to highlight high-profit regions.

1. Add a Table visual in Power BI.
2. Add fields:
   OrderID, Date, Product, Region, Sales, Profit.
3. In the Values section, click the dropdown arrow next to Region.
4. Select Conditional formatting → Background color.
5. In the window:

- Format by: choose Rules.
- Based on field: select Profit.
- Rules:
  - If Profit is greater than or equal to 100, then Green background
  - If Profit is less than 100, then No color or another lighter color.
- Example rule setup:
  mathematica
  If value >= 100 → Green

6. Click OK.

9. Publish the dashboard to Power BI Service.

1. Finish your report/dashboard in Power BI Desktop.
2. Go to the Home tab (top menu).
3. Click on the "Publish" button (cloud icon).
4. Power BI will ask: “Where do you want to publish?”
   - Select My workspace or a named workspace if you have access.

5. Wait for the upload — it will say:
   "Success! Your report was published..."
6. Click on the link to "Open in Power BI" to view your dashboard online.

🕹️ After Publishing (in Power BI Service):

- You can:
  - Share with others (if you have Pro license).
  - Set up scheduled data refresh.
  - Create dashboards by pinning visuals.
  - Add to Power BI apps if part of a team workspace.

10.Share the report with a colleague (simulate steps).

Step-by-Step Simulation: Sharing a Power BI Report

1. Open Power BI Service (Online)

- Go to: https://app.powerbi.com
- Sign in with your Power BI account.

---

2. Locate Your Report

- On the left pane, click on My Workspace (or the workspace where you published the report).
- Find and click on your report (e.g., *Sales_Profit_Report*).

---

3. Click “Share”

- At the top-right corner, click the “Share” button (icon: person with a plus ➕).

---

4. Enter Colleague’s Email

- In the popup:

- Type your colleague's email address (e.g., john.doe@company.com)
- Optionally, add a message like:

"Hi John, please review this report and let me know your feedback."

---

5. Choose Sharing Options

- Allow recipient to reshare the report (optional).
- Allow recipient to build content with the data (optional).
- You must have a Power BI Pro license to share reports outside of your workspace.

---

6. Click “Send”

- Click the Send button. Your colleague will get an email notification with a link to the report.

11. Add a custom "Sales Growth %" measure without DAX (use Quick Measures).

1. Open Power BI Desktop

Open your report that includes fields like Sales and Date.

---

2. Right-click your table name (e.g., “SalesData”)

- In Fields pane on the right → right-click your table
- Choose New Quick Measure

---

3. In the Quick Measure window:

Select the Calculation Type:

- From the dropdown, choose:
“Percentage difference from previous value”

Set the following:

- Base value → Select your Sales field
- Time → Select your Date field
- Time period → Choose Month (or Year, depending on your goal)

4. Click OK

12. Optimize the dataset for faster refresh (e.g., remove unused columns).

1. Remove Unused Columns

Where: In Power Query Editor
How:

1. In Power BI Desktop, click:
   Home → Transform data
2. In Power Query Editor:
   - Identify columns you don't use in visuals, filters, DAX, or relationships
   - Right-click each → Remove
   - Example: OrderID, CustomerID, Notes, etc. (if not used)

Tip: Focus on text columns, which are more memory-heavy.

◆ 2. Remove Unused Tables

1. Still in Power Query:
   - Delete any staging tables or imported tables not used in visuals, measures, or relationships
   - Right-click → Delete

◆ 3. Set Data Types Properly

- Set proper data types: e.g., Date for dates, Whole Number for integers
- Avoid using Text for numeric values

This reduces memory usage and improves engine efficiency.

🔹 4. Disable Auto Date/Time

1. Go to File → Options → Data Load
2. Uncheck: Auto Date/Time for new files

❗ Auto date/time creates hidden tables that slow down refresh.

🔹 5. Filter Unnecessary Rows Early

- Apply filters in Power Query to limit unnecessary rows (e.g., archive data from years you don't need)
- Example:
  Only load data from 2023 onward:

  powerquery

  CopyEdit

  Table.SelectRows(Source, each [Date] >= #date(2023, 1, 1))

🔹 6. Use Import Mode Instead of DirectQuery (if possible)

- Import is faster for refresh and visuals
- If you're using DirectQuery and performance is bad, consider switching to Import and scheduling refreshes.

🛠 Final Step: Apply and Save

- After cleaning and transforming, click:
  Close & Apply

13. Troubleshoot: Slicers not affecting all visuals—how to fix?

1. Check Visual Interactions

Problem: Visual interactions may be disabled for certain visuals.

Fix:

1. Click the slicer (e.g., Region).
2. Go to Format → Edit interactions (on the ribbon).
3. Now, for each visual:
    - Click the filter icon to enable filtering,
    - Avoid the no filter icon .

🔁 Do this for each slicer and each visual it should affect.

🔹 2. Relationship Issues

Problem: There's no relationship between the slicer's table and the visual's table.

Fix:

1. Go to Model view.
2. Ensure there's a valid relationship between:
    - The field used in the slicer (e.g., Region)
    - And the fields used in the visuals (e.g., Sales table)

If not connected, create a relationship.

Relationship must be active and usually single-directional (one-to-many).

🔹 3. Different Tables for Slicer vs Visual

Problem: Your slicer is based on a different table than the visuals (e.g., Region_Table vs Sales_Data), and there's no relationship.

Fix:

- Ensure the slicer is using the same table (or a related one).
- Or create a lookup table for slicing and relate it to the fact table.

🔹 4. Sync Slicers Across Pages (if applicable)

If slicers on one page aren't affecting visuals on another:

1. Select the slicer
2. Go to View → Sync slicers
3. Choose which pages should share this slicer

- 5. Visual-Level Filters

Problem: A visual has filters that override the slicer.

Fix:

1. Click the visual → open the Filters pane
2. Remove any hard-coded filters (e.g., a Region filter that's fixed to “East”)

- 6. Data Type Mismatch

Problem: Slicer and visual fields have different data types

Fix:

- Check that both fields (e.g., Region) are of the same data type (Text, Number, etc.)

Example:

If you select Region = South in a slicer, but a visual still shows data from all regions:

- Make sure that visual is not excluded in interactions
- Check if it's using a different table or disconnected field

14.Embed the dashboard into a PowerPoint presentation.

1. Publish Your Report to Power BI Service

- In Power BI Desktop:
  - Click File → Publish → Publish to Power BI
  - Choose a workspace (e.g., My Workspace or a shared one)

You need to have a Power BI Service account.

- 2. Open the Report in Power BI Service

- Go to: https://app.powerbi.com
- Navigate to the workspace and open the published report

- 3. Embed in PowerPoint

Method 1: Using the Power BI Add-In in PowerPoint

1. Open PowerPoint
2. Go to Insert → Get Add-ins
3. Search for "Power BI"
4. Click Add

Now you will see a Power BI panel on the slide.

5. Sign in with your Power BI account
6. Select the report you want to embed
7. Choose the page (tab) of the report
8. Click Insert

You now have a live, interactive Power BI report in your slide!

Method 2: Manual Link (View Only)

1. In Power BI Service:
    - Open the report → click File → Embed report → PowerPoint
2. Click "Copy link"
3. Open PowerPoint → Paste the link on a slide as a clickable button or text

This is not embedded, just a link. Use Method 1 for true embed.

Tips

- Embedded report is live — you can filter, scroll, interact during the presentation
- You must be logged in to Power BI to interact with it
- If you present to others, they must have access to the report

15. Set up a scheduled refresh for the dataset in Power BI Service.

Step 1: Publish Your Report (if not already done)

1. In Power BI Desktop:
    - Click: Home → Publish
    - Choose your workspace (e.g., *My Workspace*)

◆ Step 2: Go to Power BI Service

1. Visit: https://app.powerbi.com
2. Navigate to the workspace where you published your report
3. Click on the Dataset (not the report)
4. Click the ellipsis (⋯) → Settings

◆ Step 3: Configure Scheduled Refresh

1. Under Dataset settings, scroll to Scheduled refresh
2. Set:
    - Keep data updated → ON
    - Frequency → Daily or Weekly
    - Time zone and preferred time(s)
3. (Optional) Set email notifications for refresh failures

◆ Step 4: Set Up Data Source Credentials

1. Under Data source credentials (just above Scheduled refresh):

- Click Edit credentials
- Choose the correct authentication method:
  - OAuth2 (for SharePoint, OneDrive)
  - Windows/Database (for SQL)
- Click Sign in

Refresh will now run automatically at the times you selected.