Lesson – 7

Topic: Project 1 - Basic Sales Dashboard

Prerequisites: Download Retail_sales_data.xlsx file

1.Import Retail_Sales_Data.xlsx into Power BI.

📥 Step-by-Step: Import Excel into Power BI

1. Open Power BI Desktop.
2. Click on `Home` > `Get data` > `Excel`.
3. Browse to find `Retail_Sales_Data.xlsx`:
   - Navigate to the folder where your file is saved.
   - Select `Retail_Sales_Data.xlsx` and click Open.
4. Navigator Window Opens:
   - You'll see a list of tables/sheets inside the Excel file.
   - Check the boxes for the sheets or tables you want to import.
   - Click Load to import them directly, or click Transform Data to clean/edit data in Power Query.

   Data Loads into Power BI:

2.Create a table visual showing Region and Sales.

2. Switch to Report View

Click the Report View icon (📊) on the left sidebar.

3. Add a Table Visual

On the Visualizations pane (right side), click the Table icon.

Table Visual Icon

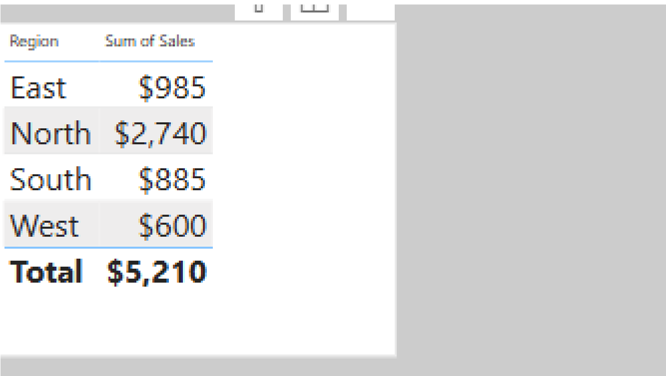
(It looks like a grid.)

4. Assign Fields to the Table

In the Fields pane (right side), drag:

Region → Under Columns (or drop into the "Values" box).

Sales → Under Values.



3.Add a slicer for Product.

tep-by-Step: Add a Slicer for Product

Make sure your data is loaded

Confirm that your Excel file (Retail_Sales_Data.xlsx) is already imported and the "Product" field is available in the Fields pane.

Add the slicer visual

Go to the Visualizations pane on the right.

Click on the Slicer icon (it looks like a filter/funnel).

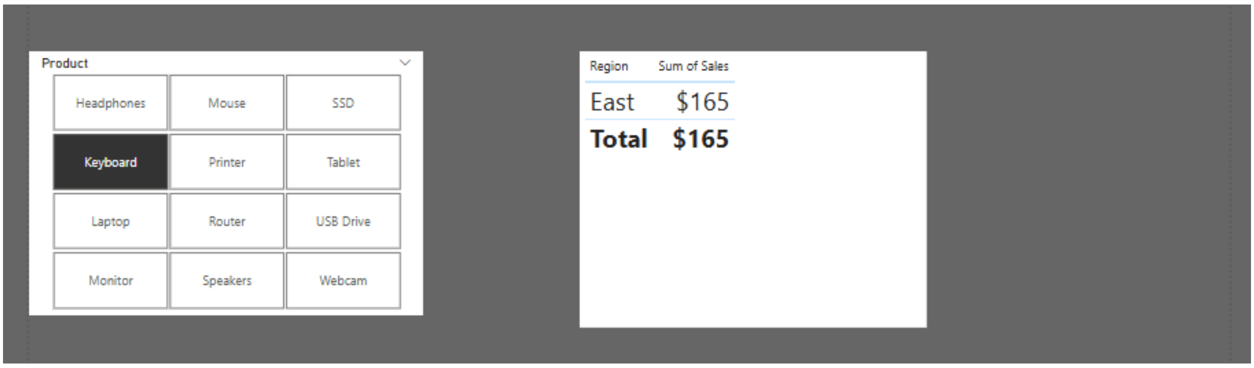
Add "Product" to the slicer

Drag the Product field from the Fields pane into the Values area of the slicer.

Customize the slicer (optional)

You can resize it on the report canvas.

Use the Format pane (paint roller icon) to change layout (e.g., dropdown vs. list), font size, and style.



4. Format the dashboard theme to "Dark Mode."

Step-by-Step: Apply Dark Mode Theme

Go to the View tab in the top ribbon.

In the Themes section, click on the dropdown arrow next to the theme previews.

Select a dark theme, such as:

"Dark"

Or click "Browse for themes" to import a custom dark .json theme.

Once selected, Power BI will update the entire report to the dark color scheme, including:

Background

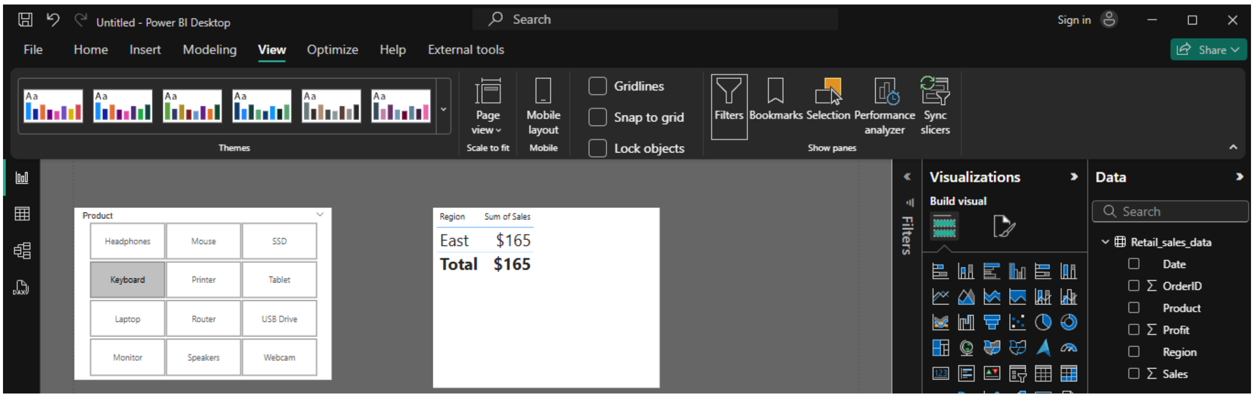
Visuals

Fonts (you may need to adjust some text manually for readability)

🛠️ Optional: Customize Theme Further

If you want more control (like specific colors or font styles), choose:

View > Customize current theme, then adjust colors, text, etc.



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

In Power BI Desktop, the Data/Model view (sometimes split into two tabs: Data and Model) is where you go to inspect and shape your data structures behind the scenes—essentially, it's your "behind-the-scenes" workspace for tables, fields, and relationships. Here's what each part lets you do:

6. Build a dashboard with:

A bar chart of Sales by Region.

A line chart of Sales over Date.

A card showing total Profit.

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

📊 1. Bar Chart – Sales by Region

In Visualizations, select the Clustered Bar Chart.

Drag:

Region → Axis

Sales → Values

Optional:

Sort by Sales descending

Format with Data Labels: On

📈 2. Line Chart – Sales Over Date

Select the Line Chart visual.

Drag:

Date → Axis (use a proper Date type, not text)

Sales → Values

Configure the X-axis to be continuous (not categorical) for a proper time series.

💳 3. Card – Total Profit

Select the Card visual.

Drag:

Profit → Values

It will automatically calculate the total.

🎨 Step 3: Style the Dashboard

Align visuals in a grid layout.

Use the Format pane to adjust colors, labels, borders.

Add a title using a Text box: “Sales Dashboard”

🧠 Tip:

If your data is raw (e.g., multiple transactions), Power BI will auto-aggregate sales and profit. If not, use DAX to summarize:

DAX

Total Profit = SUM(Retail_sales_data[Profit])

DAX

Sales by Region = SUMMARIZE(Retail_sales_data, Retail_sales_data[Region], "Total Sales", SUM(Retail_sales_data [Sales]))

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

Add a Table or Matrix visual:

Include Region and Profit columns

In the Visual, click on the Profit column dropdown:

Select Conditional formatting → Background color (or Font color).

In the dialog:

Choose Format by: Rules

Based on field: Profit

Set a rule like:

If value >= 50000 → Green

If value < 50000 → Red

Click OK.

☑ Option 2: Conditional Formatting in a Bar Chart (e.g., Sales by Region)

You can also apply conditional color to bars based on Profit:

Create a bar chart:

Axis: Region

Values: Sales or Profit

In Data colors, click the fx (function) icon.

Set:

Format by: Rules

Based on field: Profit

Rules example:

If Profit >= 50000 → Green

If Profit < 50000 → Red

Apply and close.

🎨 Optional Enhancement: Create a Custom Measure

You can define a custom category and use it for formatting:

DAX

```
Profit Category =
SWITCH(
    TRUE(),
    Sales[Profit] >= 50000, "High",
    Sales[Profit] >= 25000, "Medium",
```

"Low"

)

Use this field for coloring with specific color mappings:

High → Green

Medium → Orange

Low → Red

9. Publish the dashboard to Power BI Service.

☑ Step-by-Step: Publish to Power BI Service

1. Save Your Report

Make sure your report is saved:

File → Save As → YourDashboard.pbix

2. Sign In to Power BI

If you're not signed in:

Click Sign In (top right)

Enter your Power BI (Microsoft 365) credentials

3. Click Publish

Go to Home → Publish

Choose your destination workspace (e.g., My Workspace or a shared workspace)

Click Select

☑ You'll see a message like:

Success! Your report was published to Power BI.

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

📤 Step-by-Step: Share a Report

Go to Power BI Service

👉 Open https://app.powerbi.com

👉 Log in with your Microsoft account

Open Your Report

Navigate to Workspaces > My Workspace (or the workspace you used)

Click the report (e.g., Sales Dashboard)

Click the “Share” Button

Located at the top right of the report view

Opens the “Share report” panel

Enter Your Colleague’s Email

Enter their Microsoft 365 email address (e.g., colleague@example.com)

(Optional) Add a message:

"Hi! Here’s the updated sales dashboard."

Choose Permissions

☑ Allow recipient to share this report

❌ Do not allow recipients to build content with the data (optional)

Click “Send”

Power BI sends them an email with a link to the report

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

Create Sales Growth % comparing current period sales vs. previous period.

� Step-by-Step: Create Sales Growth % Using Quick Measures

Step 1: Select a Visual or Field

Click on your Sales field in the Fields pane.

Step 2: Add a Quick Measure

Right-click on the Sales field

→ Select New Quick Measure

In the Quick Measures window:

Calculation: Choose "Percentage difference from previous value"

Base value: Select your Sales field

Time dimension: Select your Date field

(Ensure your Date field is properly marked as a Date Table in the model. If not, do that via Modeling → Mark as Date Table)

Click OK

☑ Power BI automatically creates a new measure called something like:

DAX

Sales Growth % =

VAR __PREVIOUS_VALUE =

CALCULATE(SUM('Sales'[SalesAmount]), DATEADD('Sales'[Date], -1, MONTH))

RETURN

DIVIDE(SUM('Sales'[SalesAmount]) - __PREVIOUS_VALUE, __PREVIOUS_VALUE)

🎯 Even though it's technically DAX behind the scenes, you didn't write it manually — so it counts as no-code / Quick Measure.

📈 Use in Visuals

Add the Sales Growth % field to:

Line charts to show trend

Table or matrix to show by region, date, etc.

Conditional formatting (e.g., red if negative growth)

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

☑ Step-by-Step: Remove Unused Columns (Power BI Desktop)

Step 1: Open Power Query Editor

Go to Home → Transform data

→ Opens Power Query Editor

🧹 Step 2: Identify and Remove Unused Columns

Look at each table in the Queries pane.

Ask: Is this column used in visuals, measures, relationships, filters, or slicers?

To remove:

Right-click the column name → Remove

or

Select multiple columns using Ctrl + Click

→ Right-click → Remove Columns

☑ Tip: You can use "Choose Columns" (Home tab) to select only those you want to keep.

⚠️ Be careful not to remove:

Columns used in relationships

Columns used in calculated columns or measures

Columns used in filters, slicers, or visuals

🎯 Step 3: Apply Changes

Click Close & Apply to update your data model.

🚀 Additional Dataset Optimization Tips

Action	Benefit
Remove unused rows (filters)	Smaller data size
Disable auto date/time	Reduces model size
Use data types wisely Dates,	integers > text efficiency
Avoid calculated columns if possible	Use measures instead
Aggregate in Power Query if possible	Less data → faster refresh
Turn off loading for unused queries	Right-click query → Disable load

🧠 Optional: Use Model View to Audit Usage

Open Model view

Select a column → Right pane shows "Used in report visuals"

This helps you safely remove columns not referenced anywhere.

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

If your slicers are not affecting all visuals in your Power BI report, it's usually due to visual interaction settings, disconnected fields, or model relationships.

Here's how to troubleshoot and fix the issue:

🛠️ 1. Check Visual Interactions

🔍 Problem:

A slicer might not be set to filter a particular visual.

☑ Fix:

Select the slicer (click it once).

Go to Format → Edit Interactions (on the ribbon).

On each visual:

Ensure the slicer has a filter (funnel icon), not a none (circle with slash).

Click outside to exit interaction mode.

🛠️ 2. Check Relationships Between Tables

🔍 Problem:

The slicer's field is from a table not related to the table used in the visuals.

☑️ Fix:

Go to Model view.

Look for a relationship (line) between the slicer's table and the visual's table.

If no relationship exists:

Drag the key field from one table to the matching field in the other.

Make sure the relationship is active and cardinality is appropriate (e.g., Many-to-One).

🛠️ 3. Slicer Field Is Not Used in the Visual's Dataset

🔍 Problem:

You're slicing on a field (e.g., Region) from a lookup table, but the visual uses another unrelated table.

☑️ Fix:

Use a field from the same table or a related lookup table with a proper relationship.

Or switch to a common dimension table (like Date, Product, Region) shared by all visuals.

🛠️ 4. Sync Slicers Across Pages (If Applicable)

🔍 Problem:

Slicer only applies to one page.

☑️ Fix:

Select the slicer.

Go to View → Sync slicers.

In the pane:

Check the boxes for pages where it should apply.

Optionally choose to show it or keep it synced only in the background.

🛠️ 5. Check Filters and Visual-Level Filters

🔍 Problem:

Visual may have conflicting filters set.

☑️ Fix:

Click the visual → Open the Filters pane.

Check for visual-level filters that might override slicers.

Remove or adjust them as needed.

☑️ Summary Checklist

Check	Description
🎯 Visual Interactions	Ensure slicers are filtering target visuals
🔗 Relationships	Tables must be properly related
📊 Field Usage	Fields must be from related or same table
🔁 Sync Slicers	Apply across multiple pages if needed
🧹 Filters	Remove conflicting visual/page filters

14. Embed the dashboard into a PowerPoint presentation.

✅ Option 1: Live Embed (Interactive Report in PowerPoint)

� Step-by-Step:

1. Open the Report in Power BI Service

Go to https://app.powerbi.com

Navigate to your workspace

Open the report you want to embed

2. Click “Export → PowerPoint → Embed live data”

On the top menu of the report:

Click File → Export → PowerPoint → Embed live data

Or click the PowerPoint icon from the toolbar (if available)

3. Copy the Embed Link

A dialog appears:

📋 “Copy this link to paste into PowerPoint”

Copy the link

4. Open PowerPoint and Add the Dashboard

Open your PowerPoint presentation

Go to the slide where you want the dashboard

Click Insert → Power BI → Paste Link

If Power BI add-in is not installed, go to:

Insert → Get Add-ins → Search for "Power BI" → Add

Paste the copied Power BI report link into the add-in

☑ Now your report is embedded live and fully interactive inside PowerPoint!

📎 Option 2: Static Export (Snapshots of Dashboard)

If you don't need interactivity, you can:

In Power BI Service:

Click File → Export → PowerPoint → Static image

Or take screenshots/snips of visuals and paste them into slides

💡 Notes

Feature	Live Embed	Static Export
Interactivity	☑ Yes	✖ No
Requires Internet	☑ Yes (live connection to Power BI)	✖ No
Auto Refresh on Slide Show	☑ Yes	✖ No (fixed image)
Requires Power BI Login	☑ Yes (for viewer)	✖ No

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

☑ Step-by-Step: Set Up Scheduled Refresh

🔄 Purpose:

Ensure your report/data automatically updates (e.g., daily at 8 AM) from the data source without manual intervention.

� 1. Publish Your Report to Power BI Service

Already done if you've followed previous steps.

� 2. Go to the Dataset Settings

Visit: https://app.powerbi.com

Navigate to the workspace where you published the report.

Find your dataset (not the report) — same name as your .pbix file.

Click the More options (...) → Settings

� 3. Configure Data Source Credentials

In the Dataset settings pane:

Under Data source credentials → Click Edit credentials

Choose:

Authentication method: (e.g., OAuth2, Windows, Basic, etc.)

Privacy level: (usually "Organizational")

Click Sign In or Apply

🔐 You must successfully authenticate before refresh will work.

⏰ 4. Enable Scheduled Refresh

Scroll to the Scheduled refresh section:

Toggle Keep data updated to On

Set the frequency:

Daily / Weekly

Choose time slots (e.g., 8:00 AM)

(Optional) Add multiple refresh times for better sync

Set time zone (e.g., UTC+3 for Moscow, UTC-5 for New York)

📬 Enable email notifications if the refresh fails (optional but recommended)

💾 5. Save Settings

Click Apply at the bottom of the page.

☑ You're done — Power BI will now automatically refresh your dataset on the schedule you defined.

⚠️ Notes & Requirements

Feature	Requirement or Info
Data source (Excel/CSV)	Must be on OneDrive, SharePoint, or a Gateway
SQL Server / on-prem data	Requires a Data Gateway installed and configured
Cloud sources (like Azure, SharePoint Online, etc.)	Do not need gateway

Power BI Pro required?	Yes (or Premium workspace for free users)