Lesson 6 - Homework

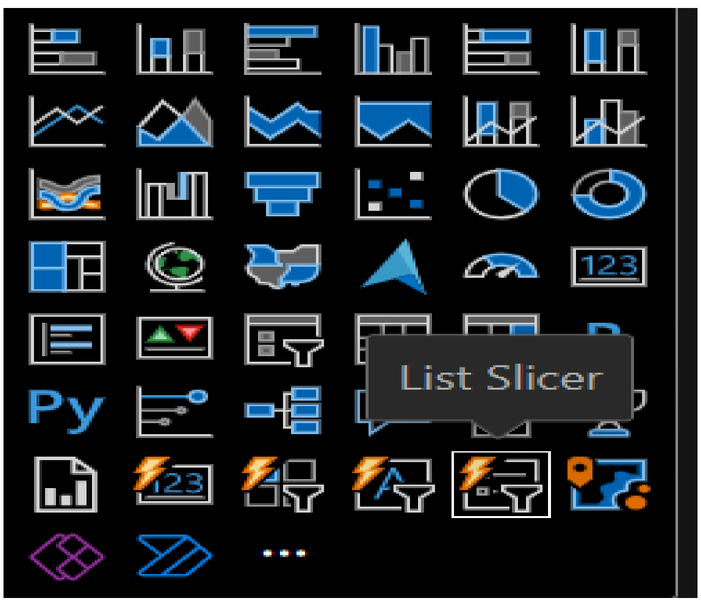
Question 1: Name three types of visuals you can create in Power BI.

1. Bar Charts - Great for comparing things, like sales between different stores.
2. Line Charts - Perfect for showing trends over time, like monthly website visits.
3. Pie Charts - Useful for showing parts of a whole, like a budget breakdown.

Question 2: How do you add a slicer to a report?

1. Go to the Visualizations pane on the right.
2. Click on the Slicer icon (it looks like a small filter).
3. In the Fields pane, click on the field you want to filter by (e.g., "Region," "Year").

A slicer will pop onto your report page, and you can drag it wherever you want.



Question 3: What is the difference between a bar chart and a column chart?

A Bar Chart has horizontal bars.
A Column Chart has vertical bars.

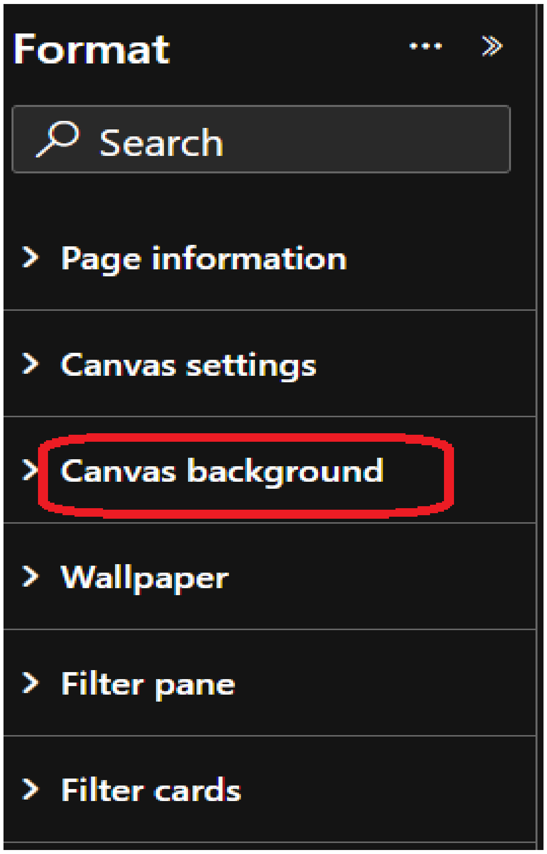
That's it! They both do the same thing: compare values across different categories.
When to use which?

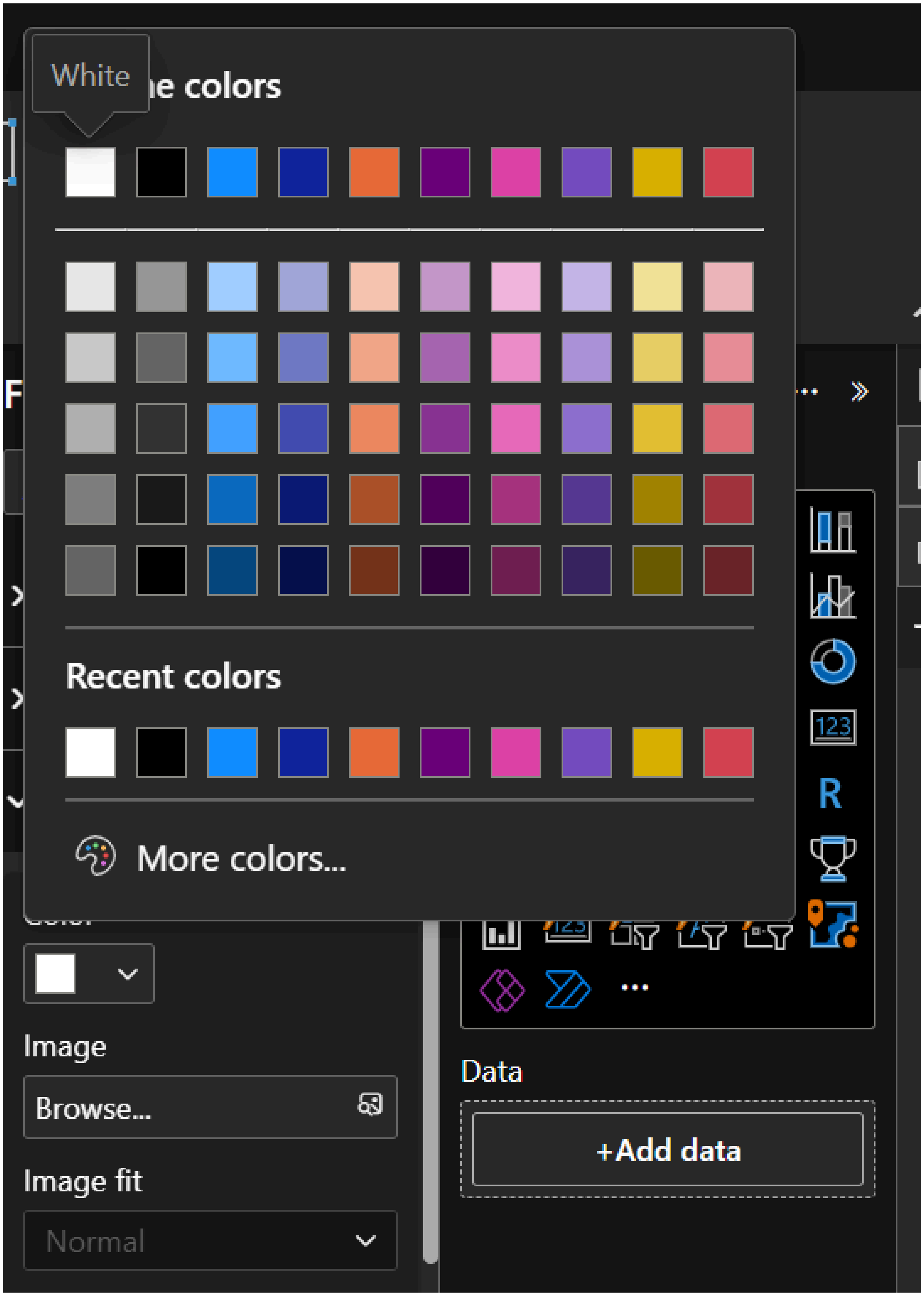
Use a Column Chart for comparing a few categories (like monthly sales) or showing trends over time.

Use a Bar Chart when you have longer category names or many categories, as the horizontal layout is easier to read.

Question 4: How do you change the color of a visual background?

1. Select the visual on your report canvas.
2. Open the Format pane (the paint roller icon).
3. Expand the General section, then look for Background.
4. Toggle the background On.
5. Pick your color using the color picker.



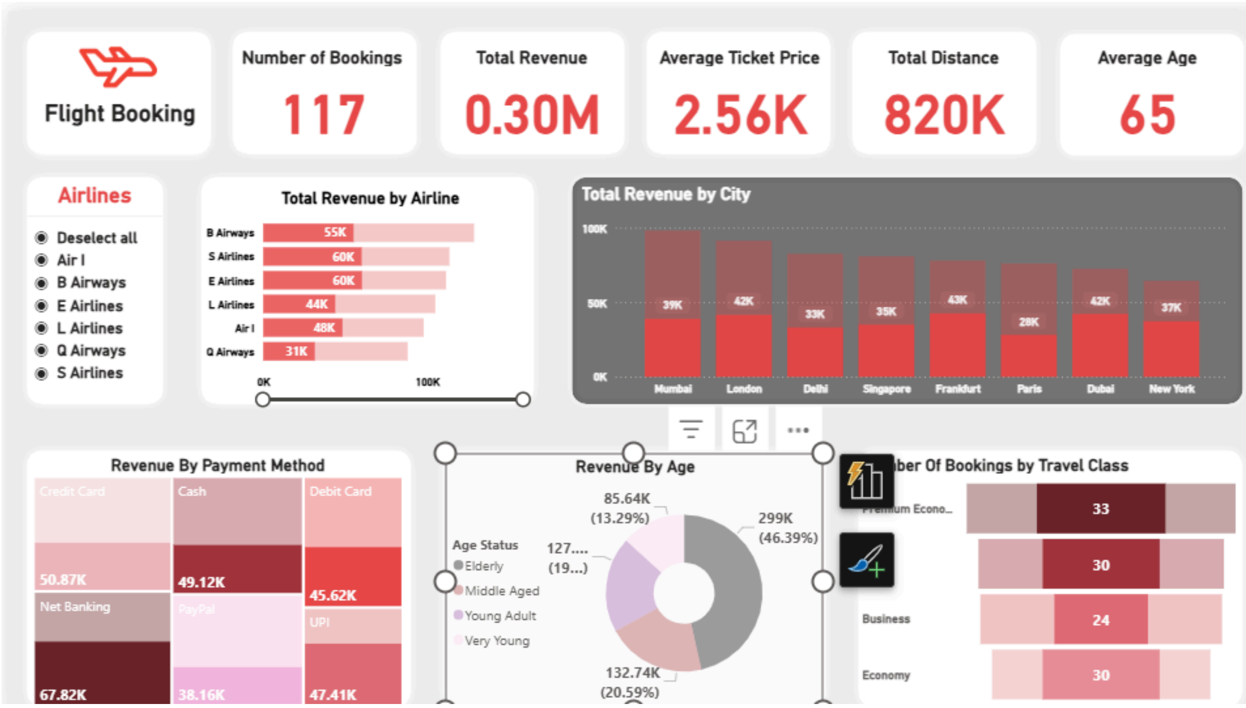


Question 5: What does "drill-down" mean in a visual?

You start with a bar chart showing total yearly sales.

- You click on the bar for "2023".
- The chart drills down to show you the sales for each quarter in 2023 (Q1, Q2, Q3, Q4).
- You could then click on "Q1" to see the sales for each month in that quarter.
- So, you "drill" from Year -> Quarter -> Month.

You usually need to set up a hierarchy (like Year > Quarter > Month) in your data for this to work automatically.



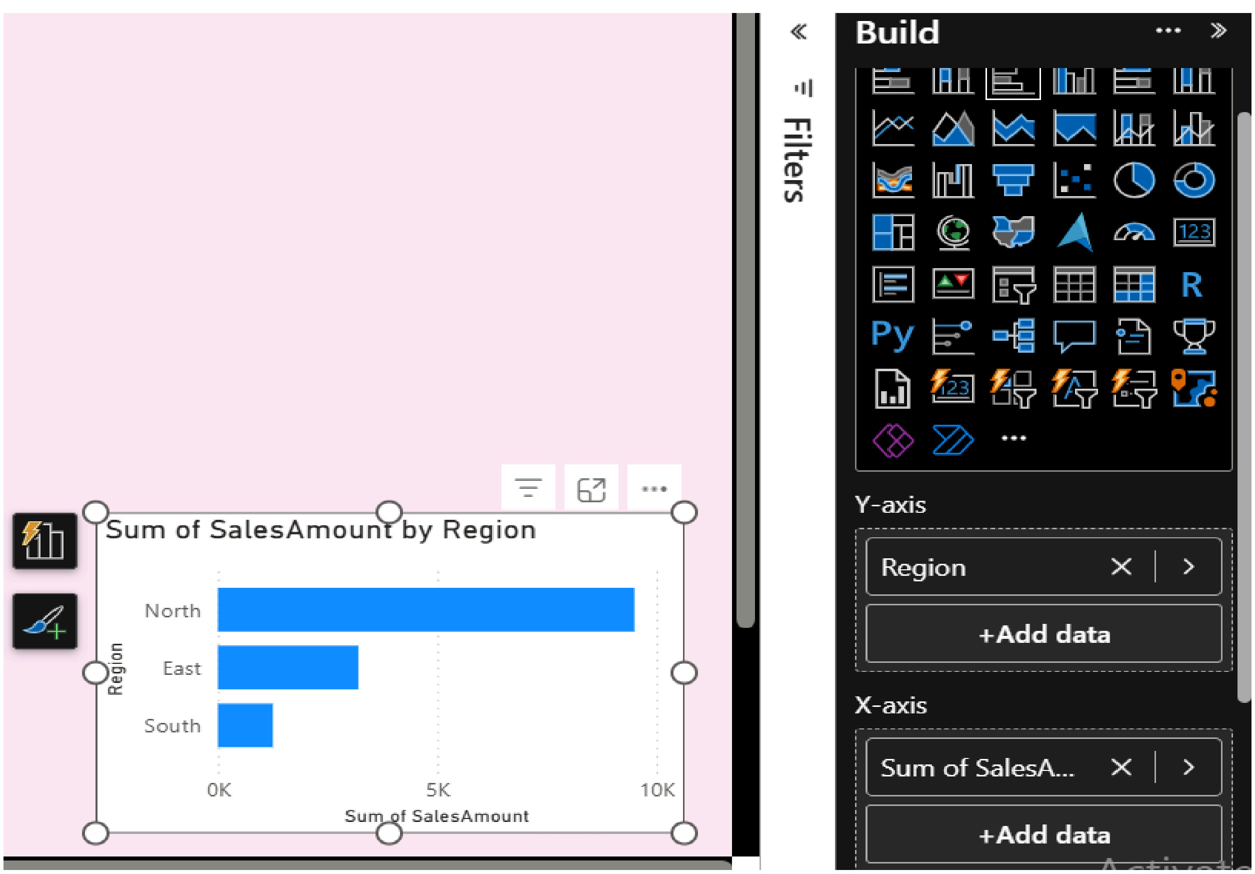
Question 6: Create a bar chart showing SalesAmount by Region.

Get Your Data: Make sure your data is loaded into Power BI and has both a Region field and a SalesAmount field.

Create the Chart: In the Visualizations pane, click the "Stacked bar chart" icon.

Drag your Region field and drop it into the Y-axis area.

Drag your SalesAmount field and drop it into the X-axis area.

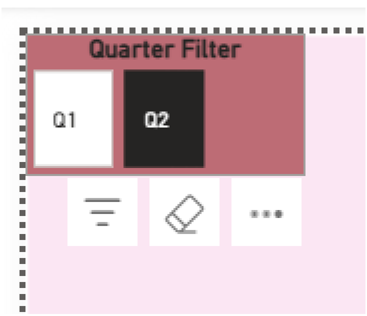


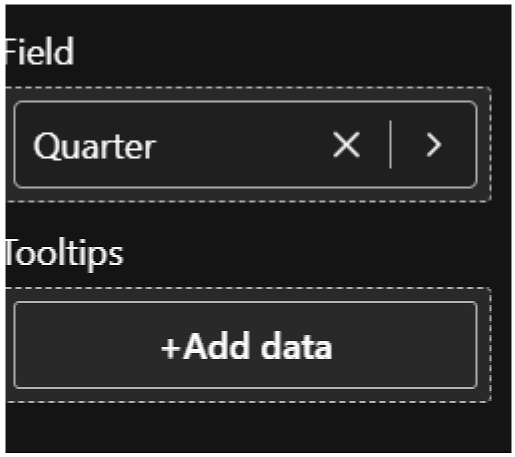
Question 7: Add a slicer for Quarter to filter all visuals on the page.

Add the Slicer: Go to the Visualizations pane and click the Slicer icon. A blank slicer will appear on your report page.

Add the Quarter Field: In the Fields pane, find and check your Quarter field (e.g., "Quarter", "Fiscal Quarter"). It will automatically be added to the slicer.

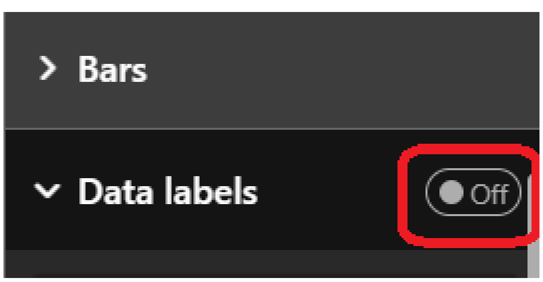
Position the Slicer: Drag the slicer to a convenient spot on the page, like the top or side.

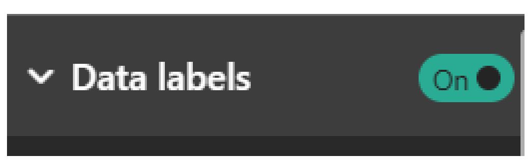




Question 8: Format the bar chart to show data labels.

- Select your bar chart on the report page.
- Open the Format pane (click the paint roller icon).
- Scroll down and find the Data labels section.
- Toggle the switch from Off to On.

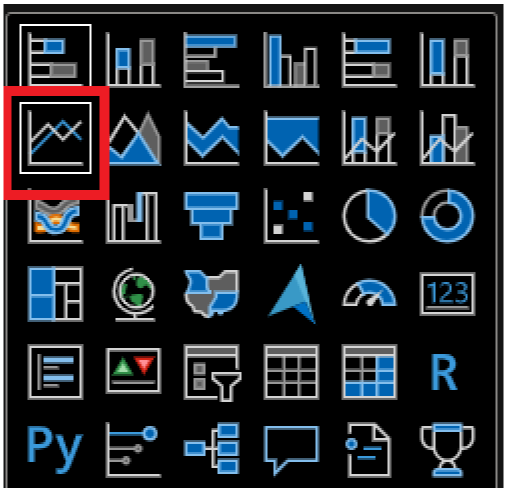


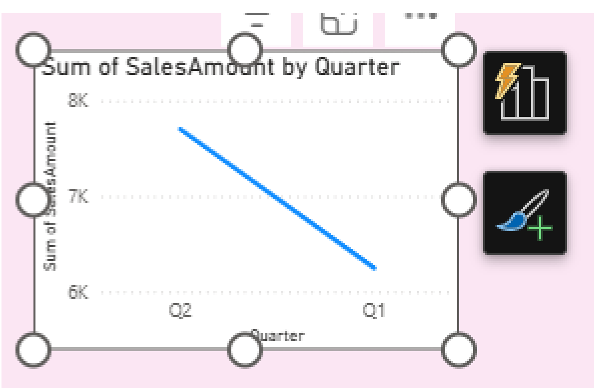


Question 9: Use a line chart to show SalesAmount trends over Quarter.

1. Drag your Quarter field and drop it into the X-axis area.

2. Drag your SalesAmount field and drop it into the Y-axis area.



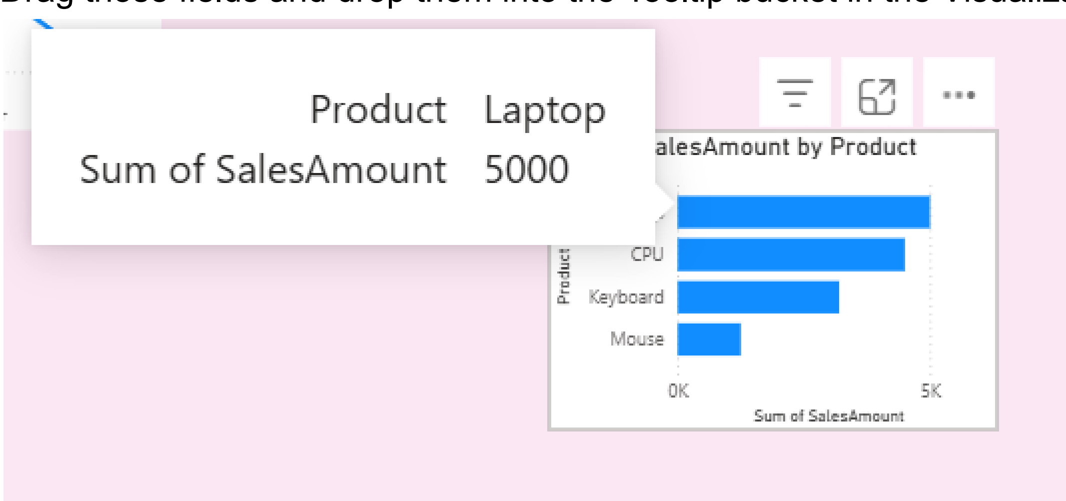


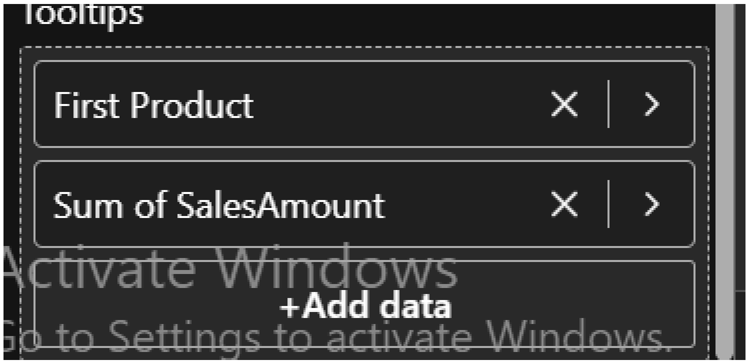
Question 10: Add a tooltip to display Product details when hovering over bars.

Select your bar chart.

In the Fields pane, find the fields you want to see in the tooltip (e.g., Product Name, Quantity Sold).

Drag those fields and drop them into the Tooltip bucket in the Visualizations pane.





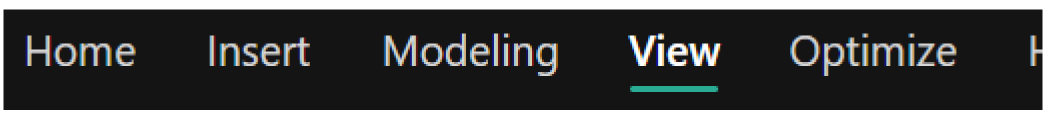
Question 11: Sync slicers across multiple report pages.

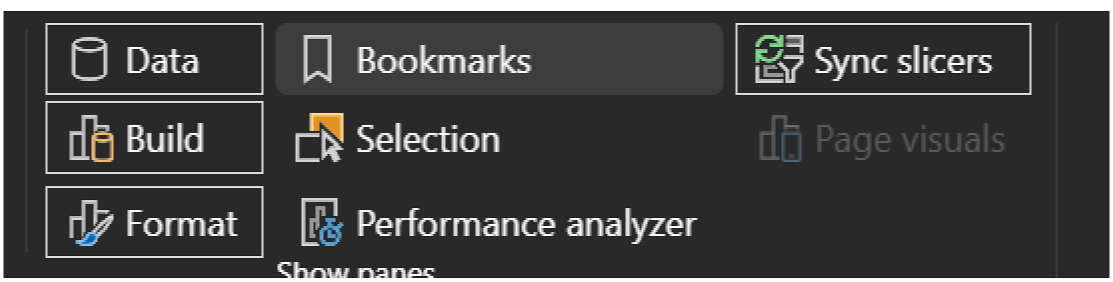
Open the Sync Slicers Pane: Go to the View tab in the top ribbon and check the box for Sync Slicers. A new pane will appear.

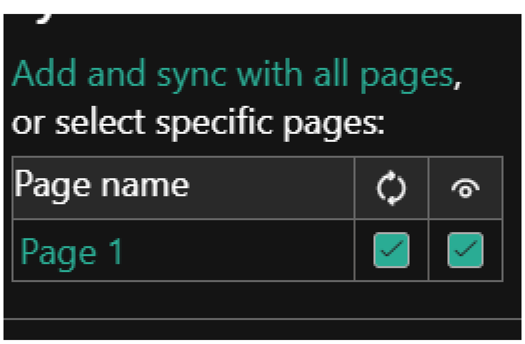
Select the Slicer: Click on the slicer you want to sync (e.g., your "Quarter" slicer).

Choose the Pages: In the Sync Slicers pane, you'll see a list of all your report pages. Check the boxes for every page where you want this slicer to apply.

Now, when you select a quarter on one page and then switch to another page you synced, the selection will stay active and filter the visuals on that page too. It's a great way to create a consistent filter across your entire report.







Question 12: Create a custom visual with dynamic measure selection (e.g., Sales vs. Profit).

Create the Parameter:

Go to the Modeling tab.

Click New Parameter > Fields.

In the dialog box, give it a name like "Select Measure".

Add the fields you want to switch between (e.g., SalesAmount, Total Profit).

Click Create.

Build the Visual:

A new slicer will appear showing "SalesAmount" and "Total Profit".

Create your bar or line chart.

Drag the created parameter field (not the original measures) into the Values area of the visual.

Now, when you select a different measure in the slicer, the chart will update automatically!

Question 13: Implement a hierarchy for Region > Product > Quarter drill-down.

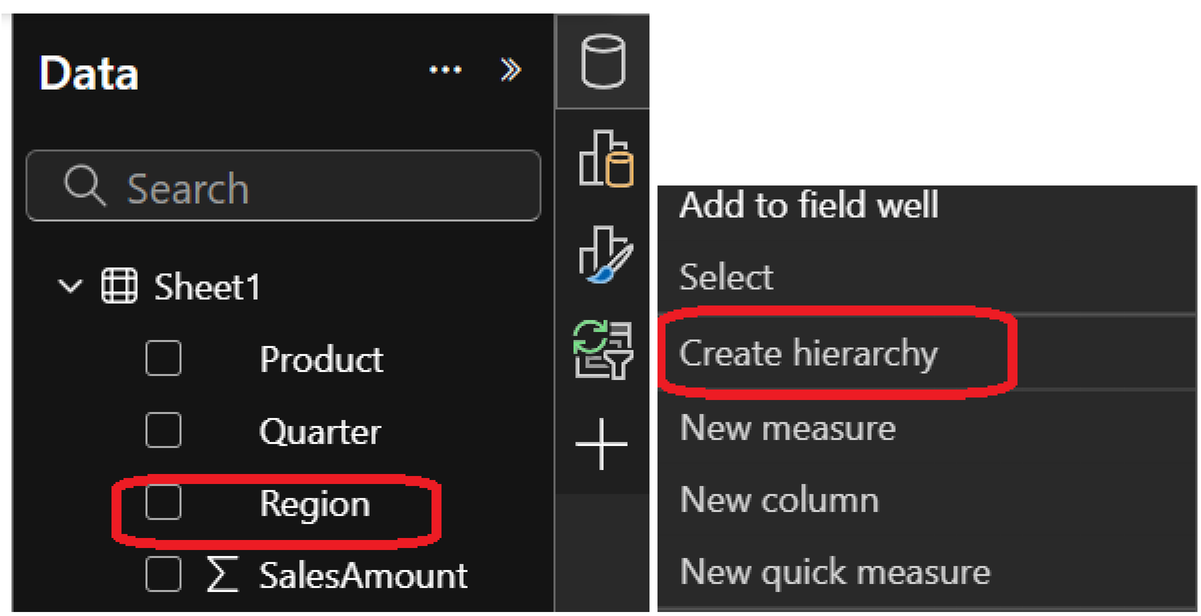
In the Data view (table icon on the left), find the table containing your fields.

Select New hierarchy. A new hierarchy item will be created.

Right-click on the Product field and select Add to hierarchy > Region Hierarchy.

Right-click on the Quarter field and select Add to hierarchy > Region Hierarchy.

1)



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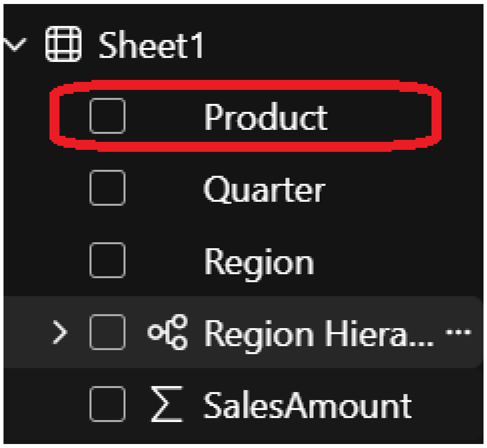
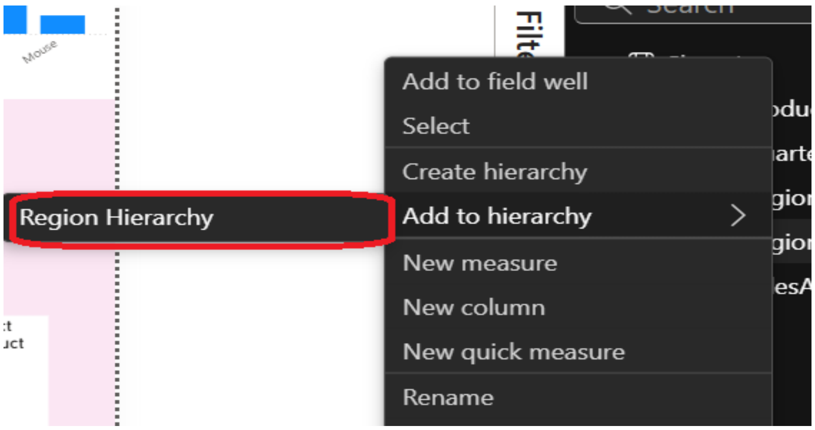
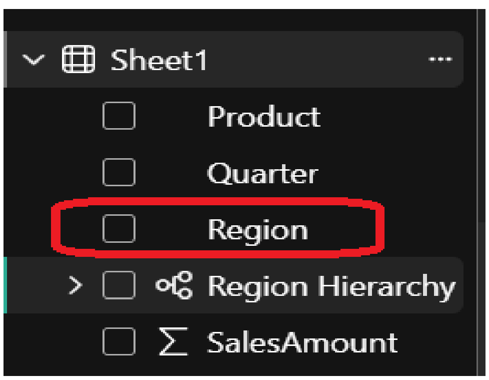

Sheet1
Product
Quarter
Region
Region Hiera...
SalesAmount


Region Hierarchy
Add to field well
Select
Create hierarchy
Add to hierarchy
New measure
New column
New quick measure
Rename

3)


Sheet1
Product
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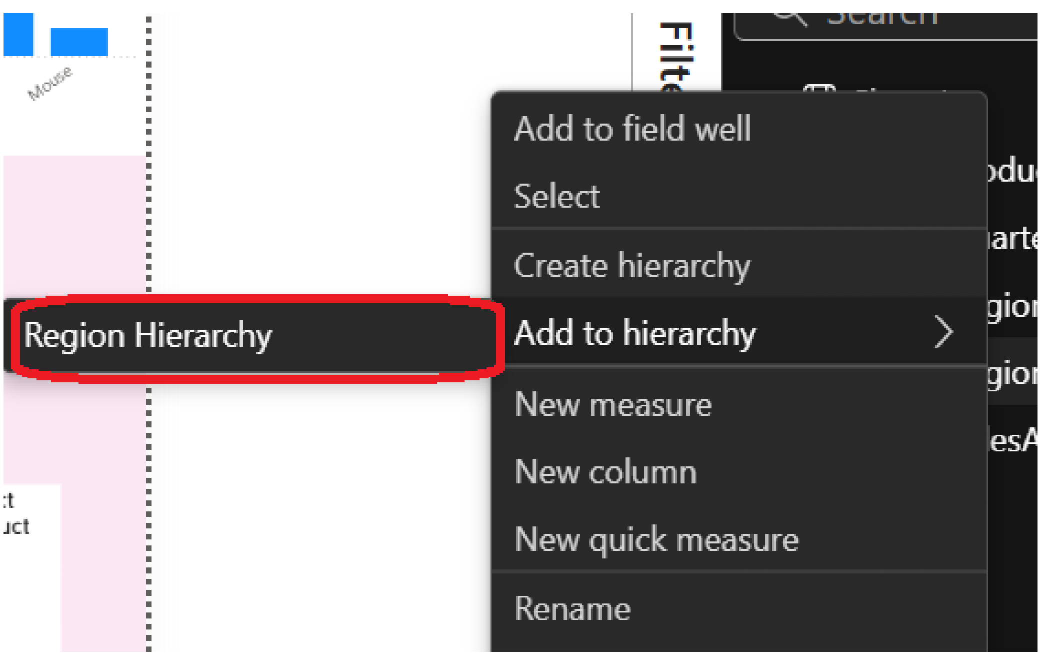
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Rename

Question 14: Use bookmarks to toggle between two visuals in the same space.

Show the Bar Chart, Hide the Line Chart:

In the Selection Pane, make the "SalesBarChart" visible and "ProfitLineChart" hidden.

Go to the View tab and click Bookmarks > Add.

Name it "Show Sales Chart".

Show the Line Chart, Hide the Bar Chart:

In the Selection Pane, make the "ProfitLineChart" visible and "SalesBarChart" hidden.

Add another bookmark and name it "Show Profit Chart".

2. Add Toggle Buttons
Go to the Insert tab and add two Buttons (e.g., "Sales" and "Profit").

Select the "Sales" button, go to the Format pane, and under Action, set its Type to "Bookmark" and select "Show Sales Chart".

Do the same for the "Profit" button, linking it to the "Show Profit Chart" bookmark.

Now, when you click the buttons, the visuals will seamlessly toggle in the same space! This keeps your report clean and interactive.

Question 15: Optimize a slow-rendering report with 10+ visuals.

1. Fix the Data Model (Biggest Impact)
Reduce row count: Use Power Query to filter out unnecessary historical data.

Remove unused columns: Delete columns you don't use in visuals or calculations.

Use star schema: Structure tables into fact (numbers) and dimension (descriptions) tables.

Avoid bi-directional relationships: Stick to single-direction relationships where possible.

2. Optimize DAX Calculations
Avoid complex calculated columns: Use measures instead when possible.

Replace CALCULATE with simpler functions when you can.

Use variables in complex measures to improve performance.

3. Report-Level Optimizations
Enable "Show items with no data" = Off in slicers and filters.

Reduce visual interactions: Limit cross-filtering between visuals.

Use fewer data points: Aggregate data at a higher level (monthly instead of daily).

Turn off visual animations in Options > Settings.

4. Use Aggregation Tables
Create summary tables for large datasets (e.g., pre-aggregate daily data to monthly).

Quick Wins:
Check Performance Analyzer (View tab) to see which visuals are slowest

Start with the slowest visual and apply the fixes above

Test after each change to see what helps most

The data model optimization usually gives the biggest speed improvement!