

Creating Powerful Visualizations

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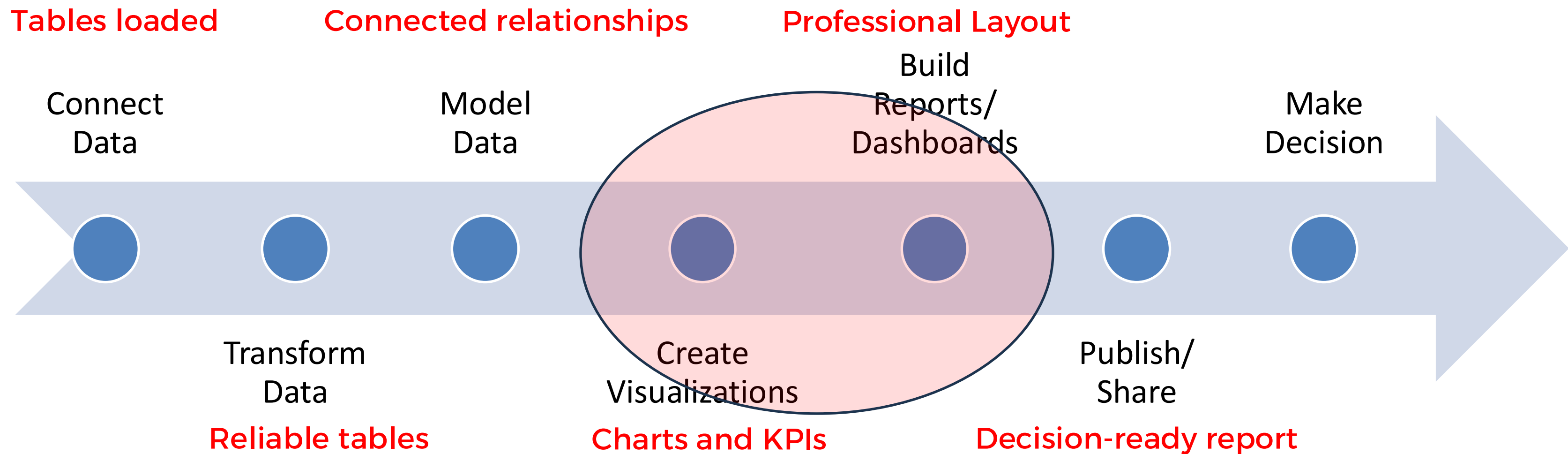
Course: From Data to Decisions using Power BI

Lecture 04



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Power BI Workflow (The Analytics Journey)



Each stage adds value — skip one and the chain breaks

**Visuals help users understand
performance faster and make better
decisions.**



Business Scenario

Management wants a Sales Performance Report showing:

- Total Revenue
- Total Profit
- Revenue by Region
- Revenue by Product Category
- Monthly Revenue Trend
- Top Customers

The goal is not only to create visuals, but to answer business questions.



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Why Visualize Data?



Makes complex data easier to understand



Helps identify patterns, trends, and outliers



Enhances decision-making



Communicate clearly



Support analytical reasoning



Inspire action and insight



Oriental
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What we will cover

1. Navigating the report view interface
2. Creating visuals
3. Formatting reports
4. Building interactive pages

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1. Navigating the Report View Interface



Power BI Report View Overview

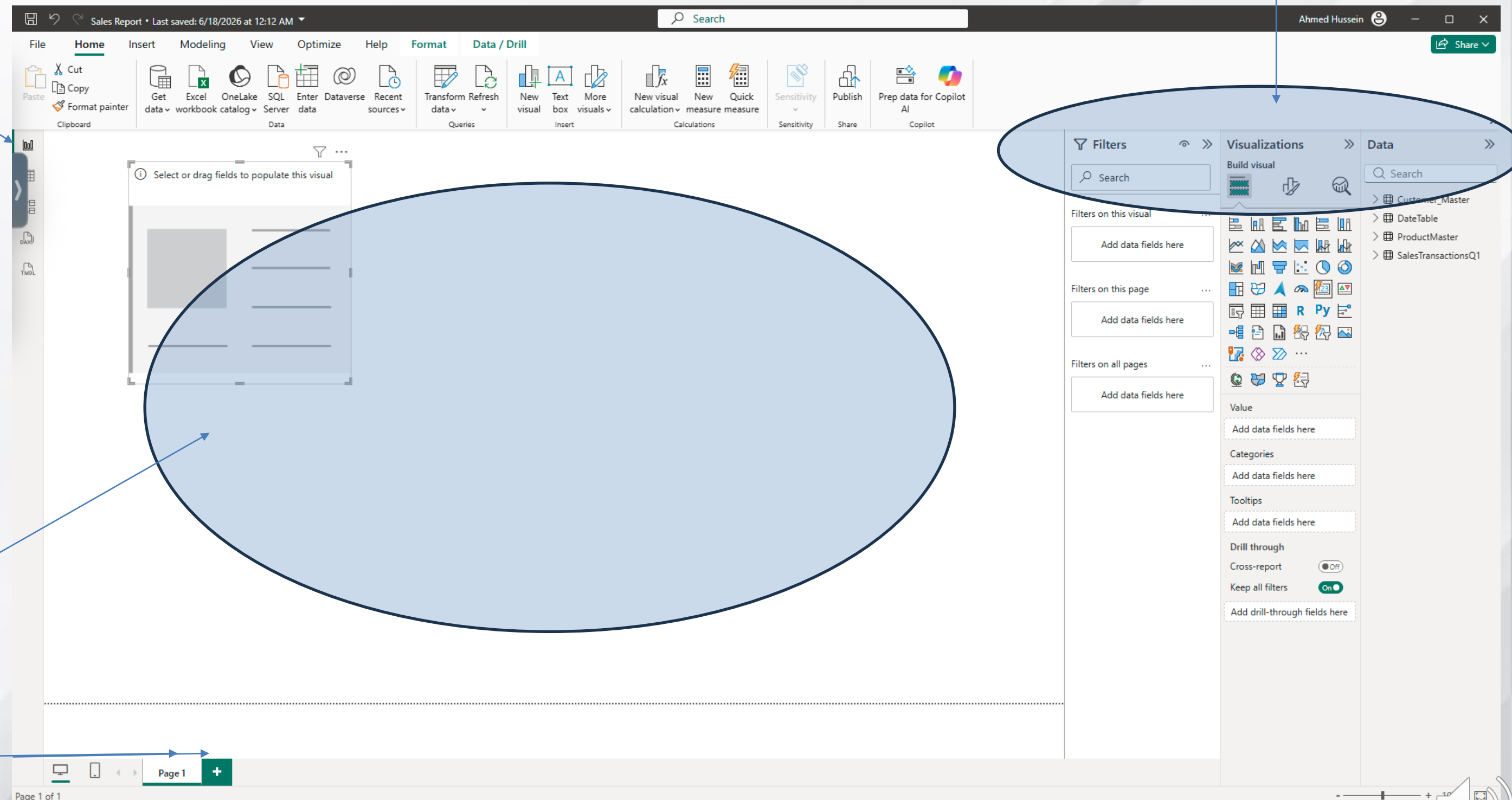
Power BI Blank Report

Filters, Visualization, Data Panels

Report View

Report Canvas

Report Page #, Add Page

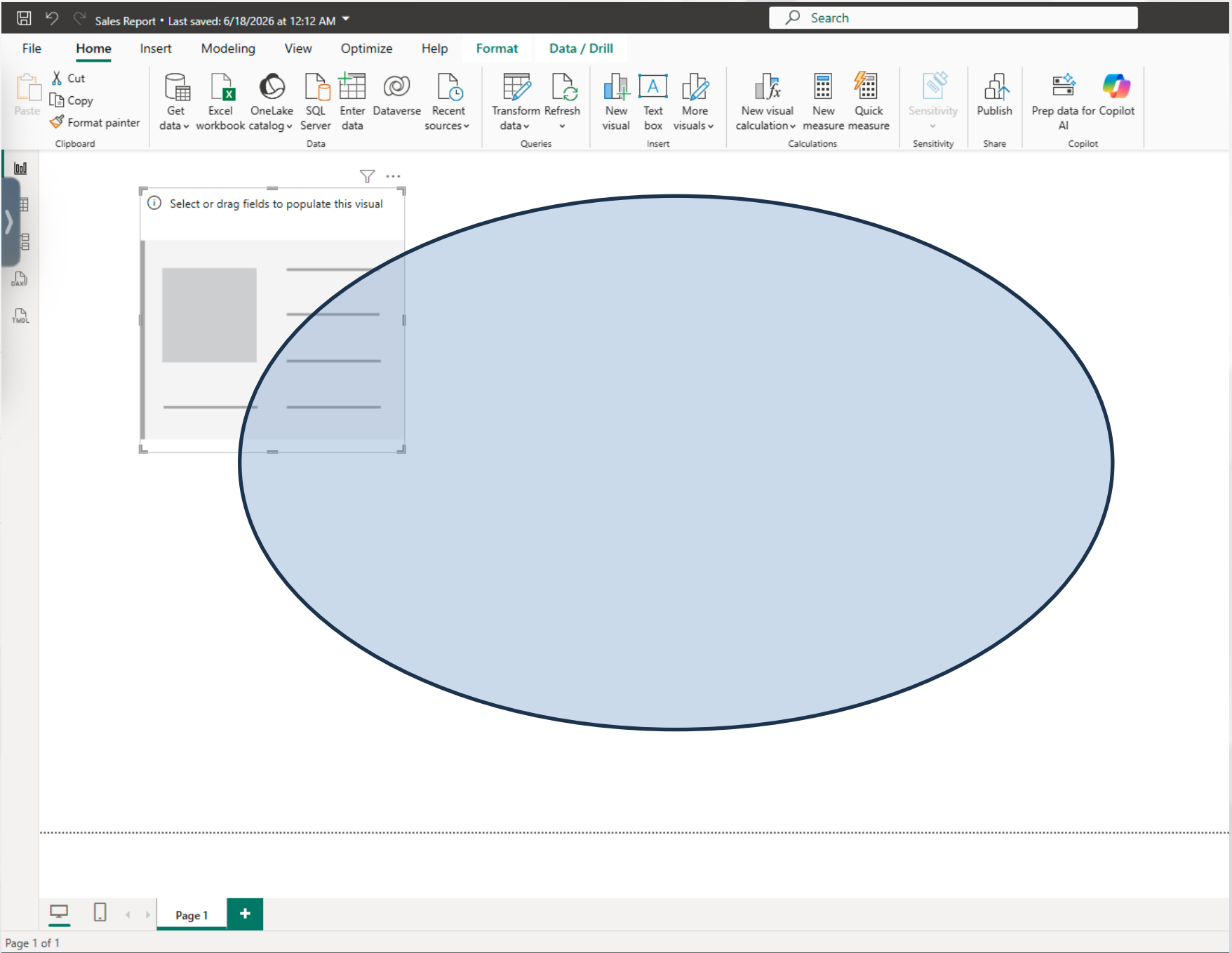


Report Canvas

The area where you build your report or dashboard.

Main Building Blocks

Feature	Purpose
Canvas	Main design area for visuals
Blank space	Allows layout planning
Visual Placement	Drag, resize, and align visuals
Page size	Controls report dimensions



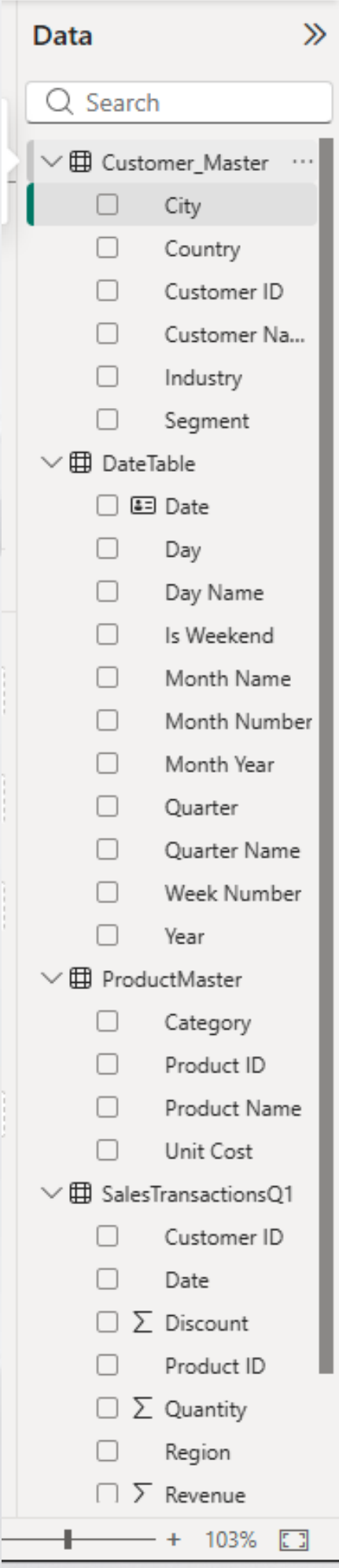
Data Pane

The Data Pane shows tables, fields, columns, and measures available for reporting.

The Data Pane is where you select fields to build visuals.

Main Building Blocks

Item	Example
Table	Sales Transaction
Column	Region
Measure	Total Revenue
Date field	Month Name



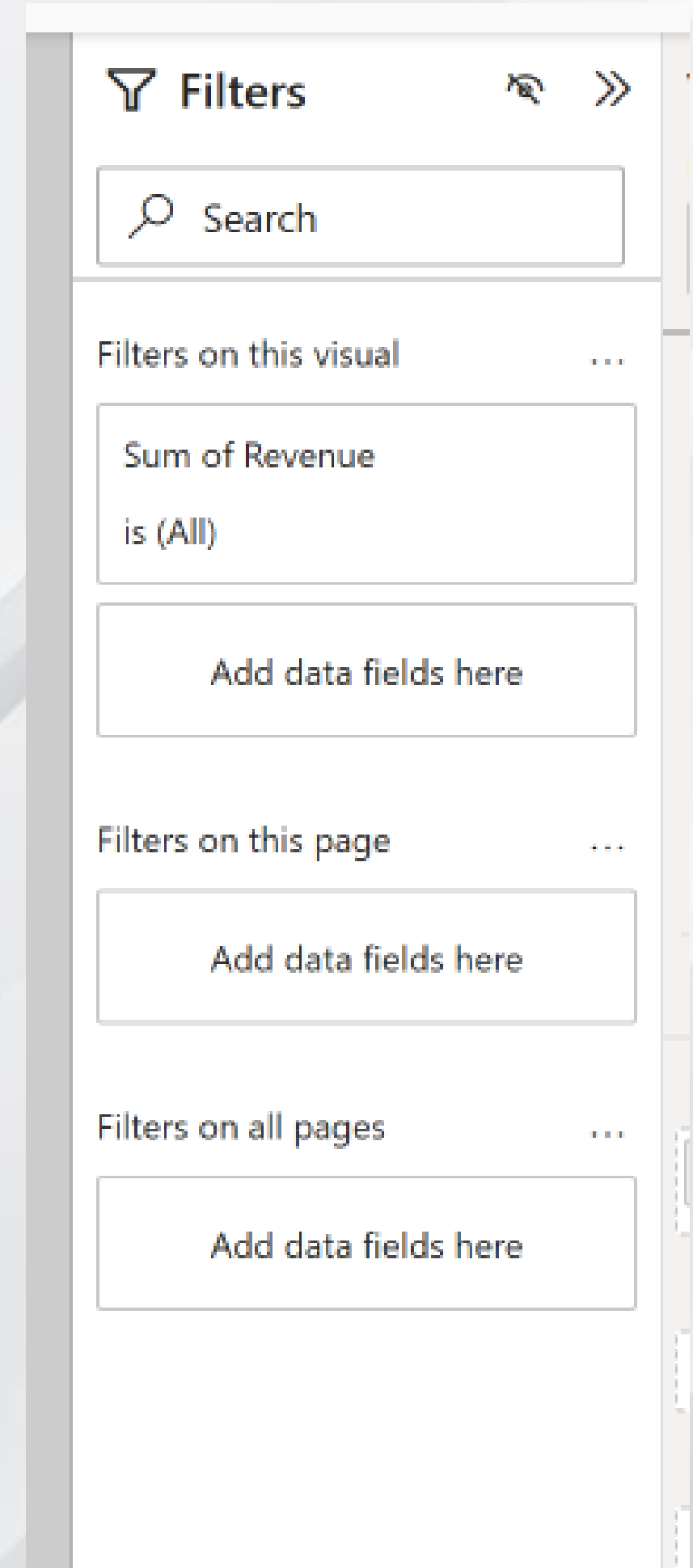
Filters Pane

The Filters Pane controls what data appears in visuals and pages.

Filters help users focus on specific data segments.

Main Building Blocks

Filter Level	Meaning
Visual filter	Affects one visual only
Page filter	Affects one report page
Report filter	Affects the whole report



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2. Creating Visuals



Visualizations Pane

The Visualizations Pane is used to select and customize visual types.
The Visualizations Pane is the toolbox for report creation.

Common Visuals

Card

Bar chart

Column chart

Line chart

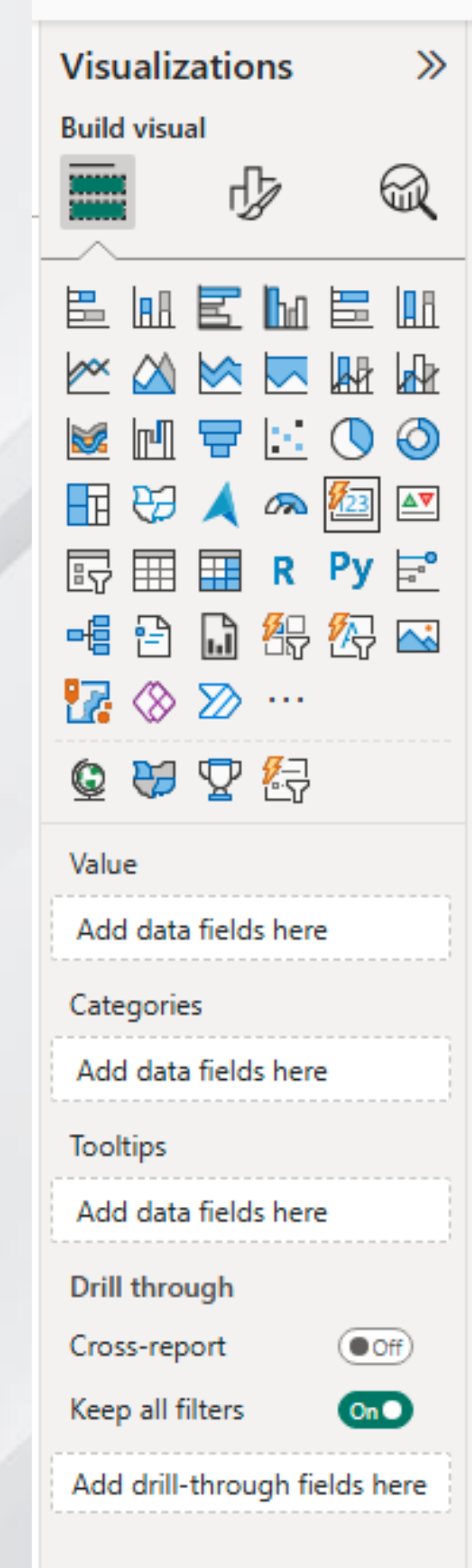
Pie / donut chart

Table

Matrix

Slicer

Map



Card Visual

A Card displays one important number.

Cards are ideal for high-level KPIs.

Common Examples

Use Case	Example
Total Revenue	\$ 2.5 M
Total Profit	\$ 650K
Total Customers	500
Profit Margin	24%



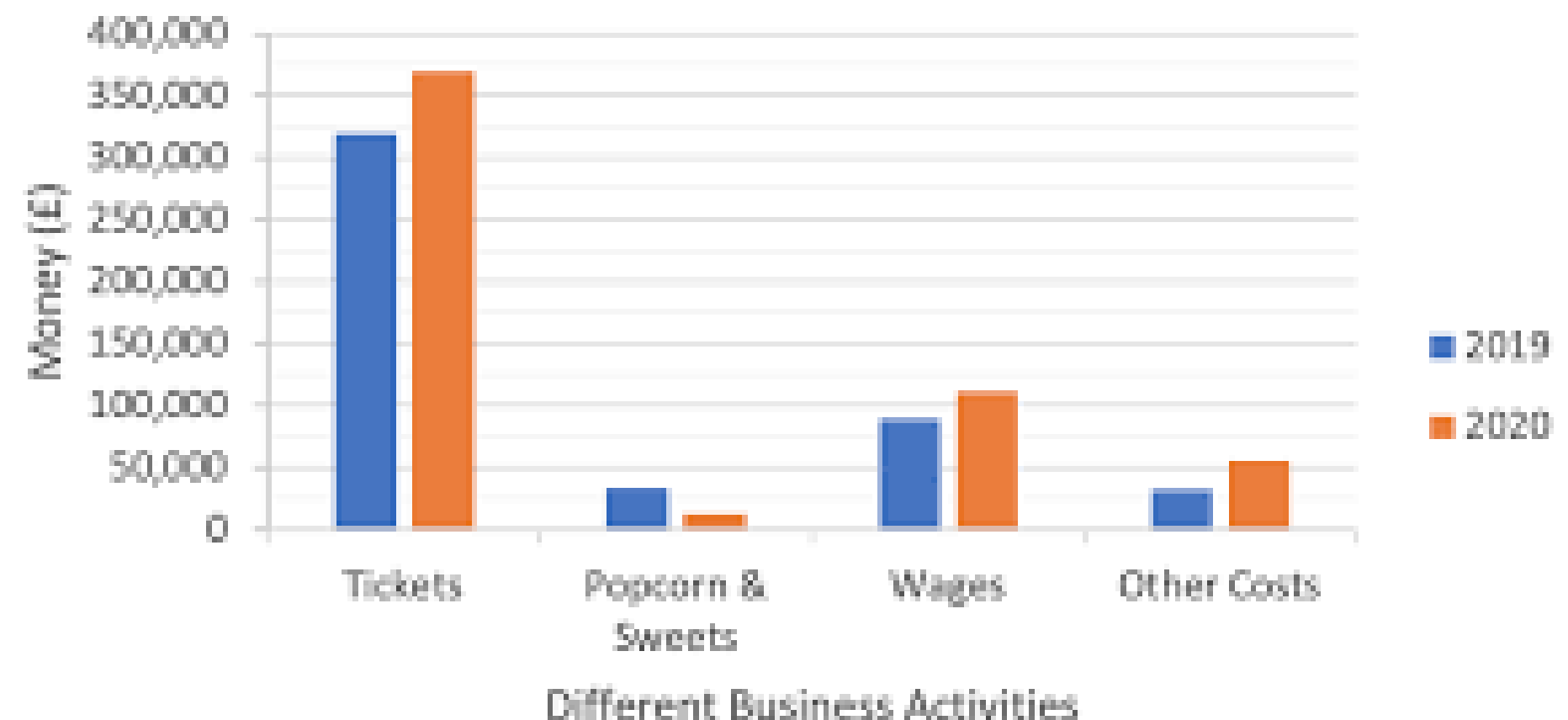
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Bar Chart – Comparing Categories

- A Bar Chart compares values across categories.
- Bar charts are excellent for comparing business performance.

Example Use Cases:

- Revenue by Region
- Profit by Product Category
- Sales by Customer Segment
- Quantity by Salesperson



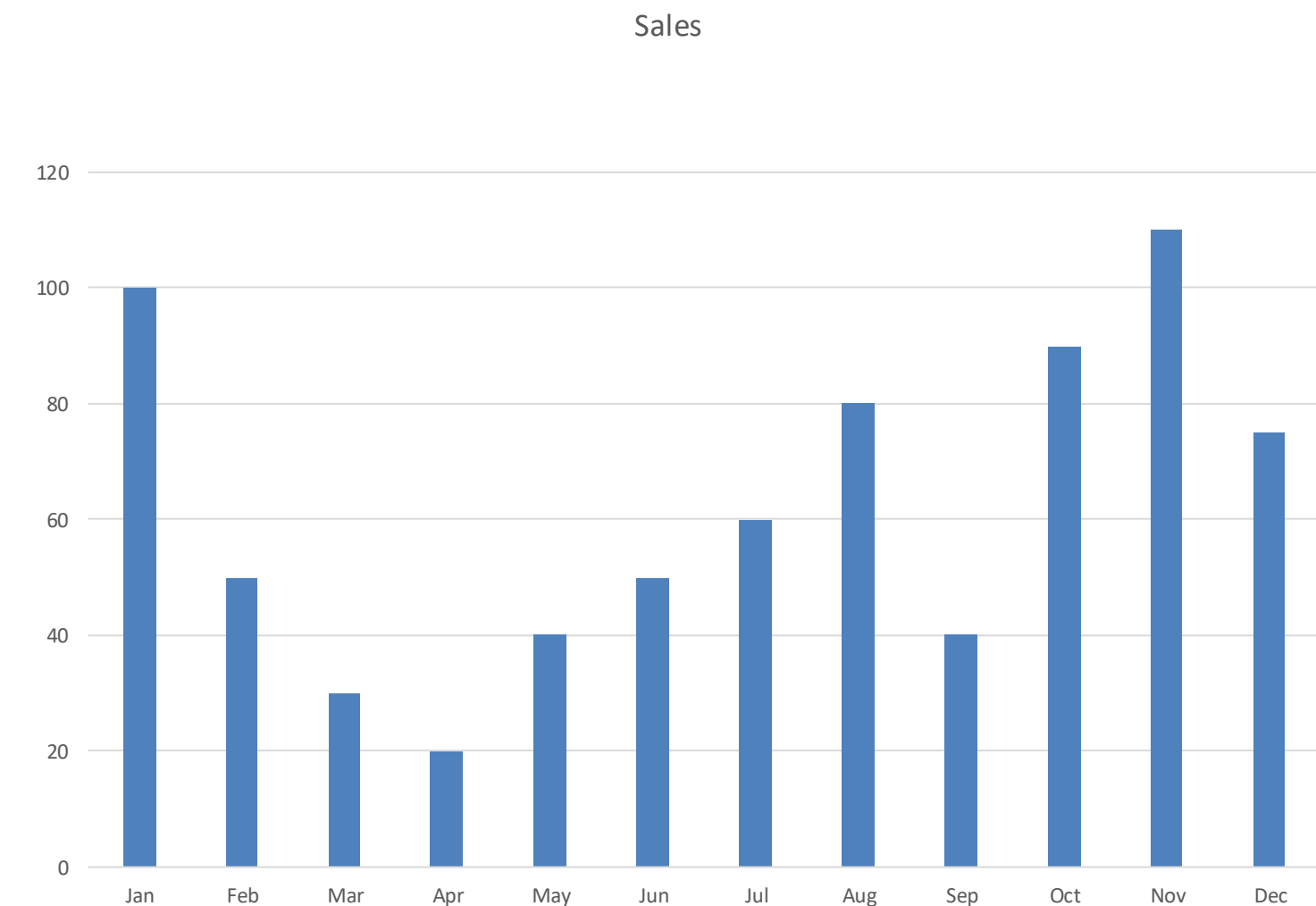
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Column Chart – Comparing Over Time

- A Column Chart compares values vertically.
- Column charts work well for time-based comparisons.

Example Use Cases:

- Sales by month
- Revenue by quarter
- Profit by year
- Orders by period



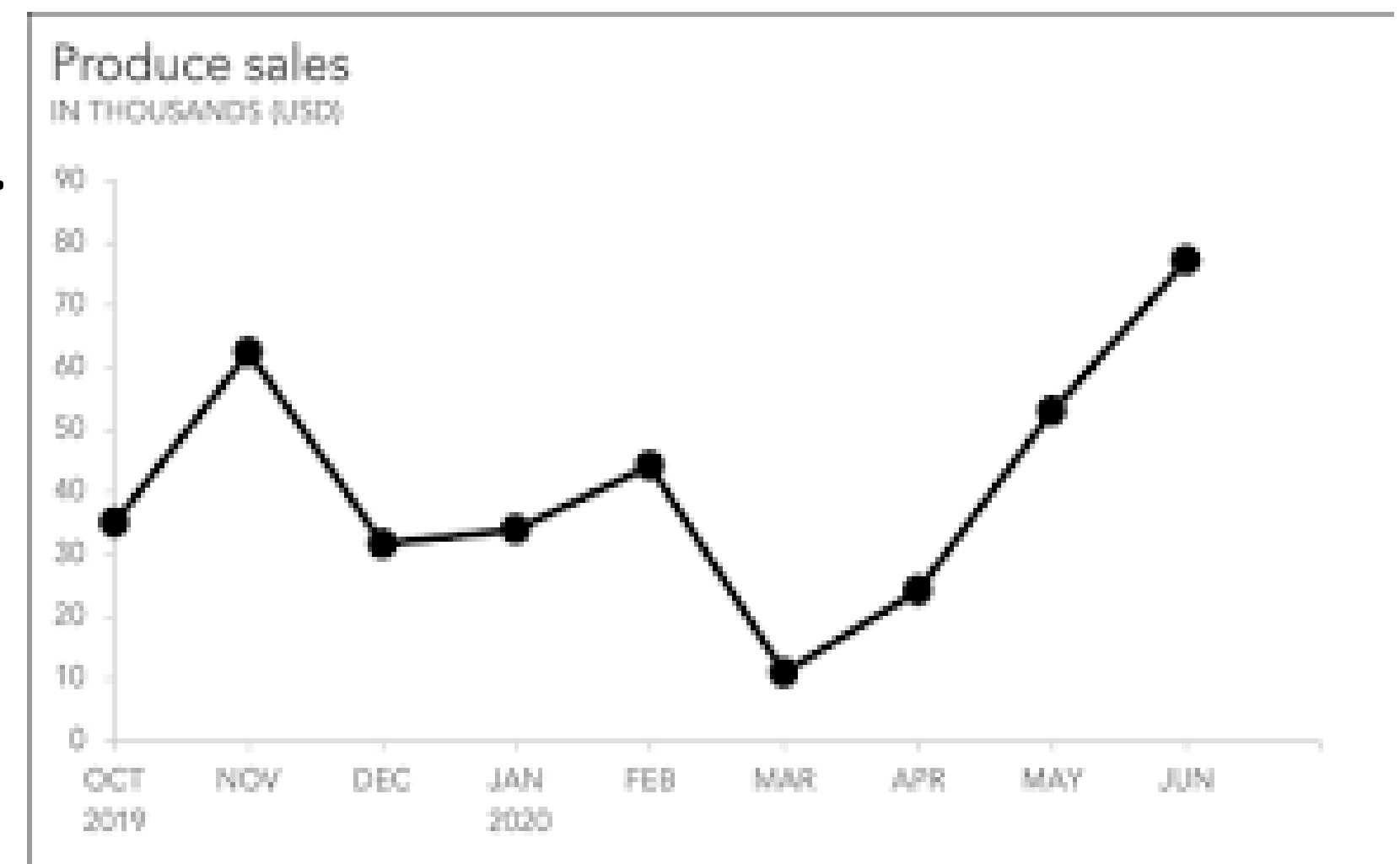
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Line Chart – Showing Trends

- A Line Chart shows trends over time
- Line charts help users see direction, movement, seasonality, and patterns.

Example Use Cases:

- Monthly revenue trend
- Customer growth
- Profit trend
- Complaint trend



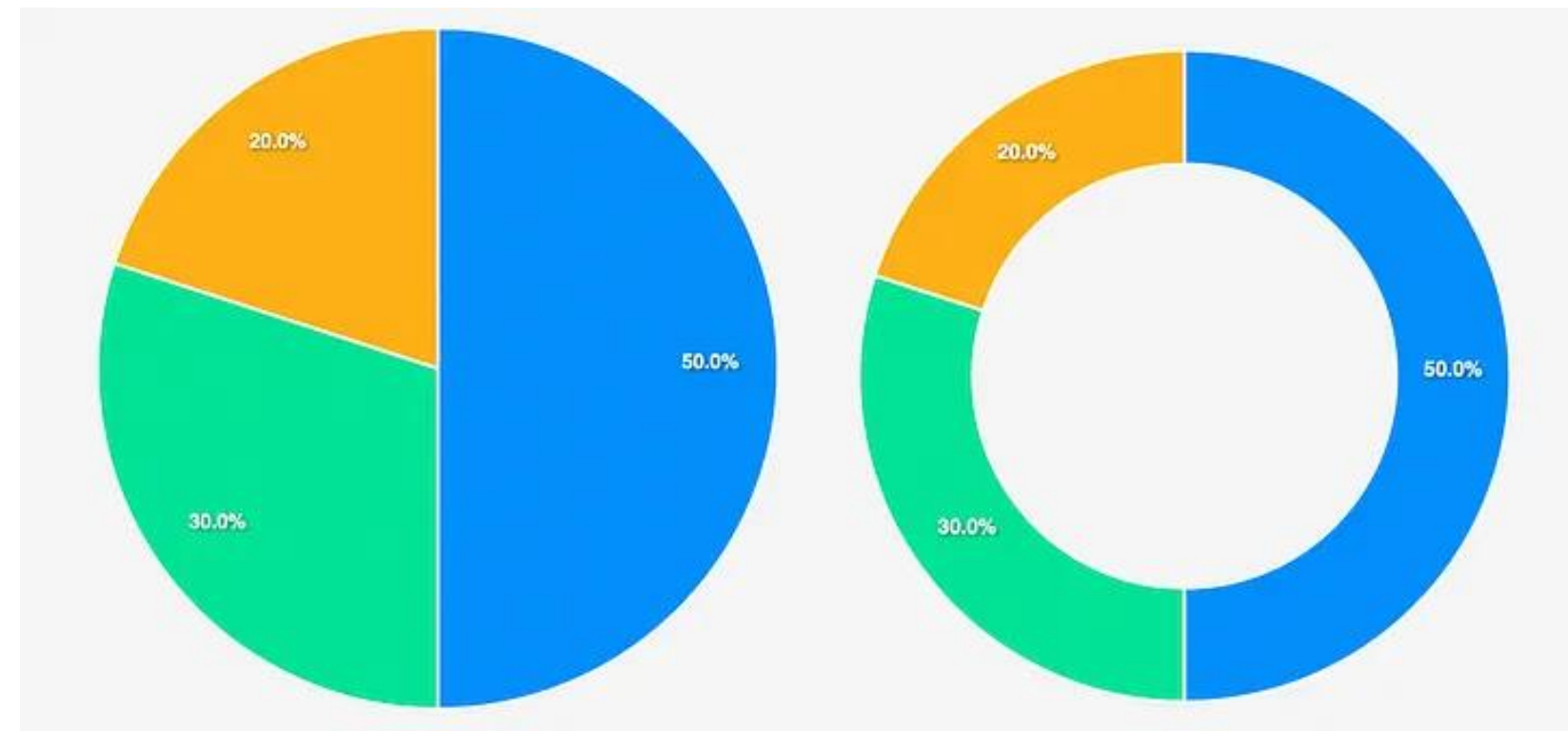
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Pie and Donut Charts

- Pie and donut charts show part-to-whole relationships.
- Effective only with few categories

Example Use Cases:

- Revenue share by category
- Customer mix by segment
- Sales contribution by region



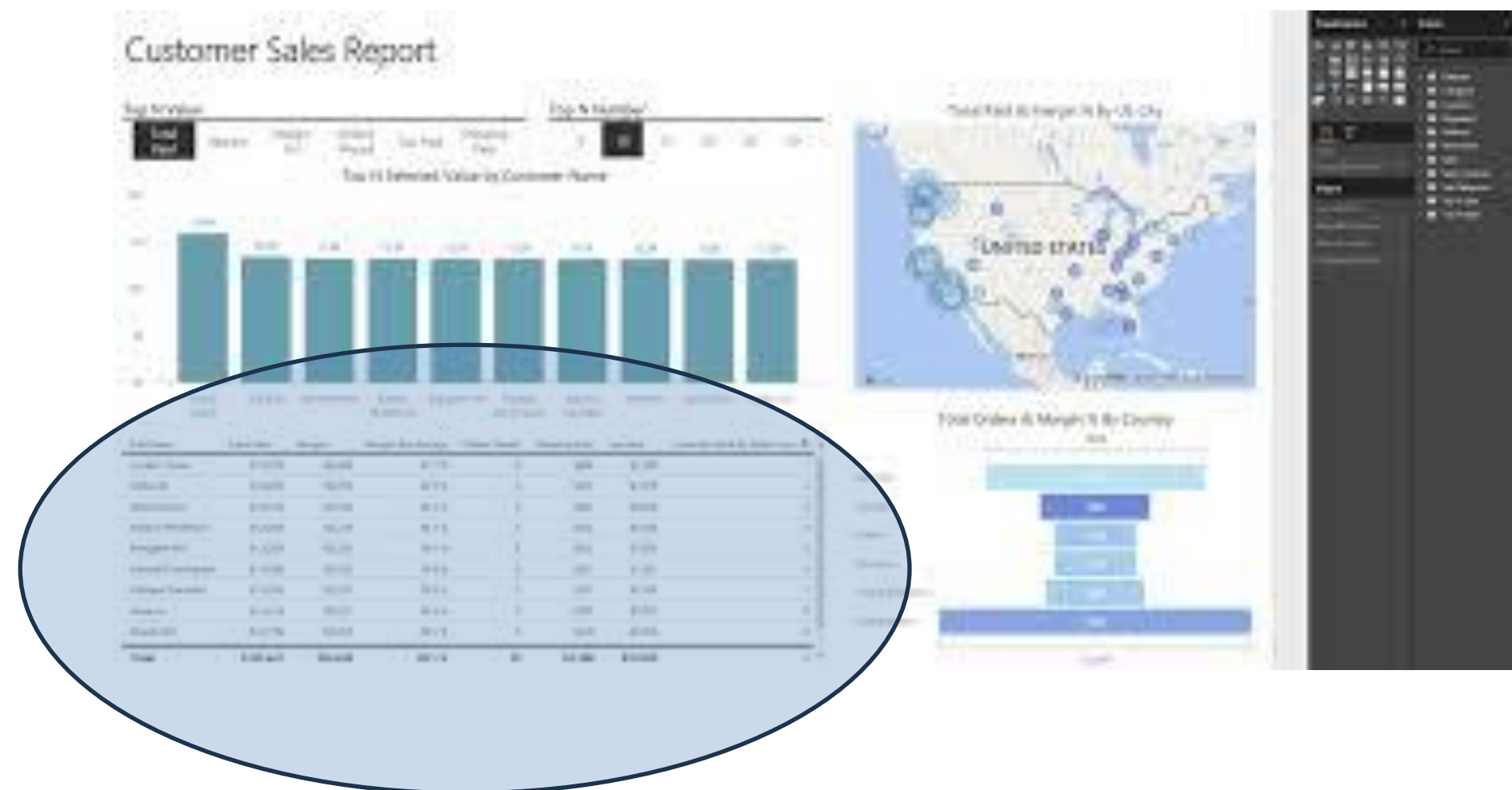
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Table visual

- Tables are useful when users need detail, not only summaries

Example Use Cases:

- Customer revenue listing
- Product sales detail
- Transaction review
- Regional performance table



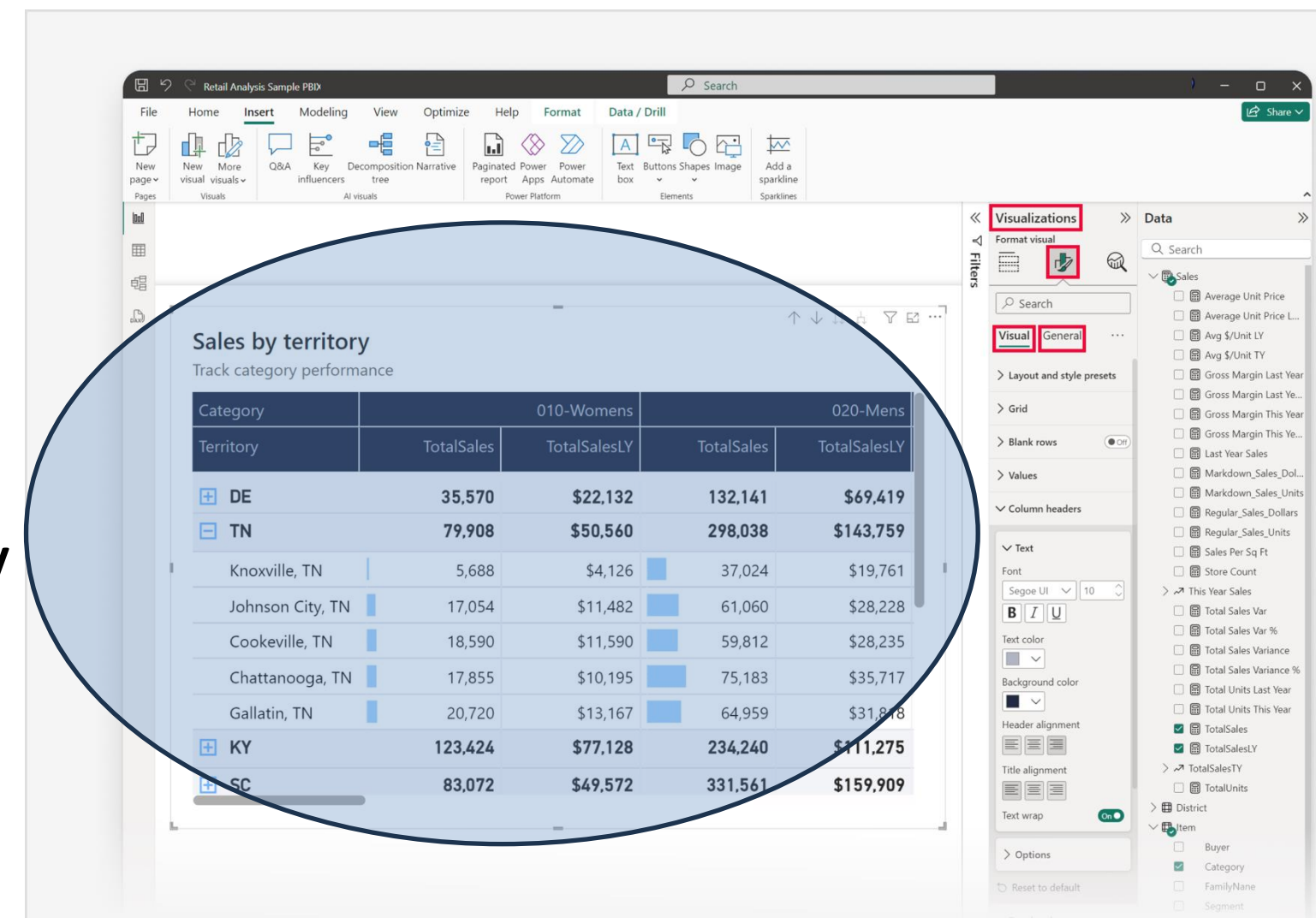
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Matrix visual

- A Matrix is similar to a pivot table.
- Matrix visuals help summarize data across rows and columns.

Example Use Cases:

- Revenue by Region and Product Category
- Sales by Month and Customer Segment
- Profit by Year and Quarter



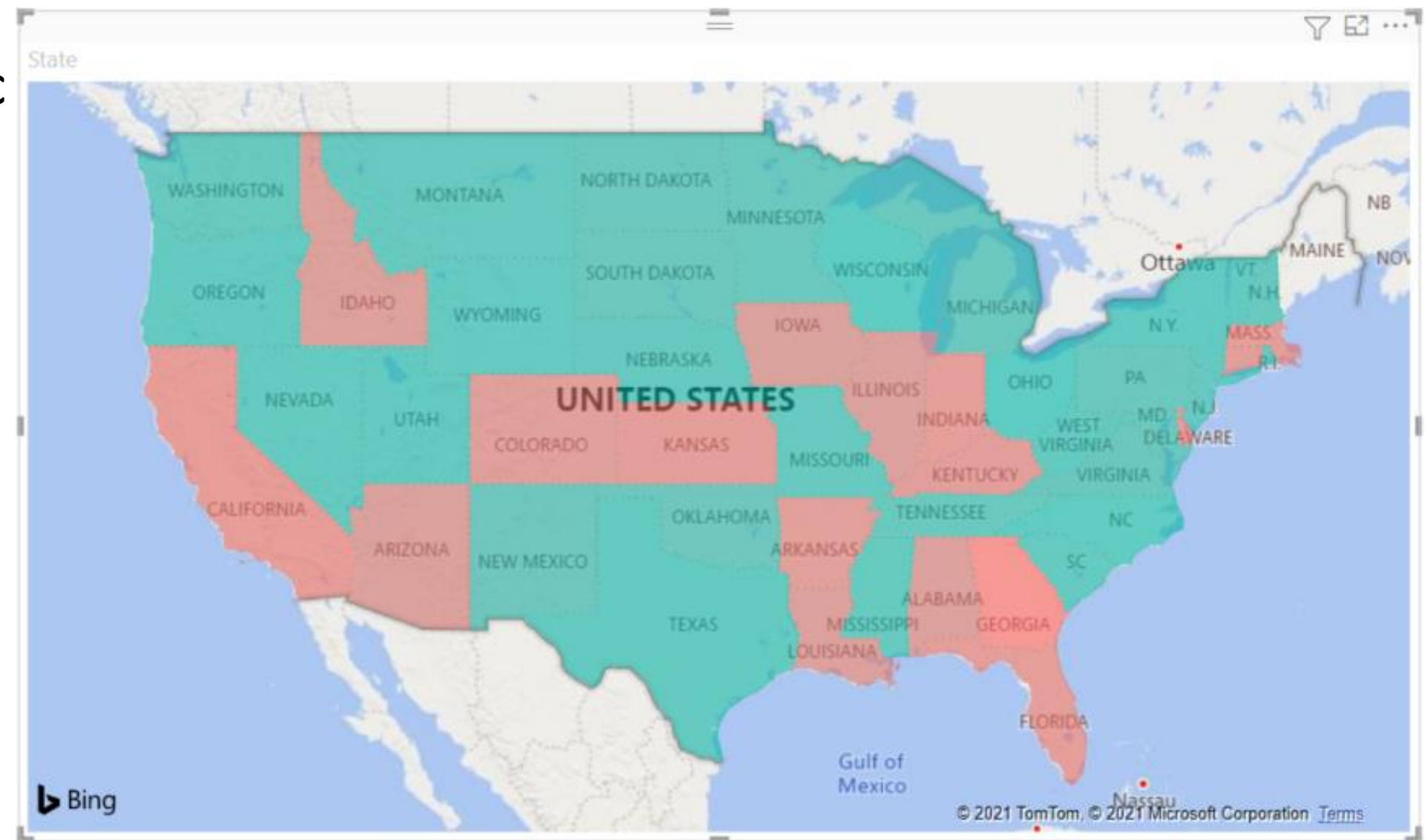
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Map Visual

- A Map displays data geographically.
- Map visuals help reveal geographic patterns.

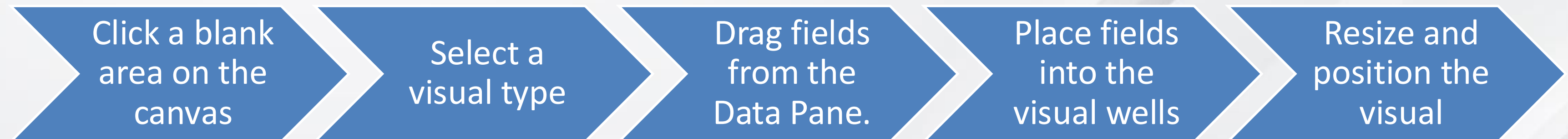
Example Use Cases:

- Sales by city
- Customers by country
- Complaints by region
- Store performance by location



Creating Your First Visual

Steps



Example: Create a bar chart using Region and Revenue.

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Choosing the Right Visual

- Choose visuals based on the question you want to answer
- Start with your question: What are you trying to communicate? Trends, comparisons, proportions, or relationships?
- Audience matters: Executives prefer simple visuals with clear takeaways, analysts want details.

Business Question	Recommended Visual
What is total revenue?	Card
Which region performs best?	Bar chart
How is revenue changing over time?	Line chart
What is revenue share by category?	Donut chart
What are the details by customer?	Table

Avoiding Wrong Visual Choices

A good visual makes the answer easier to see.

Poor Choice

Pie chart with 15 categories

Table for trend analysis

Map without location data

Too many cards

Better Choice

Bar chart

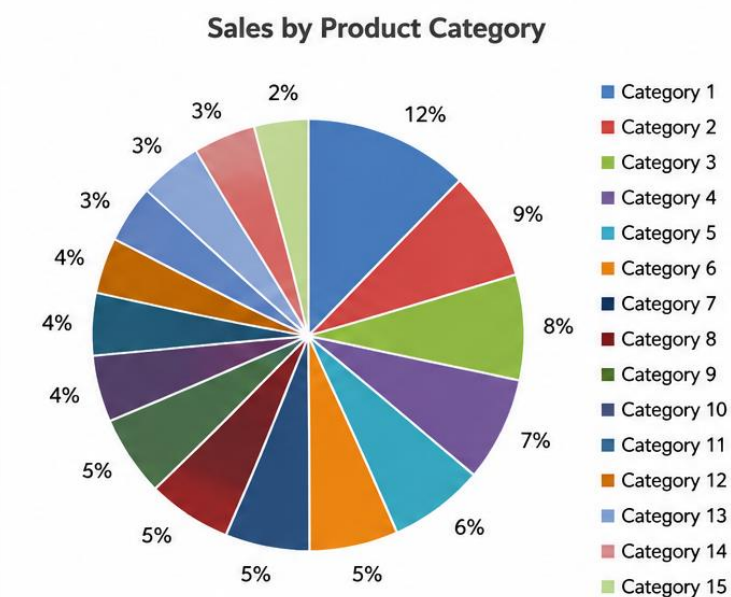
Line chart

Bar chart by region

Prioritized KPI cards

✗ POOR CHOICE

Pie chart with 15 categories is hard to read and compare.

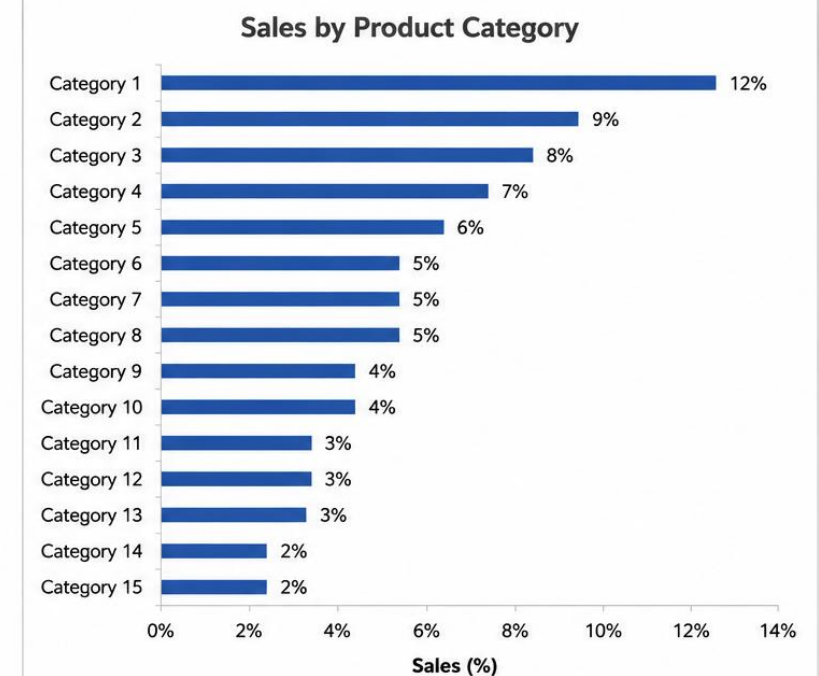


✗ Why it's not ideal:

- Too many slices make it difficult to compare values.
- Percentages are hard to read.

✓ BETTER CHOICE

Bar chart makes it easy to compare values across many categories.



✓ Why it's better:

- Easy to compare lengths of bars.
- Clear ranking of categories.

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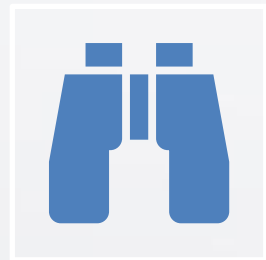
3. Formatting Reports



Visual Design Principles

The purpose of visuals is communication, not decoration.

Good visuals should be:



Clear



Simple



Relevant



Consistency



**Focused
on business
decisions**

Formatting Pane

The Format Pane controls how visuals look.

Formatting makes reports easier to read and more professional.

Common Settings:

Title

Labels

Legend

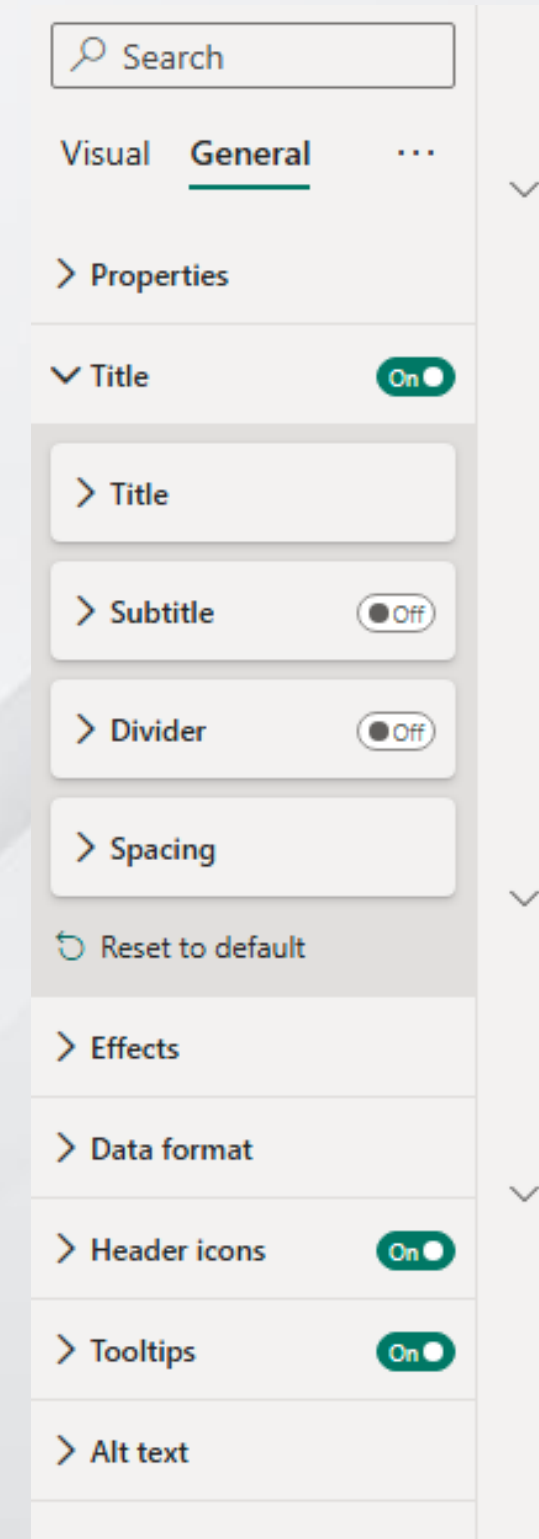
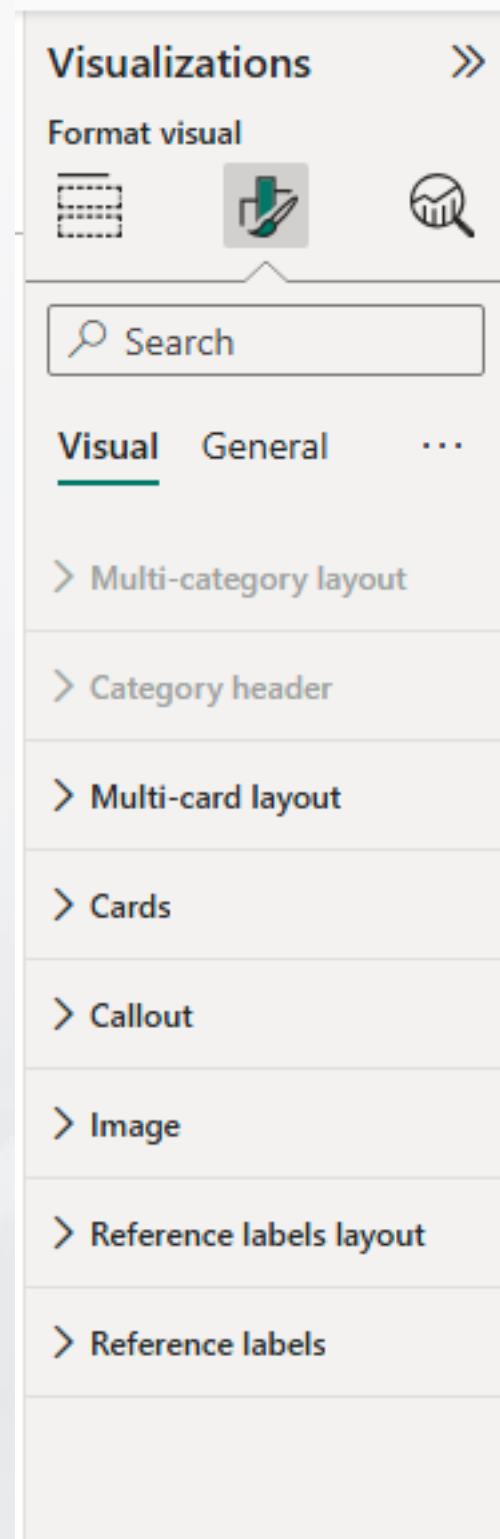
Axis

Colors

Data labels

Background

Border



Formatting Titles and Data Labels

Good visual titles should be clear and business-focused.

A strong title tells users what they are looking at.

Use data labels when they add clarity.

Weak Title

Chart 1

Sales

Table

Better Title

Revenue by Region

Monthly Sales Trend

Bar chart by region

- Show values only when needed
- Avoid clutter
- Format numbers clearly
- Use thousands or millions where appropriate

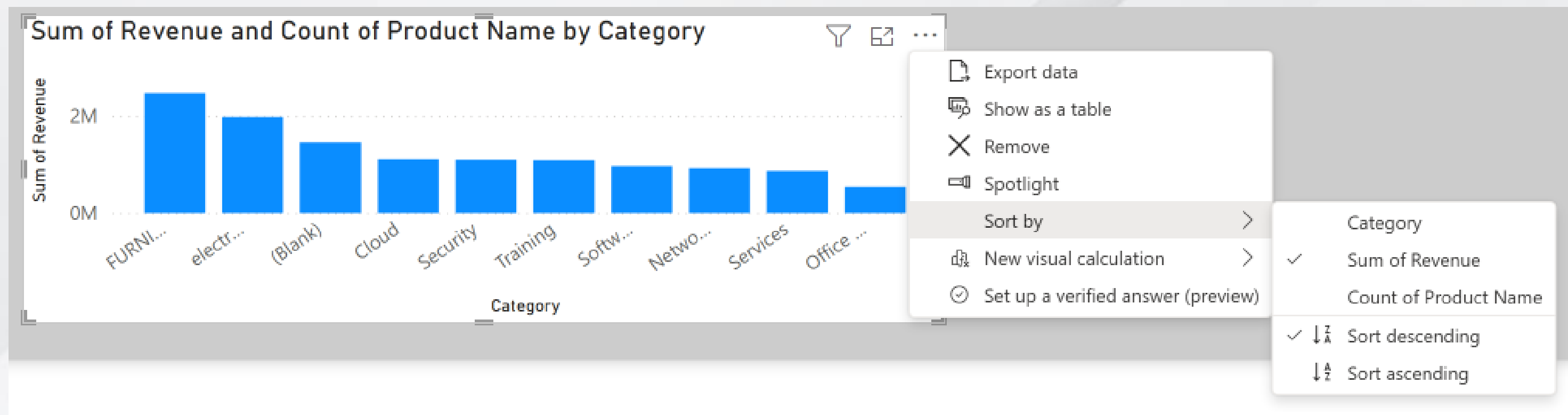
Sorting Visuals

Sorting helps users identify high and low performance.

Sorting turns charts into clear performance rankings.

Examples

- Sort revenue by region descending
- Sort customers by total sales
- Sort products by profit
- Sort months chronologically



Report Page Layout

A good layout guides the user's eye.
Layout should support the story of the report.

Suggested Structure

- Title at the top
- KPI cards below title
- Trend visual in the middle
- Category comparison
- visuals
- Detailed table at the bottom



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4. Building interactive pages



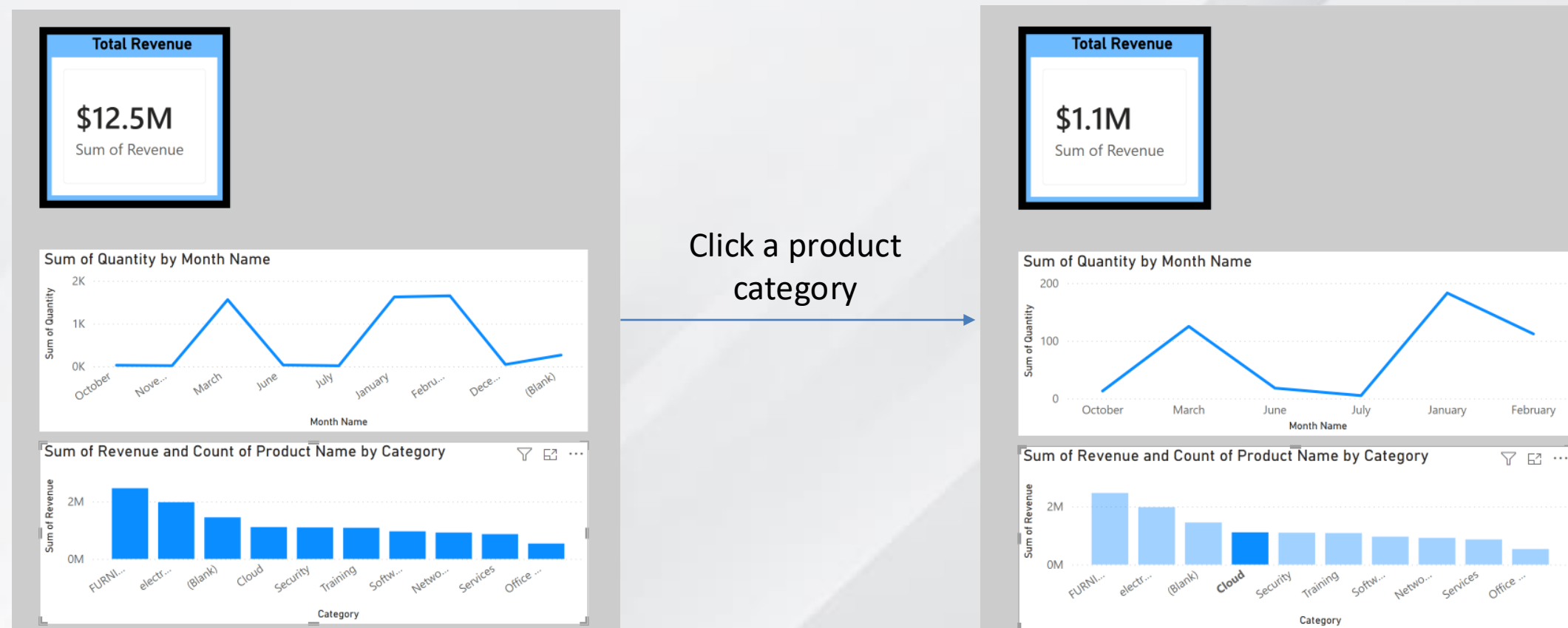
Visual Interactions

Power BI visuals can interact with each other.

Visual interactions make reports exploratory and interactive.

Example:

- Click a product category in Revenue by product category
- Other visuals update automatically
- Total Revenue and Monthly trends visuals show this product category results only



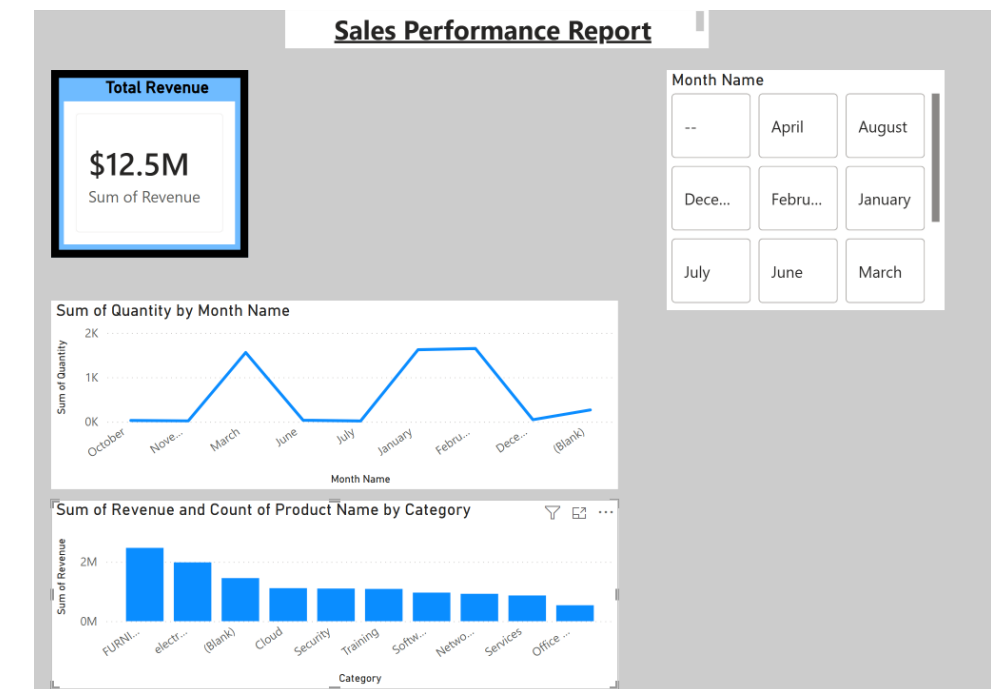
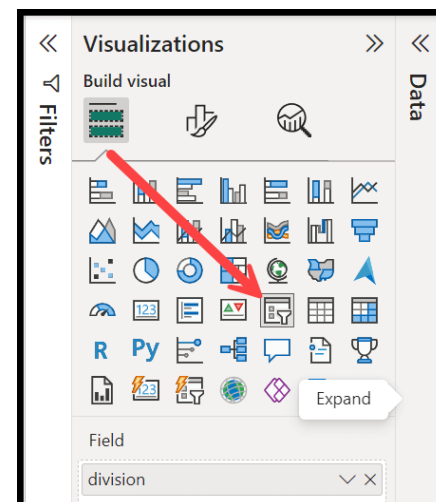
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Slicer Visual

- A Slicer allows users to filter the report interactively.
- Slicers give report users control over what they want to analyze.

Common slicers:

- Year
- Month
- Region
- Product Category
- Customer Segment



Feature

Filters Pane

Slicer

Purpose

Report designer controls filtering

Report user controls filtering

Example: A report designer applies a page filter for 2026, while users select Region using a slicer.



Drill Down

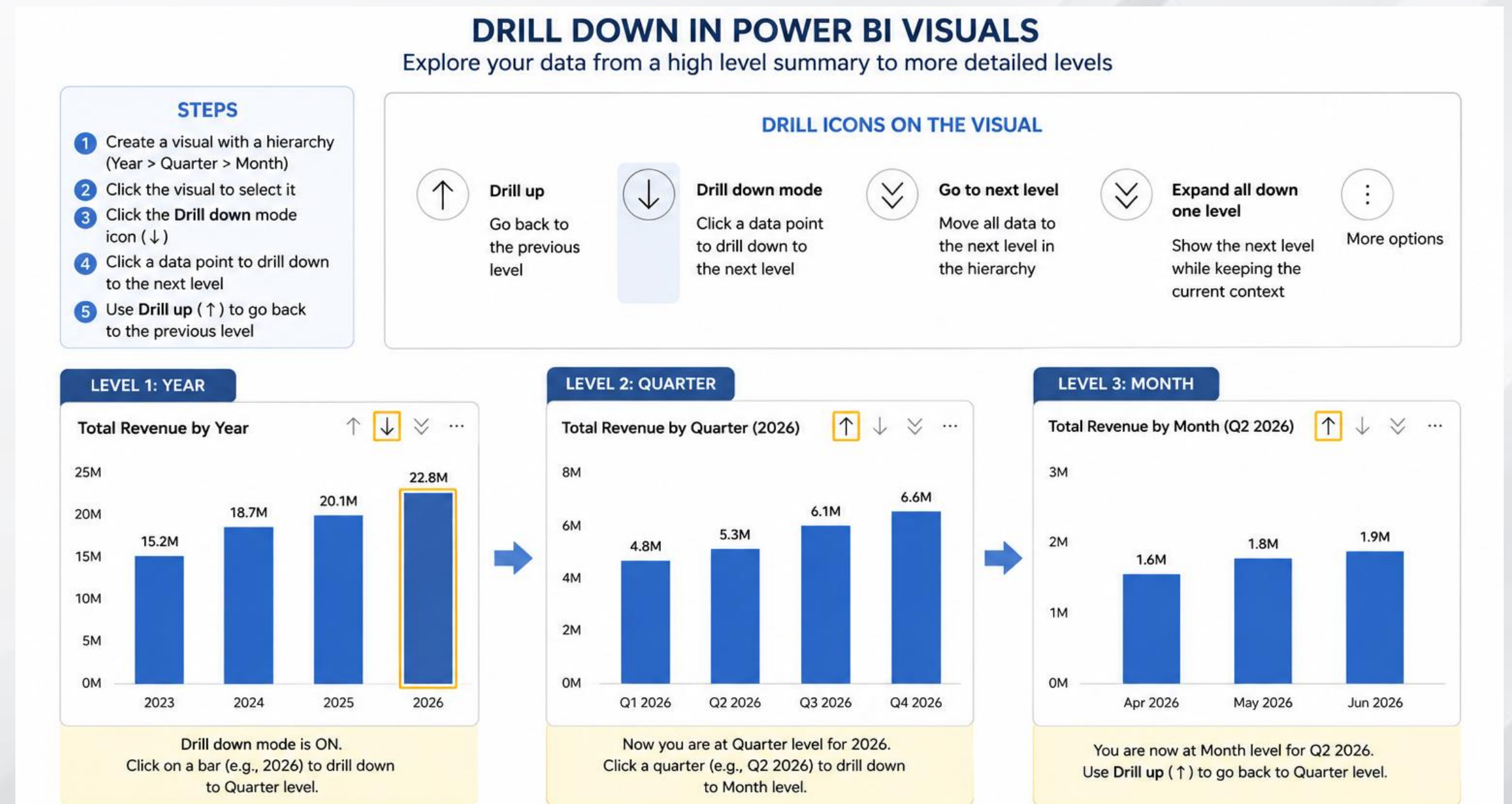
Drill down allows users to move from summary to detail.

Example hierarchy:

- Year
- Quarter
- Month
- Day

Business Example:

Start with annual revenue,
then drill down to monthly
revenue



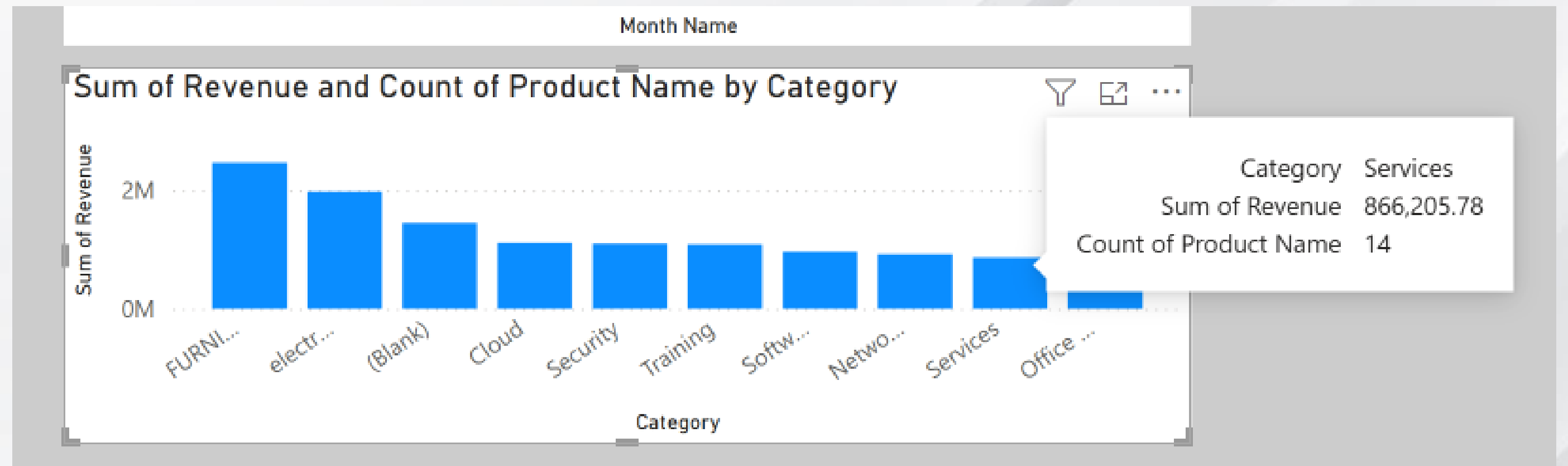
Tooltips

Tooltips show extra information when users hover over a visual.

Tooltips add detail without overcrowding the report page.

Examples:

- Revenue
- Profit
- Quantity
- Profit Margin
- Customer Count



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Demo on Power BI Report View Features



Exercise: Build a Sales Report

Using the same data set from last lecture after modelling data.

Create one page report with:

Report Area	Visual
KPI Section	Cards (Revenue, Quantity, # of Customers)
Trend Section	Line chart (Monthly Revenue Trend)
Region Section	Bar chart (Revenue by Region)
Product Section	Column chart (Revenue/Product)
Detailed Section	Table (Top 10 Customers by Revenue)



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Exercise

Expected Output:

A connected sales data model ready for reporting.

Exercise: Build a Sales Report

Add Interactivity

- Year Slicer
- Region Slicer
- Product Category Slicer

Add Formatting:

- Clear titles
- Data labels
- Sorted charts



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Exercise



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04**Key Points**

Report View is where visuals and reports are created.

Different visuals answer different business questions.

Formatting improves clarity and professionalism.

Filters, slicers, drill-down, and tooltips create interactivity.

A good report turns data into business insight.



Lecture 05:

- Calculations and Business Metrics with DAX

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Next Lecture





Thank You