Introduction to Business Intelligence & Power BI

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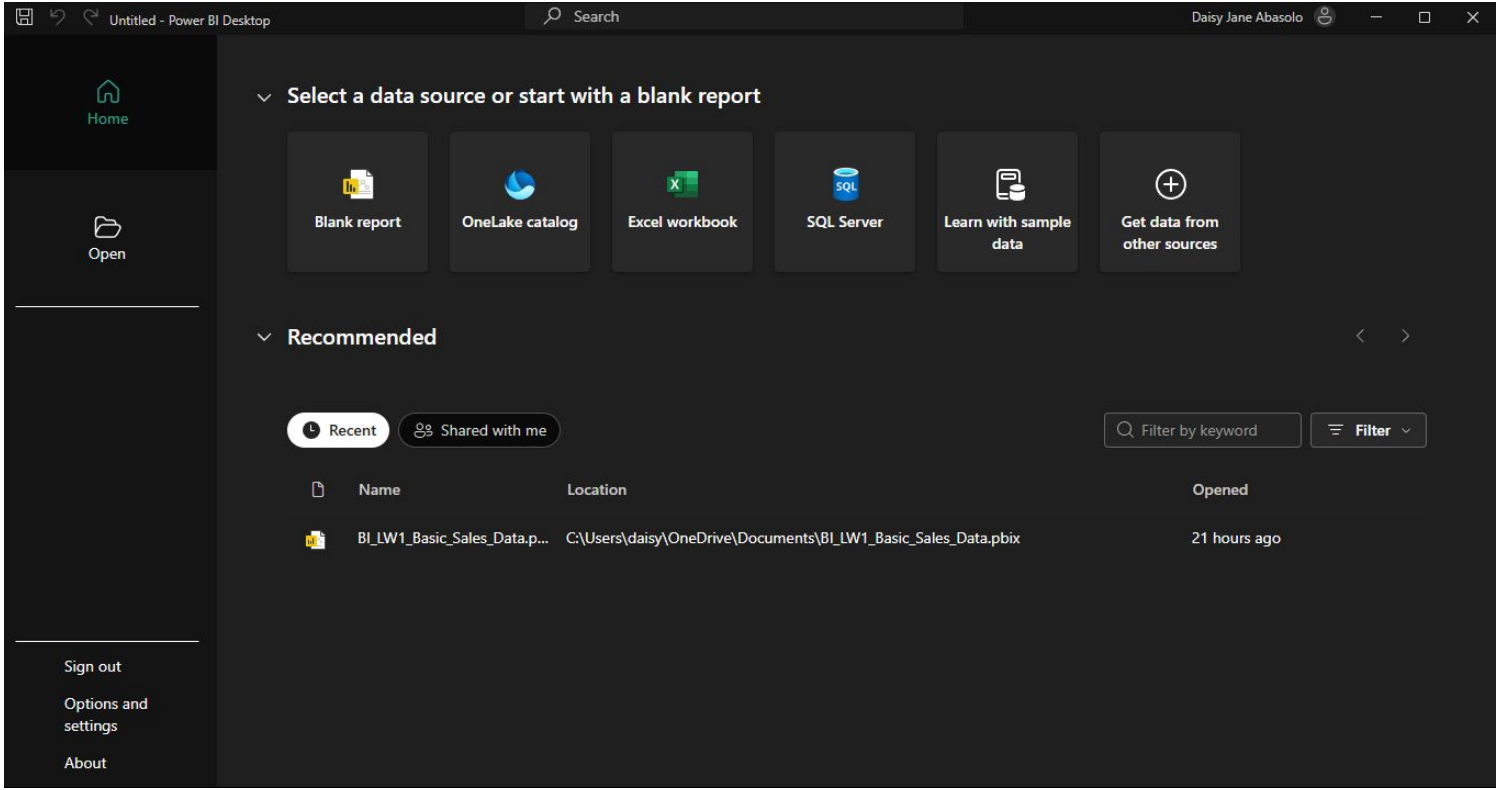
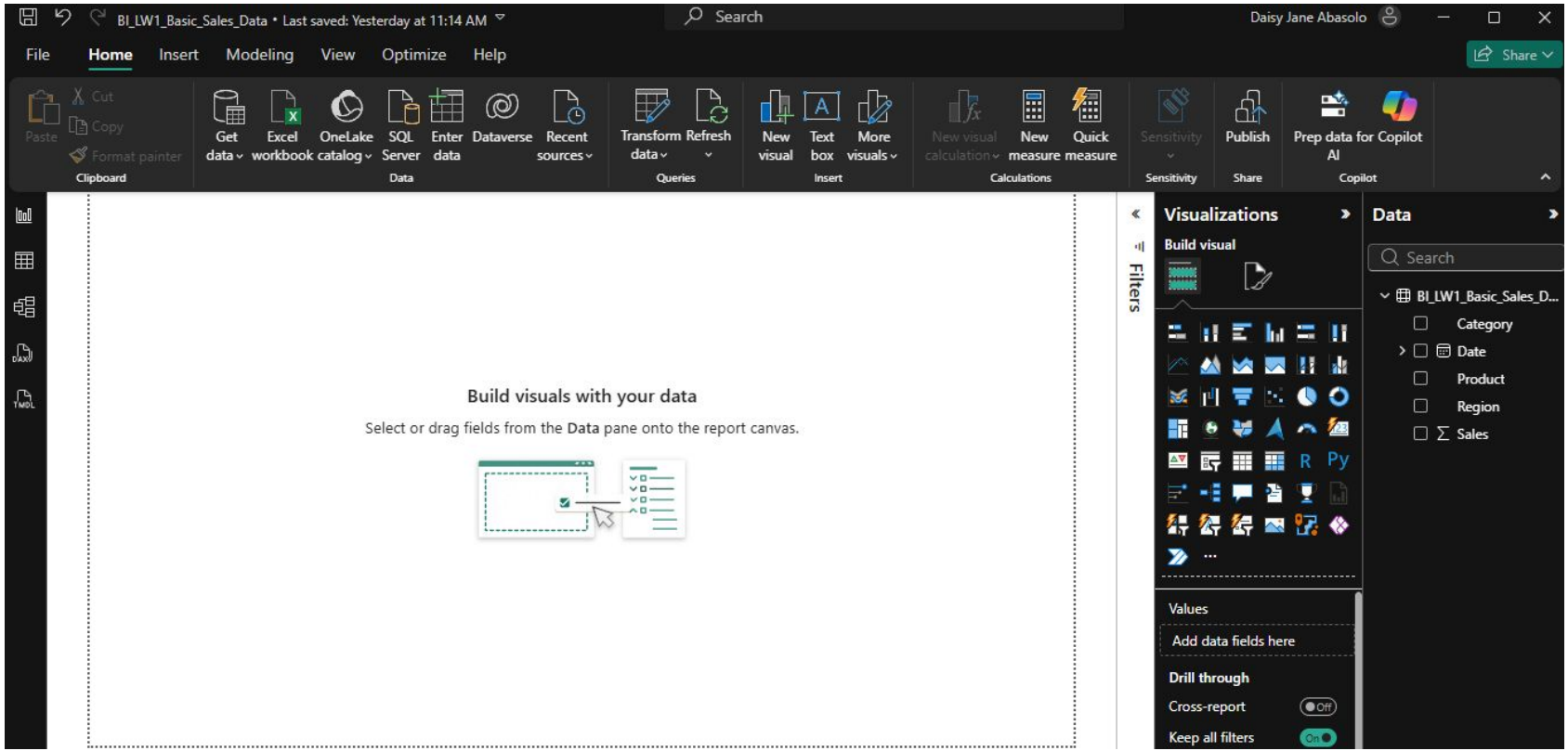
IS 107 - Business Intelligence

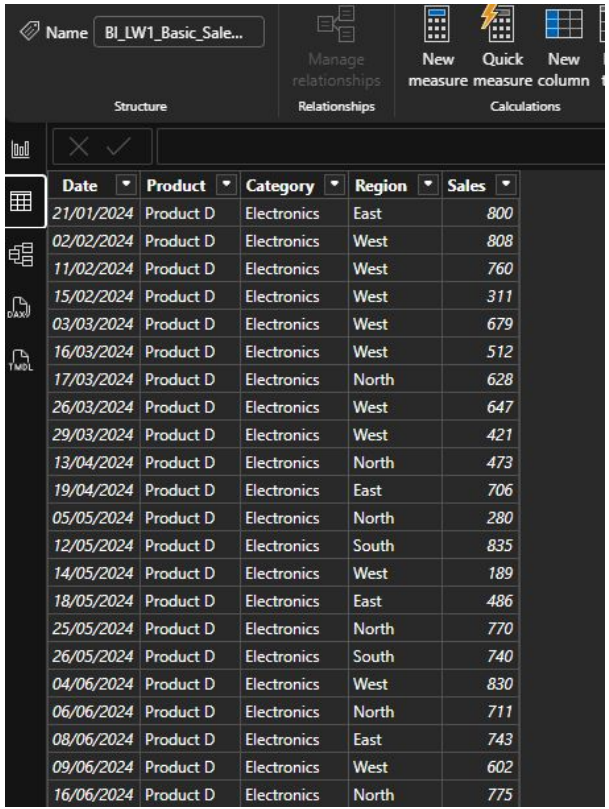
PART 1 | Step 1: Open Power BI Desktop



PART 1 | Step 2: Load the Dataset



PART 1 | Step 3: Verify Data in Data View



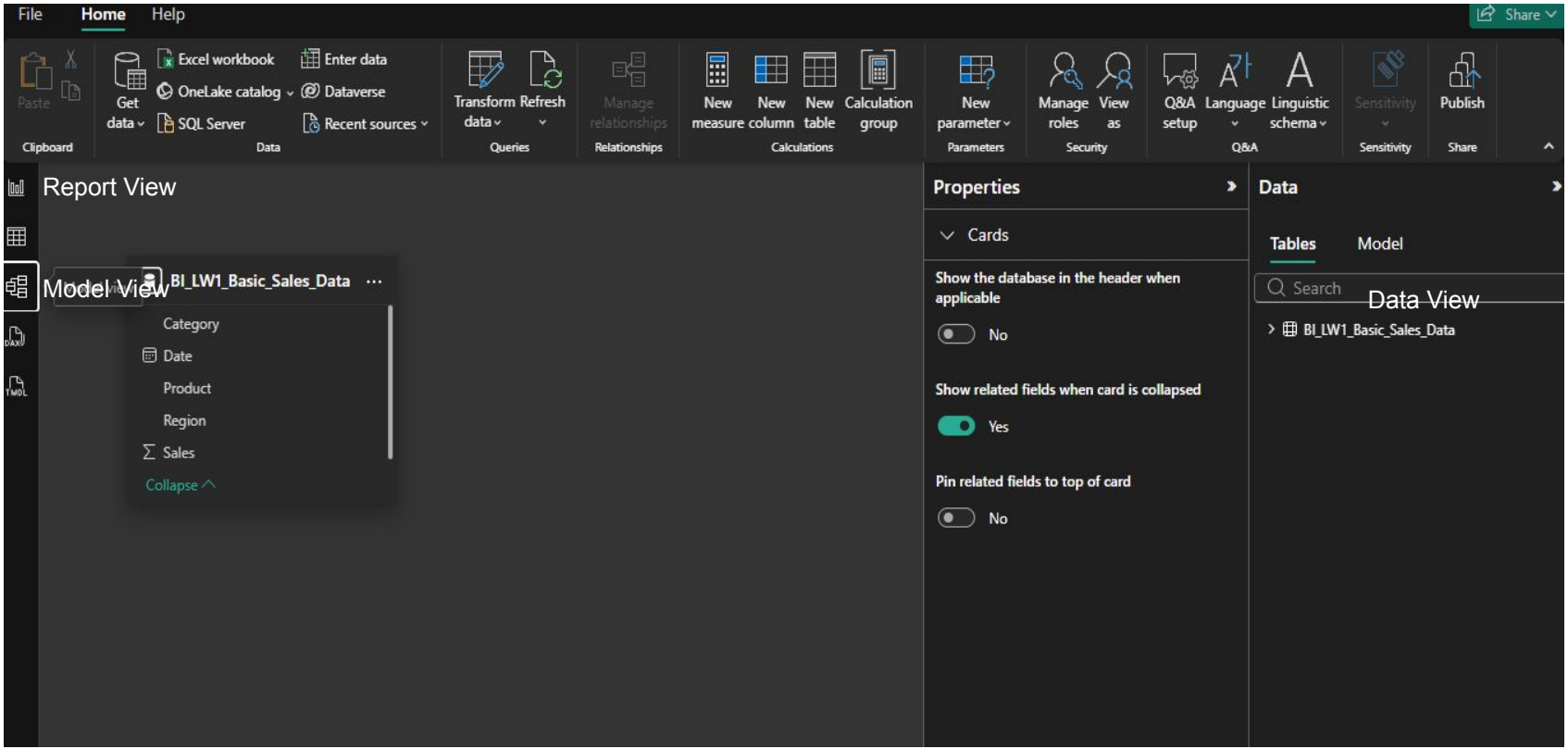
Date	Product	Category	Region	Sales
21/01/2024	Product D	Electronics	East	800
02/02/2024	Product D	Electronics	West	808
11/02/2024	Product D	Electronics	West	760
15/02/2024	Product D	Electronics	West	311
03/03/2024	Product D	Electronics	West	679
16/03/2024	Product D	Electronics	West	512
17/03/2024	Product D	Electronics	North	628
26/03/2024	Product D	Electronics	West	647
29/03/2024	Product D	Electronics	West	421
13/04/2024	Product D	Electronics	North	473
19/04/2024	Product D	Electronics	East	706
05/05/2024	Product D	Electronics	North	280
12/05/2024	Product D	Electronics	South	835
14/05/2024	Product D	Electronics	West	189
18/05/2024	Product D	Electronics	East	486
25/05/2024	Product D	Electronics	North	770
26/05/2024	Product D	Electronics	South	740
04/06/2024	Product D	Electronics	West	830
06/06/2024	Product D	Electronics	North	711
08/06/2024	Product D	Electronics	East	743
09/06/2024	Product D	Electronics	West	602
16/06/2024	Product D	Electronics	North	775

- Are all columns visible?
  - Yes, you should be able to see all five columns: Region, Category, Year (or Date), Sales, and a unique identifier like Product Name.

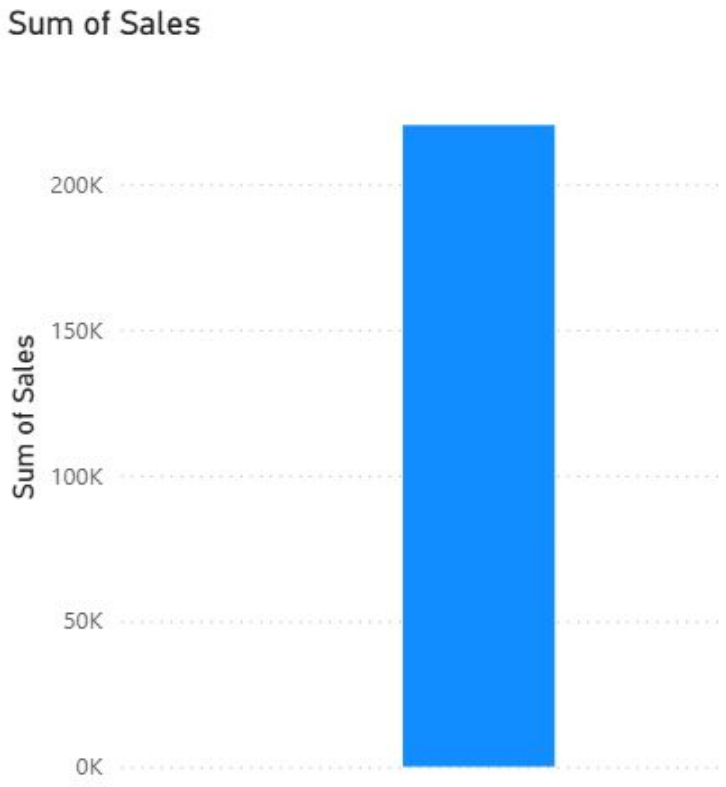
- Is “Date” formatted as Date?
  - I’ve already formatted the Date column correctly.

- Is “Sales” formatted as Decimal Number?
  - Yes, the Sales column should be a Decimal Number so that the visuals can correctly calculate totals, like $220.23K.

PART 2 | Exploring the Interface



PART 3: | Step 1: Quick Visualization

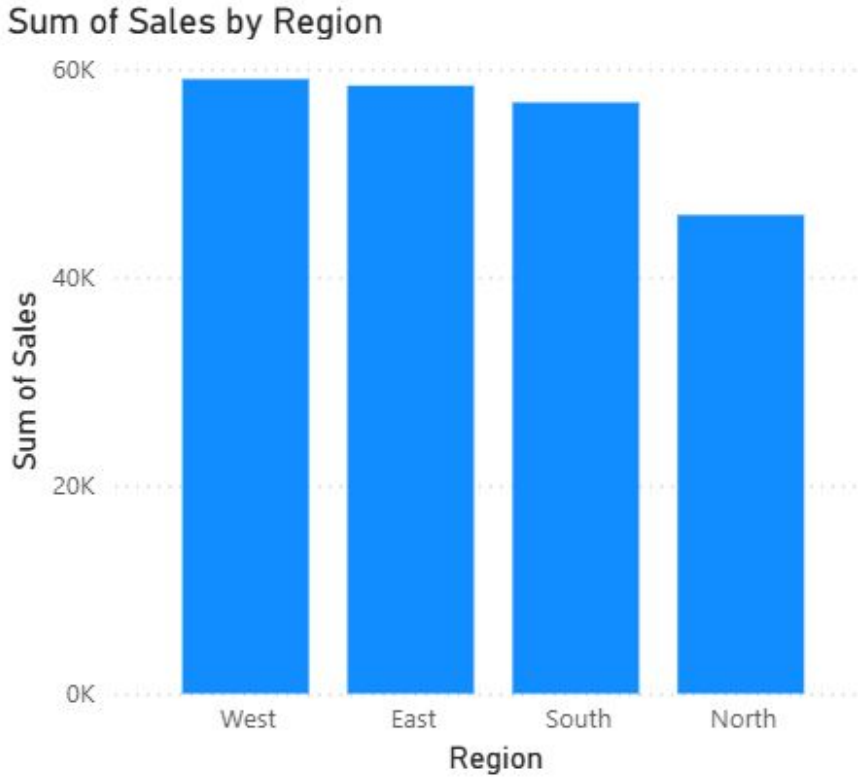


Question:

- What type of chart was created?
  Answer: Bar Chart

- What does it show?
  Answer: Sum of Sales

PART 3: | Step 2: Create a Sales by Region Chart

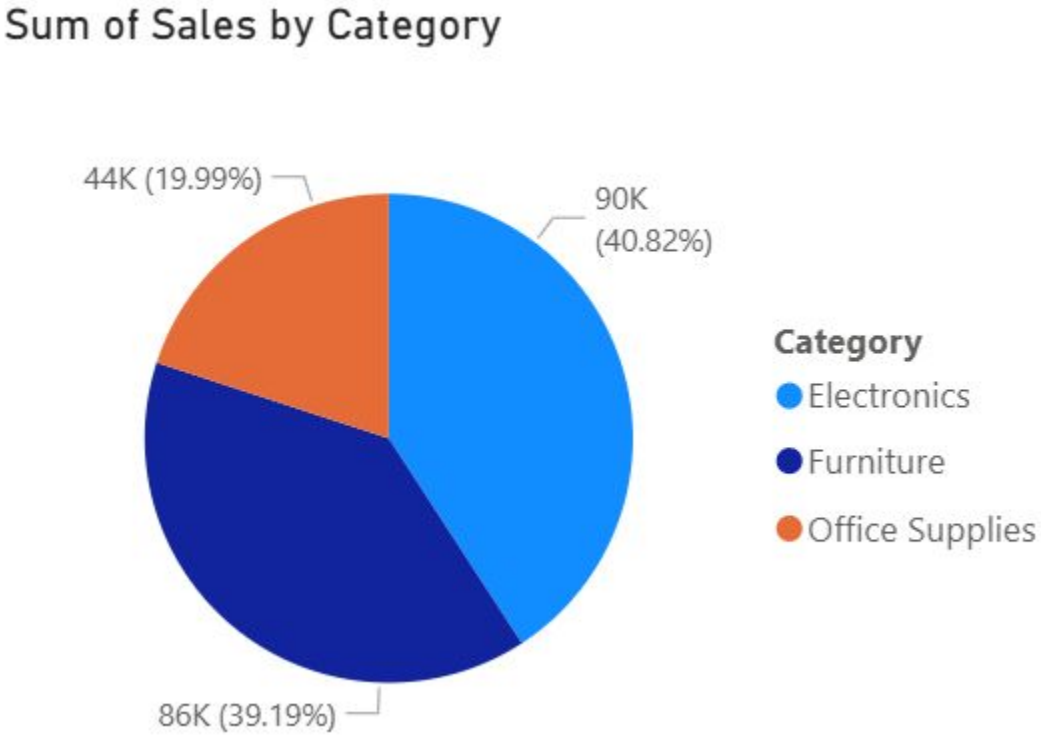


Question:

- Which region has highest sales?

Answer: West

PART 3: | Step 3: Sales by Category



Question:

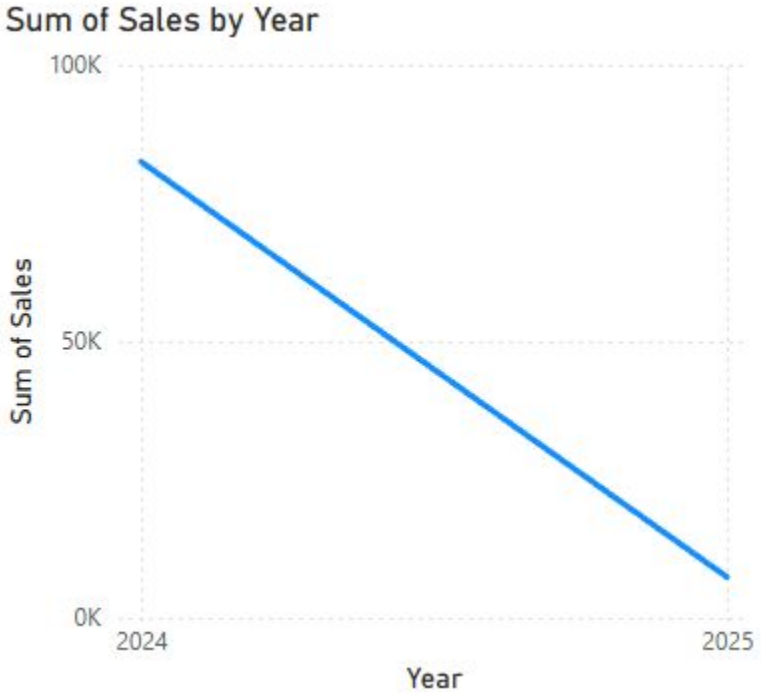
- Which category dominates?

Answer: Electronics

- Is the distribution balanced?

Answer: The sales are not balanced.

PART 3: | Step 4: Sales Over Time



Question:

● Is there growth?

Answer: There is no growth. Sales went down a lot between the two years.

● Any noticeable trend?

Answer: The Sum of Sales by Year chart shows that sales are going down fast. Sales started high in 2024 at around 80K, but they dropped quickly in 2025 to just above 10K.

PART 4: Basic Data Insight Interpretation

Students must now interpret visuals.

Question:

● Which region contributes most revenue?

Answer: West region
● Which product category performs best?

Answer: Electronics category
● Are sales consistent across dates?

Answer: No, sales are very inconsistent. They dropped a lot, from about $80,000 in 2024 to around $10,000 in 2025.

● What business recommendation can you suggest?

Answer: The most important action is to find out why sales dropped almost 87% in 2025. The business should also focus its marketing budget on the West and East regions, and on Electronics and Furniture, since these bring in the most sales.

LABORATORY QUESTIONS

Part A – Technical Questions

1. What are the five columns in the dataset?

   - Region, Category, Year, Sales, and usually a fifth column like Date or Product Name.

2. What data type is assigned to the “Sales” column?

   - Decimal Number.

3. Which Power BI view allows you to see raw data?

   - Data View.

4. What chart type is best for showing trends over time?

   - Line chart.

5. What aggregation is automatically applied to Sales?

   - Sum aggregation.

LABORATORY QUESTIONS

Part B – Analytical Questions

6. Which region has the highest total sales?

- West region

7. Which category has the lowest performance?

- Office Supplies

8. Are sales increasing, decreasing, or stable?

- Decreasing

9. If you were a manager, which region would you prioritize?

- I would prioritize the North region for growth, as it is currently the lowest-performing region ($46K) and represents the largest opportunity for market expansion.

10. Provide one actionable recommendation based on the data.

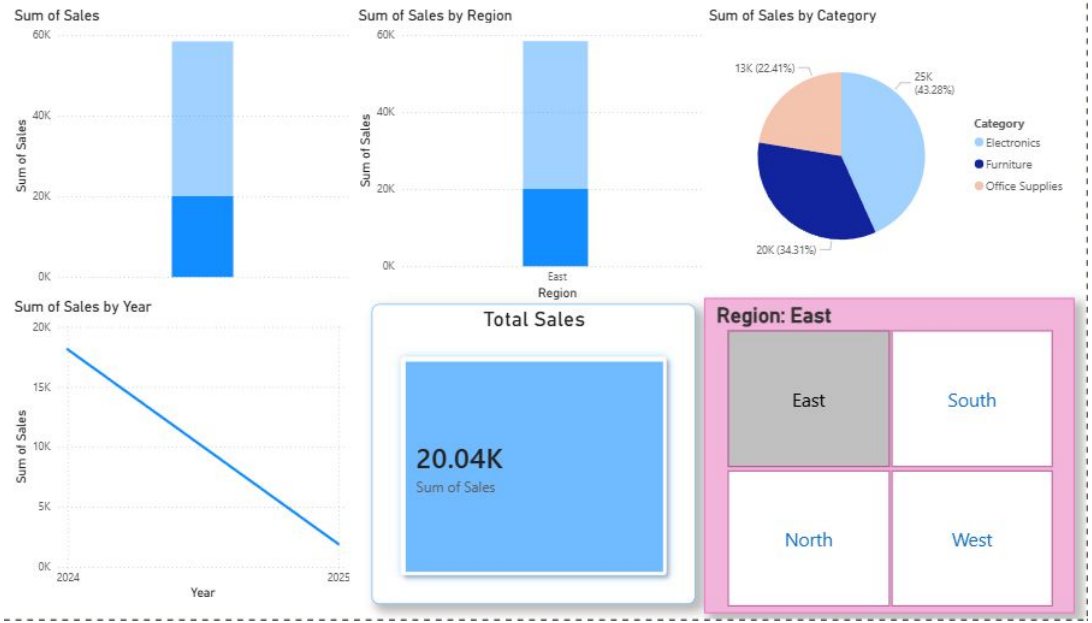
- Investigate the 2025 sales drop of ~87% to prevent potential business issues.

ENHANCEMENT SECTION : Task 1: Add a Card Visualization

Question:

- What is the total sales amount?
  - 220.23K

Task 2: Add Slicer

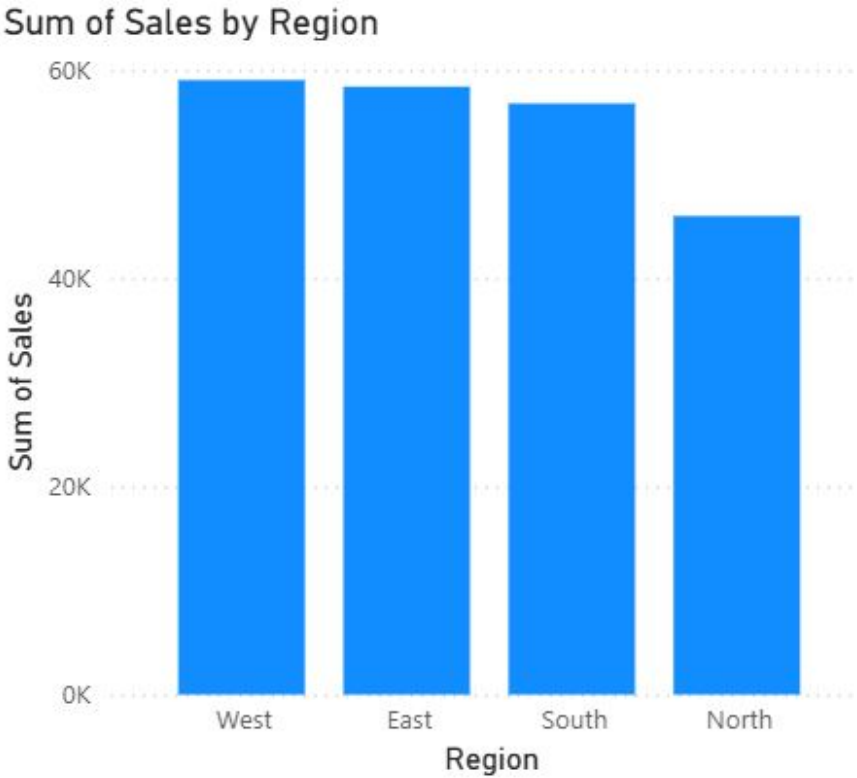


Question:

- What happens to other visuals when you click a region?
  - All other charts update to show only the selected region's data.

- Why is filtering important in BI?
  - Filtering is important in Business Intelligence because It helps focus on relevant data, identify problems, and make faster, clearer decisions.

Task 3: Sort Sales



Question:

- Does sorting improve readability?
  - Yes, it organizes data clearly, making comparisons easier.

- Why?
  - Bars are sorted descending (West, East, South, North), letting viewers quickly identify top and bottom performers.

Task 4: Identify Outliers

- Which region is significantly higher or lower?
  - West ($59K) and East ($58K) are higher; North ($46K) is lower.

- What might explain that difference?
  - West and East may have larger markets, stronger demand, or better supply chains; North may have fewer stores, smaller teams, or supply issues.