

Activity 2 (27.02.2026)

Sales Data Analysis Challenge

Objective: Students will analyze a realistic sales dataset to answer business questions,

practicing data manipulation, grouping, filtering, and aggregation techniques.

Instructions for Students:

You are a junior data analyst at "TechMart," a retail company. Your manager has provided

you with sales data and needs answers to specific business questions.

Expected Learning Outcomes:

- Handling missing data in real-world scenarios
- Grouping and aggregating data for business insights
- Creating new features from existing data
- Using pivot tables for multi-dimensional analysis
- Drawing actionable conclusions from data

The screenshot shows the Google Colab interface. At the top, there are three tabs: 'Activity 2', 'Sales Data Analysis', and 'Welcome To Colab - Colab'. The 'Welcome To Colab' tab is active. The sidebar on the left includes icons for Variables, Terminal, and Help. The main workspace displays a code cell with the following content:

```
[2]: 0s
import pandas as pd

sales_data = pd.read_csv("techmart_sales_data.csv")
sales_data.head()
```

Below the code cell is an interactive table showing the first five entries of the sales data:

index	Order_ID	Order_Date	Customer_ID	Product	Category	Region	Quantity	Price	Discount	Total_Sales
0	1001	2025-01-01	2051	Smartphone	Accessories	West	1	35695	20	28556.0
1	1002	2025-01-02	2092	Laptop	Wearables	North	8	26644	20	170521.6
2	1003	2025-01-03	2014	Tablet	Accessories	South	1	4500	5	4275.0
3	1004	2025-01-04	2071	Tablet	Wearables	North	9	5552	5	47469.6
4	1005	2025-01-05	2060	Tablet	Electronics	West	6	36006	25	162027.0

Below the table, there are buttons for 'Show 25 per page' and 'Like what you see? Visit the [data table notebook](#) to learn more about interactive tables.'

At the bottom, there are 'Next steps:' buttons for 'Generate code with sales_data' and 'New interactive sheet'.