

Exercise 1:

Sales Performance Analysis of XYZ Company

Data Overview:

The sales data of XYZ Company contains the following attributes for each transaction:

- **Date:** The date of the sale.
- **Product Name:** The name of the product sold.
- **Units Sold:** The number of units sold in the transaction.
- **Revenue:** The total revenue generated by the sale.
- **Region:** The geographical region where the sale occurred.
- **Discount Offered (%):** The percentage of discount offered on the sale.
- **Salesperson:** The name of the salesperson responsible for the sale.

Insert At least 20 data and create the dataframe.

1. What are the top 3 sales transactions with the highest revenue?
2. How many units of each product were sold?
3. What is the total revenue after applying discounts?
4. Which sales transaction had the highest discount offered, and how much revenue did it generate after applying the discount?
5. Which salesperson generated the highest total revenue?
6. What is the average discount offered by each salesperson?
7. How much revenue was generated in each region?
8. In which region did Alice generate the highest sales?
9. Which product generated the highest revenue per unit sold?
10. How many transactions were rated as "High" performance?
11. Which salesperson sold the most units in the North region without offering any discount?
12. What is the average revenue per unit sold in each region for each product?
13. Which salesperson has the highest average revenue after discounts, and how does it compare between regions?
14. What is the cumulative total revenue over time for each salesperson?

15. For each salesperson, rank the transactions by revenue, and find the top 2 transactions for each.
16. How has the total revenue generated by each product changed over time? Show cumulative revenue for each product per day.
17. Analyze how discounts affect revenue. For each product, what is the average revenue generated with a discount compared to without a discount?
18. What is the weighted average discount offered by each salesperson, weighted by the revenue they generated?
19. What percentage of the total revenue does each region contribute? Compare it to the total revenue per region.