41. Sales and Profit Analysis: a) Load the “sales\_data.csv” file into a Pandas data frame, which contains columns “Date,” “Product,” “Quantity Sold,” and “Unit Price”

b) Create a new column named “Total Sales” that calculates the total sales for each transaction (Quantity Sold \* Unit Price).

c) Calculate the total sales for each product and the overall profit, considering a 20% profit margin on each product. Display the top 5 most profitable products.

CODE:

import pandas as pd

df = pd.read\_csv('sales\_data.csv')

df['Total Sales'] = df['Quantity Sold'] \* df['Unit Price']

product\_sales = df.groupby('Product').agg({'Total Sales': 'sum'}).reset\_index()

product\_sales['Profit'] = product\_sales['Total Sales'] \* 0.20

overall\_profit = product\_sales['Profit'].sum()

top\_products = product\_sales.nlargest(5, 'Profit')

print("Total Sales per Product:")

print(product\_sales.sort\_values('Total Sales', ascending=False).to\_string(index=False))

print(f"\nOverall Company Profit: ${overall\_profit:,.2f}")

print("\nTop 5 Profitable Products:")

print(top\_products[['Product', 'Profit']].to\_string(index=False))

OUTPUT:

