4.Scenario: You are working on a project that involves analyzing the sales performance of a company over the past four quarters. The quarterly sales data is stored in a NumPy array named sales\_data, where each element represents the sales amount for a specific quarter. Your task is to calculate the total sales for the year and determine the percentage increase in sales from the first quarter to the fourth quarter.

Question: Using NumPy arrays and arithmetic operations calculate the total sales for the year and determine the percentage increase in sales from the first quarter to the fourth quarter?

CODE :

import numpy as np

import pandas as pd

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

sales\_data = df['Sales'].to\_numpy()

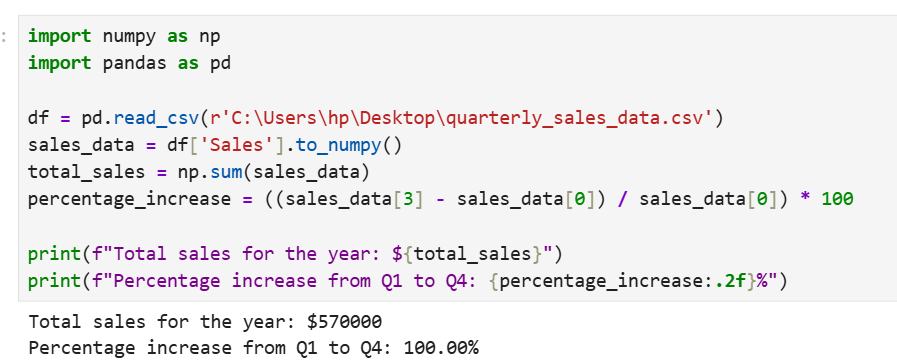
total\_sales = np.sum(sales\_data)

percentage\_increase = ((sales\_data[3] - sales\_data[0]) / sales\_data[0]) \* 100

print(f"Total sales for the year: ${total\_sales}")

print(f"Percentage increase from Q1 to Q4: {percentage\_increase:.2f}%")

**OUTPUT:**



DATASET:

|  |  |
| --- | --- |
| Quarter | Sales |
| Q1 | 100000 |
| Q2 | 120000 |
| Q3 | 150000 |
| Q4 | 200000 |