

## Python Libraries [Numpy, Pandas, Matplotlib, Seaborn]

### Assessment 1: Financial Analysis

#### Dataset:

[https://github.com/Priya-tops/Tops-Assessment-Data/blob/main/Data%20Analytics/finance\\_economics\\_dataset.csv](https://github.com/Priya-tops/Tops-Assessment-Data/blob/main/Data%20Analytics/finance_economics_dataset.csv)

Explore the Data by Answering the Following Questions and Summarize Your Insights  
Use Python libraries such as Pandas, NumPy, Matplotlib, and Seaborn to analyze the data.  
After answering each question, write a brief summary of your findings or observations.

1. What is the shape of the dataset?
2. What are the column names and their data types?
3. How many unique stock indices are there?
4. What is the date range of the dataset?
5. Are there any missing values?
6. Are there negative values in columns that should be non-negative?
7. What is the summary of GDP Growth (%)?
8. Are there rows with zero or near-zero trading volume?
9. Are there any duplicate rows?
10. Are there outliers in GDP, Gold, or Oil prices?
11. What is the summary of Inflation Rate (%)?
12. What is the average unemployment rate?
13. Which index has the highest trading volume?
14. How many stock records are from each index?
15. What is the correlation between inflation and interest rate?
16. What is the average Consumer Confidence Index?
17. Which column has the highest standard deviation?
18. What is the highest gold price recorded?
19. Which date had the highest crude oil price?
20. What is the average corporate profit?

## **Insightful Analysis Questions**

These questions aim to uncover key relationships and gain deeper knowledge about cardiovascular disease. To answer them, you'll need to analyze the data and write down any patterns, trends, or observations you notice during the process.

1. What percentage of the dataset shows negative GDP growth?
2. Does high inflation correspond to higher interest rates?
3. Is there a relationship between unemployment and consumer spending?
4. Do higher corporate profits align with higher consumer confidence?
5. What's the trend of crude oil prices over time?
6. Are gold prices inversely related to stock performance?
7. Does government debt impact consumer confidence?
8. How do mergers & acquisitions (M&A) activity correlate with stock index closing prices?
9. Is retail sales growth associated with GDP growth?
10. Is stock market performance linked to consumer spending?
11. Which stock index had the highest average closing price?
12. What is the relationship between interest rate and unemployment?
13. Do lower consumer confidence values coincide with higher bankruptcy rates?
14. Which indicator has the highest correlation with stock close price?
15. Are unemployment rates lower when corporate profits are high?

## Assessment 2: Retail Sales Analysis

### **Dataset:**

<https://github.com/Priya-tops/Tops-Assessment-Data/blob/main/Data%20Analytics/Retail%20Data.csv>

Explore the Data by Answering the Following Questions and Summarize Your Insights  
Use Python libraries such as Pandas, NumPy, Matplotlib, and Seaborn to analyze the data.  
After answering each question, write a brief summary of your findings or observations.

1. View the structure of the dataset (columns, types, missing values).
2. What is the shape (rows, columns) of the dataset?
3. Are there any duplicate records?
4. Are there any missing or corrupted entries in Ship Date, Order Date, or numeric columns?
5. Convert Order Date and Ship Date to datetime.
6. Check for future or inconsistent shipping dates.
7. Convert price columns to numeric (remove \$ and commas).
8. What are the unique values in Customer Type and Order Priority?
9. What are the most common shipping modes?
10. Which cities have the highest number of orders?
11. What's the range of order quantities and prices?
12. Create a new column for shipping duration.
13. Are there any orders with zero or negative total or quantity?
14. Are all discount percentages matching discount dollar amounts?
15. Check for mismatches in total calculation'
16. Identify top 5 products by order quantity.
17. Which Account Manager handled the most revenue?
18. What is the average shipping cost by mode?
19. Find the most profitable product.
20. Find the most profitable product.

## **Insightful Analysis Questions**

These questions aim to uncover key relationships and gain deeper knowledge about cardiovascular disease. To answer them, you'll need to analyze the data and write down any patterns, trends, or observations you notice during the process.

1. What is the total revenue generated across all orders?
2. Which customer type generates more revenue?
3. How does order priority affect revenue?
4. What is the average profit margin by product category?
5. What is the most profitable product overall?
6. How many days does it usually take to ship an order?
7. Do longer shipping times impact profit margins?
8. Which city brings in the highest revenue?
9. Which account manager generated the most revenue?
10. Which shipping mode is most cost-effective (lowest avg. shipping)?
11. Do higher discounts reduce profits?
12. Which state has the highest number of orders?
13. What is the average discount % across all orders?
14. What is the average total spend per order?
15. . Are certain containers (e.g., Small Box, Wrap Bag) more profitable?