

## **Q1. Basic Data Exploration**

Load the dataset and display:

- Total number of rows and columns
  - Number of missing values in each column
  - Data types of all columns
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## **Q2. Time Period & Transactions**

Find:

1. The earliest and latest purchase dates.
  2. The total number of unique invoices.
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## **Q3. Revenue Calculation**

Create a new column `TotalPrice = Quantity * UnitPrice`.

Then calculate:

- The total revenue generated
  - The average revenue per transaction
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## **Q4. Monthly Sales Trend**

Group data by month and visualize the **total monthly revenue** using a **line chart**.

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## **Q5. Top 10 Best-Selling Products**

Find and visualize the **top 10 products by total revenue** using a **bar plot**.

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## **Q6. Country-Wise Sales**

Find the **top 5 countries** (excluding UK) that generated the most revenue.  
Visualize the results with a **horizontal bar chart**.

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## **Q7. Customer Behavior Analysis**

Find:

1. Total number of unique customers
  2. Top 5 customers by total purchase amount
  3. Average spend per customer
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## **Q8. Month-on-Month Growth Rate**

Using **NumPy**, calculate the **percentage growth rate** in monthly sales compared to the previous month.

Store and display the result in a new DataFrame.

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## **Q9. Correlation Analysis**

Find the correlation between **Quantity**, **UnitPrice**, and **TotalPrice**.  
Visualize it using a **Seaborn heatmap**.

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## **Q10. Returns or Cancellations Detection**

Invoices starting with '**C**' indicate cancelled transactions.

Find:

1. The total number of cancelled invoices
2. The total value lost due to cancellations