

## Week 8 - Graded Mini Project

### Task List

#### A. Basic SQL Queries (5 Tasks)- Load csv files in database

1. Retrieve all stock items that contain the word "**T-LIGHT**" in their description.
  2. Calculate the **total quantity sold per StockCode**.
  3. Find **total revenue (Quantity × UnitPrice)** per **CustomerID**.
  4. Get a list of all **invoices** and count of **distinct stock items** per invoice.
  5. Perform an **inner join** between sales and stock details to display full item names along with **total revenue per item**.
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#### B. EDA Using Pandas (5 Tasks)

6. Check for **missing values**, **data types**, and **duplicates** in both datasets.
  7. Convert InvoiceDate into datetime, and extract:
    - Invoice date
    - Month
    - Hour of transaction
  8. Add a new column TotalPrice = Quantity × UnitPrice.
  9. Identify the **top 3 bestselling items** by quantity sold.
  10. Find out how many **unique customers** made purchases and the **average quantity per invoice**.
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#### C. Visualization (5 Tasks)

11. Plot a **bar chart** of top 10 items by **quantity sold**.
  12. Plot **total sales per hour of the day** to understand peak shopping hours.
  13. Create a **pie chart** showing revenue distribution among top 5 customers.
  14. Visualize the **monthly revenue trend** using a line chart.
  15. Create a **stacked bar chart** of top 5 invoices by revenue, showing contribution from each item.
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#### D. Business Insights (4 Tasks)

16. Identify which **product generates the highest total revenue**.

17. Determine **average order value per invoice**.
18. Find the **customer with the highest number of transactions**.
19. Check how many products in the sales data do **not have a matching entry** in the stockDetails file.