

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**.

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**.

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.

D. Business Insights (5 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. Evaluate the **percentage of stock items sold vs. total in inventory**.
20. Check how many products in the sales data do **not have a matching entry** in the stockDetails file.