

Coding Challenge – Data Visualisation Dashboard

In this question, you are required to build a simple web-based system to help **analyse procurement, sales, and inventory history** for an imaginary retail client.

Background

Currently, the client maintains inventory, procurement and sales data in Excel sheets. The client wants to import this data into a system and visualise it, to allow them to understand purchase trends, sales trends, and price changes over a few days.

Data Example (Excel Input)

The Excel file will include columns such as:

- Product ID
- Product Name
- Opening Inventory on Day 1
- Procurement Quantity and Price on Day 1, 2, 3
- Sales Quantity and Price on Day 1, 2, 3

Core Requirements

1. A Dashboard for Data Visualisation

- For each product, display procurement history, sales history, and inventory history **in the same line chart** (with a chart library of your choice).
- Inside the chart, show **three curves**:
 - Inventory for each day
 - Procurement Amount (Qty * Price)
 - Sales Amount (Qty * Price)
- The chart should allow the user to compare values over several consecutive days.
- Preferably, the system should be flexible enough to allow the user to select products to compare

2. User Login function

- The dashboard should have a basic login page and log in the user by username and password.
- It should be done with your own database. Try not to use commercial Authentication services (e.g. Auth0, Clerk)

3. **Import Excel to a database**

- The system should provide a page and API to allow the user to upload an Excel file with procurement and sales history.
- After uploading, the data should be parsed and stored for visualisation.
- Use an ORM library of your choice

4. **Deployment**

- If possible, deploy your site to a hosting platform of your choice and provide the link to the site.

Deliverables

- A **working prototype** of the system (deployed or locally runnable).
- A link to the repository
- A **short document** describing:
 - Your understanding of the requirements.
 - The chosen structure of the system (data flow, backend, frontend, database, etc.).
 - Any assumptions or limitations.

Recommended Tech Stack

(Here are some tech stacks that might be useful. You are not required to use them.)

- NextJS
- React
- TypeORM/Prisma

Timeline

- Delivery expected within **1 week**.

Evaluation Criteria

We want to see:

- How clearly you analyse requirements.
- How you organise data and design the system.
- Your ability to deliver a working solution and explain your thought process.