E-COMMERCE PRODUCT-LEVEL SALES DASHBOARD WITH PROFITABILITY AND STOCK INSIGHTS

1. Background and Problem Statement:

An online D2C brand selling personal care products wanted deeper visibility into SKU-level performance across its product catalog. The team lacked an integrated view of sales, profit margins, and inventory, resulting in overstocked low-margin items and missed sales on fast-moving SKUs. The company engaged in a project to build a comprehensive **Google Data Studio dashboard** to monitor product-level sales, profitability, and stock status in real time.

2. Objectives:

- To track SKU-wise sales volume, revenue, cost, and gross profit
- To identify top-selling and underperforming products based on contribution and margin
- To integrate inventory data to monitor stock levels alongside sales performance
- To enable dynamic filtering by category, campaign, and time range for deeper insights

3. Methodology:

Data Sources Integrated:

- **Google Sheets:** Daily sales exports from Shopify
- **Inventory CSVs:** Stock levels per SKU updated weekly
- **Profit Margin Data:** Uploaded product master sheet with cost price and selling price

Tools and Technologies:

- **Google Data Studio (Looker Studio)**
- Calculated fields in Data Studio:
    - Gross Profit = (Selling Price – Cost Price) × Units Sold
    - Contribution % = Gross Profit / Revenue
    - Inventory Coverage = Current Stock / Average Weekly Sales

Dashboard Features:

- Filters: Product Category, Brand Line, SKU, Campaign, Date Range

- Visuals:
    - Top 10 and Bottom 10 SKUs by revenue and profit
    - Heatmap showing profit margin vs. inventory
    - Line charts for daily and weekly sales trends
    - Pie chart for revenue contribution by category
- Alerts: Conditional formatting for low-stock high-selling items

4. Results:

- Identified 12 SKUs contributing **60% of revenue** but only **35% of total SKUs**
- Flagged 18 low-margin SKUs consuming 40% of inventory space
- Detected 9 fast-selling products approaching stockout risk
- Gross Profit tracking led to product repricing and better discount strategy during campaigns
- Weekly decision-making for restocking and discounting became automated via the dashboard

5. Interpretation and Insights:

- Product-level tracking revealed major inefficiencies in space and cost usage
- High-margin low-volume items were consistently under-marketed
- The dashboard enabled better **demand-response coordination** between sales and supply chain teams
- Managers could act on underperforming SKUs weekly rather than quarterly

6. Recommendations:

- Reallocate inventory storage to high-contribution SKUs
- Discontinue or repackage slow-moving low-margin products
- Launch bundled offers for clearing older stock
- Integrate automated reorder level calculations based on sales velocity
- Add campaign tagging in sales data to analyze promotion-driven sales

7. Future Work:

- Connect the dashboard to a live inventory API for real-time stock tracking
- Include logistics data for delivery time analysis by SKU
- Layer customer review sentiment to correlate satisfaction with sales drops

8. Stakeholder Relevance:

Academic:

- A detailed example of combining finance, inventory, and sales data in a BI dashboard
- Useful in operations, retail analytics, and performance management courses

Corporate:

- Helps D2C and e-commerce firms make SKU-level decisions supported by data
- Serves as a visual planning and communication tool across sales, marketing, and supply chain