E-commerce Promo Campaign Case Study

# 📌 Summary

This case study analyzes the performance of a flash sale campaign run by a beauty company across multiple product categories and channels. The goal was to understand how different promotion types (BOGO, 25% Off, Launch Bundle), user loyalty segments (New vs. Returning), and operational factors (inventory and fulfillment) influenced revenue, conversion, and efficiency. The resulting dashboard supports data-driven decisions for marketing and operations.

# 🛑 Problem

The team lacked clear insight into which campaign types and product categories were driving the highest conversions and ROI. Additionally, there was no unified visibility into operational bottlenecks such as inventory shortages or fulfillment delays during high-volume sales.

# 📈 Need

Marketing and operations teams needed a centralized dashboard to monitor key performance metrics across campaigns, user segments, and fulfillment status. This would help inform future strategy by identifying top-performing combinations and correcting inefficiencies.

# 💡 Solution

I designed a Plotly Dash dashboard powered by a simulated dataset representing 5,000 customer interactions. The dashboard included filters for campaign type, product category, and user segment, as well as visualizations for revenue trends, fulfillment heatmaps, and promotion performance. KPI cards provide real-time summaries of conversion rate, AOV, ROAS, and inventory sell-through, giving stakeholders a comprehensive performance overview.

# 🧰 Tools Used

Python, Pandas, Plotly Dash, Figma (for wireframing), Excel/CSV for simulated data.