Business Analytics Exercise

Overview:

You are a data analyst at a company exploring the **online retail** space. Your manager wants to understand customer behavior and revenue trends using e-commerce data.

Data Overview:

You will be working with **BigQuery's public dataset**:
`bigquery-public-data.thelook_ecommerce`

- `orders` – order-level info
- `order_items` – product details for each order
- `products` – product info
- `users` – customer demographics

Getting Started:
1. Create a new account on BigQuery: https://cloud.google.com/bigquery. The account will be free with no credit card required, and will have available credits to run queries.
2. Set up access to https://cloud.google.com/bigquery/public-data

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Tasks to complete

Part 1 – SQL Querying

Write SQL queries in BigQuery to answer:

1. **Monthly Revenue Trend**
   Return each month and the total revenue ordered by month.
2. **Top 5 Products by Revenue**
   List product names and total revenue, highest first.
3. **Customer Lifetime Value**
   Show each customer's total spend, ordered from highest to lowest.
4. **Repeat Purchase Rate**
   Percentage of customers with more than 1 order.
5. **Top Categories in Last Quarter**
   List the top 3 product categories by revenue in the last 3 months in the dataset.
6. **Top 10 Customers by Average Order Price**
   The store's top 10 customers with the highest average price per order

Part 2 – Analytical Analysis

Based on the data:

- Describe 2 patterns or trends you notice in **monthly revenue**.
- Identify which products/categories are key revenue drivers.
- Note any commonalities among top spending customers

Part 3 – Visualization

Create a dashboard with the following:

- A **line chart** of monthly revenue.
- A **bar chart** of top product categories in the last quarter.
- 2-3 additional visualizations of your choice that show data insights

We recommend that you use Looker Studio to build the dashboard, but you can also use Google Sheets or the dashboard tool of your choice.

Part 4 – Business Insights

Based on your findings:

- Recommend **two actions** to increase revenue.
- Suggest **one marketing opportunity** for high-value customers.
- Mention **one data gap** you'd like to fill before making a decision.