Green Cart Ltd. – Q2 Sales & Customer Insights Report

1. Introduction

Green Cart Ltd. is a growing UK-based e-commerce company focused on eco-friendly household products. As part of the Q2 performance review, the Data & Insights team has analysed sales, product, and customer datasets to understand performance trends and customer behaviour.

This report provides insights into:
- Weekly and regional revenue trends
- Product category performance
- Customer loyalty and signup behaviour
- Delivery issues and their patterns
- Actionable recommendations for marketing and operations

2. Data Cleaning Summary

We cleaned and prepared three datasets: sales_data.csv, product_info.csv, and customer_info.csv.

- Key Cleaning Steps:
- Standardised text fields: delivery_status, payment_method, loyalty_tier, etc.
- Date conversions using pd.to_datetime() for order_date, signup_date, launch_date.
- Filled missing values (e.g., discount_applied = 0.0, categories = 'Unknown').
- Removed duplicates based on order_id.
- Validated numeric fields to ensure non-negative values.

3. Feature Engineering Summary
We created the following new columns to enrich analysis:

Feature	Description
revenue	quantity * unit_price * (1 - discount_applied)

order_week	ISO week of the order date
price_band	Categorised unit price: Low (<£15), Medium (£15–30), High (>£30)
days_to_order	Days between product launch and order
email_domain	Extracted from the customer's email address
is_late	Boolean flag for delayed deliveries

4. Key Findings & Trends

• Revenue peaked in Weeks 22–24, driven by strong sales in Kitchen and Personal Care categories.

• High-value orders (>£30) are more likely to face delivery delays, especially in the North region.

• Gold loyalty tier customers contribute the highest revenue, but Silver has more orders.

5. Business Question Answers

1. 1. Which product categories drive the most revenue, and in which regions?

Top Category: Personal Care. Top Region: South.

2. 2. Do discounts lead to more items sold?

Yes. 10–25% discounts saw higher average quantities. Very high discounts didn't show much lift.

3. 3. Which loyalty tier generates the most value?

Gold tier generates highest revenue. Silver has higher volume.

4. 4. Are certain regions struggling with delivery delays?

Yes. North region has most delays, especially on high-value items.

5. 5. Do customer signup patterns influence purchasing activity?

Yes. Revenue spikes often follow signup peaks in April and June.

6. Recommendations

1. Promote high-performing categories like Personal Care and Kitchen more in the South region.

2. Improve delivery logistics in North region, especially for high-value products.

3. Target Gold and Silver loyalty tiers with personalised offers — they bring most revenue.

7. Data Issues or Risks

• Inconsistent casing in delivery_status and loyalty_tier was observed.

• Suggested fix: Implement dropdown validations or formatting rules in the data entry pipeline.