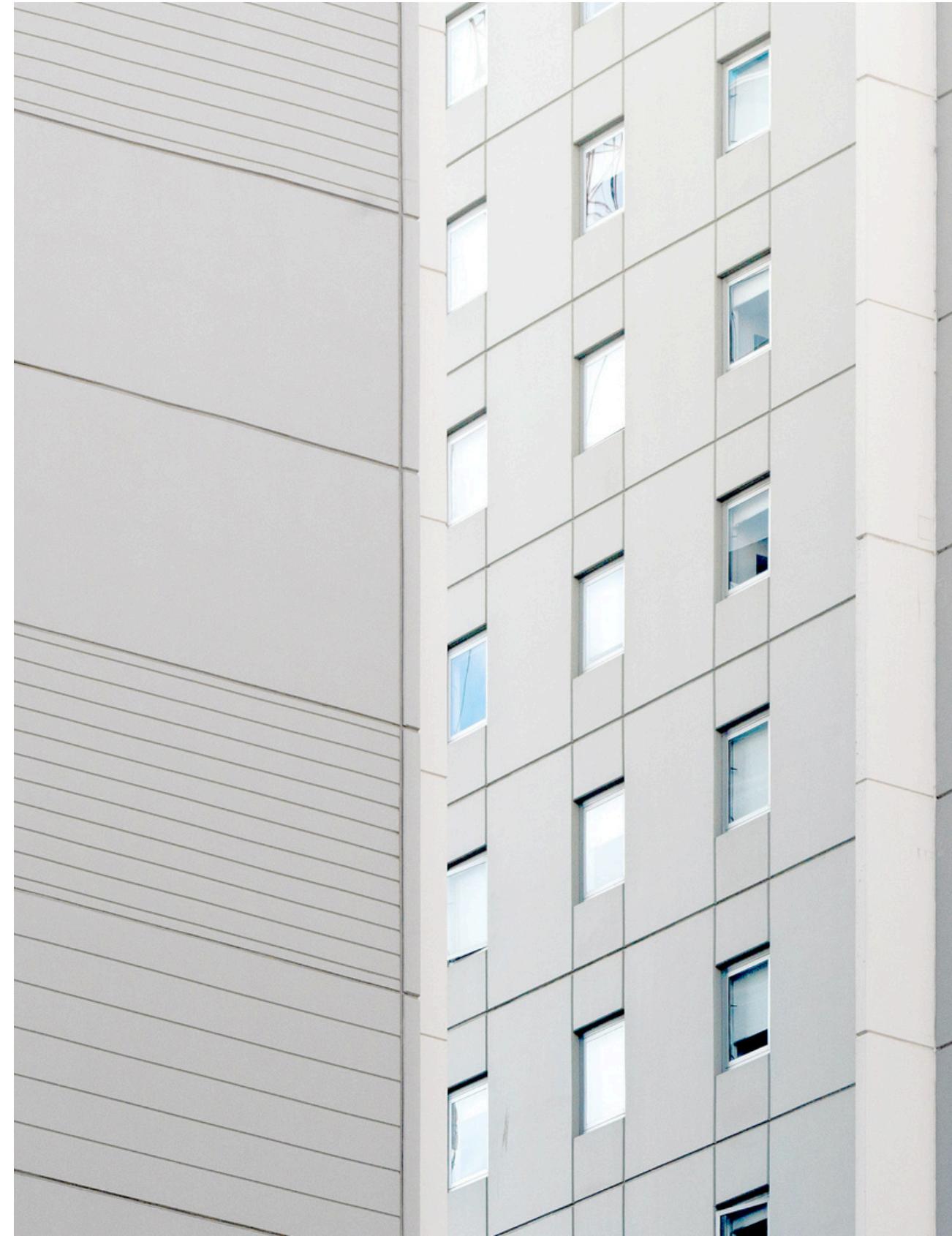


April 27, 2025

Modecraft Retail Data Visualization & Analysis

Shuzishan Wang, Crystal Chen, Xiaoquan Shang

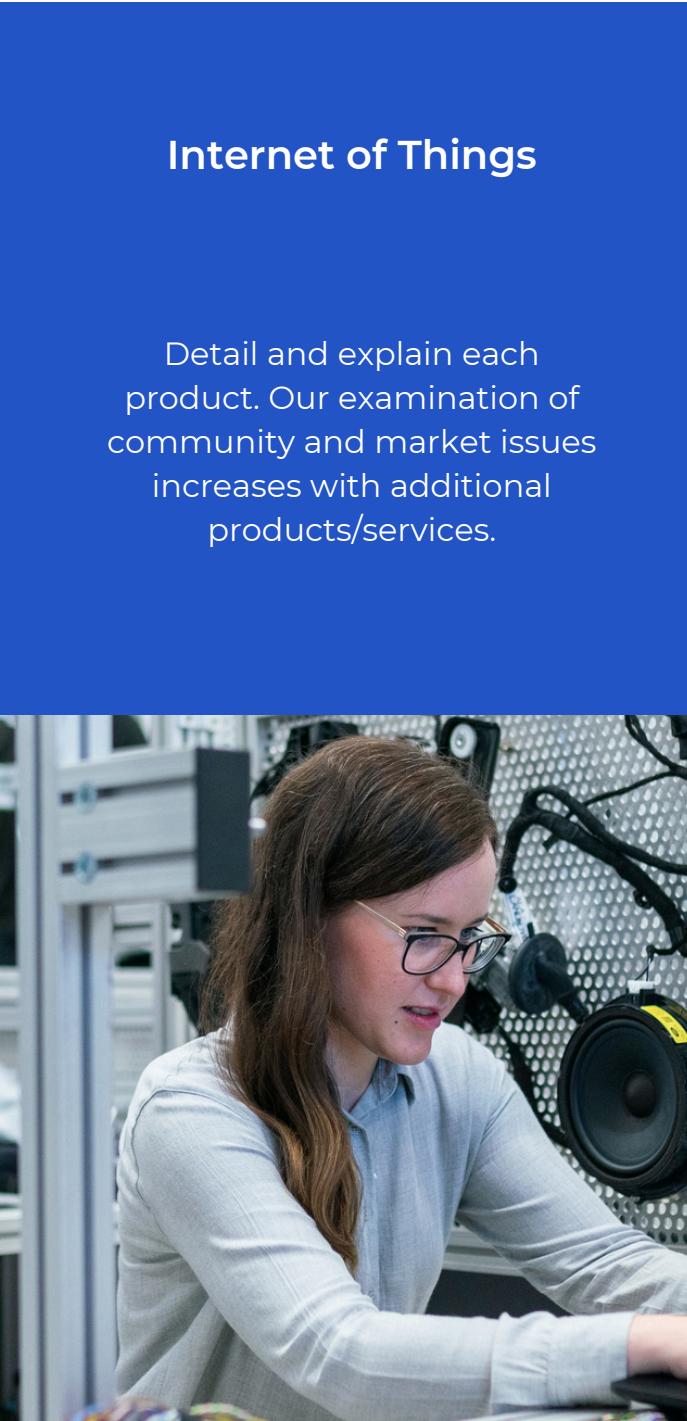


Agenda

- Data Visualization & Analysis
- Questions & Results
- Recommdations

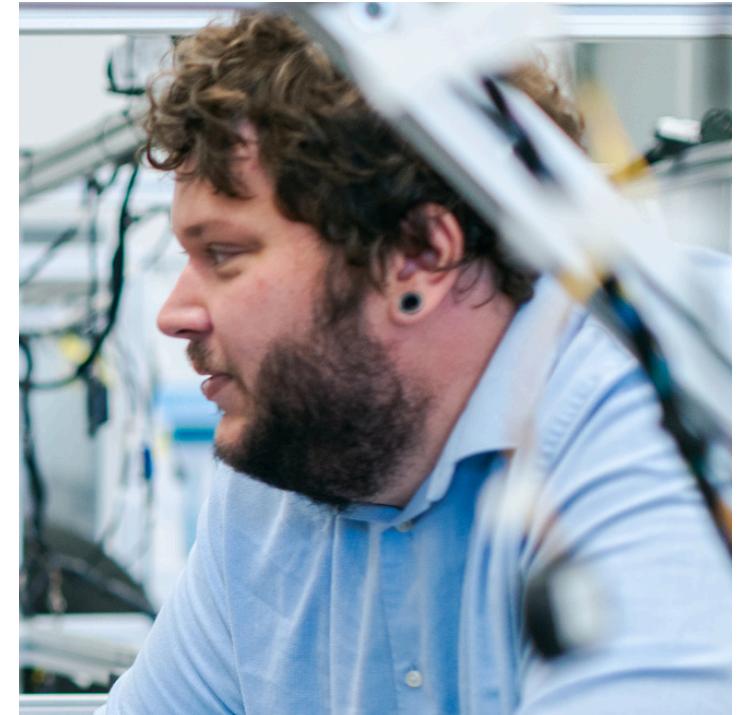
Data Overview

- **Introduction to Modecraft:**
global e-commerce retailer, diverse product lines
- **500,000+ orders processed worldwide**
- **Objective:**
Use data to drive strategic decisions
for future growth



Internet of Things

Detail and explain each product. Our examination of community and market issues increases with additional products/services.



Smart Home Platform

Our alternate product category is available. Our products must work together to solve social and economic issues.

Key Trends



Selected Month Analysis

- Products that sold the most
- Products that sold the least
- Products that generated the most revenue
- Products that generated the least revenue
- Customers who bought the most
- Regions that earned the most money

Specific product Analysis

- Quantity Sold by Country
- Quantity Sold by Month
- Quantity Sold by Time of Day
- Quantity Sold by Day of Week
- Total Quantity Sold
- Total Revenue Generated

Products that sold the most

Top-Selling Products

Note: Only valid sales are considered. Free items and returns are excluded.

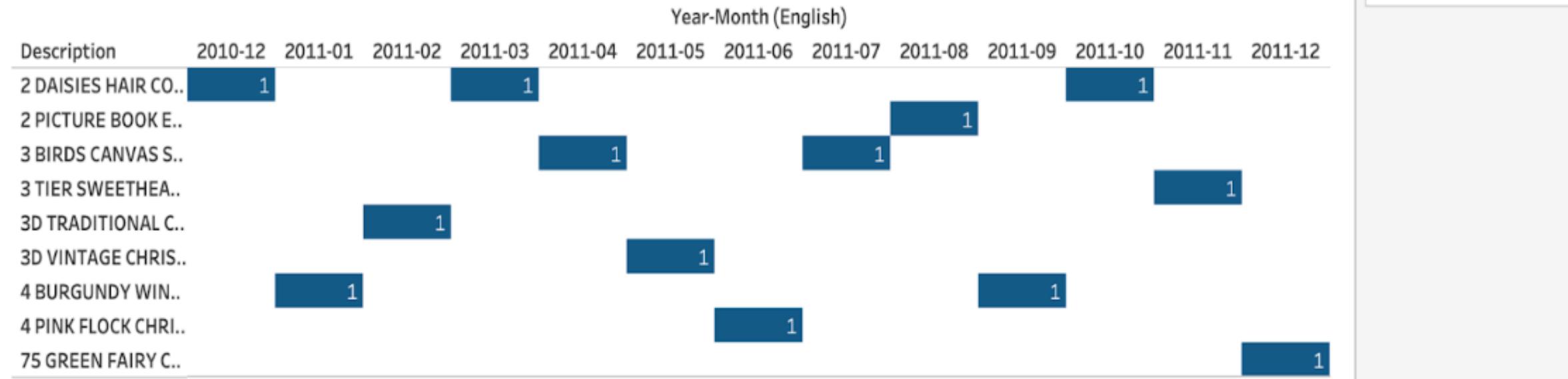


- Top sellers: "**Medium Ceramic Top Storage Jar**" and "**Paper craft.**"
- Sales peaked in **December** during holidays.
- Prioritize stocking and promotion before peak season.

Products that sold the least

Lowest-Selling Products

Note: Only valid sales are considered. Free items and returns are excluded.



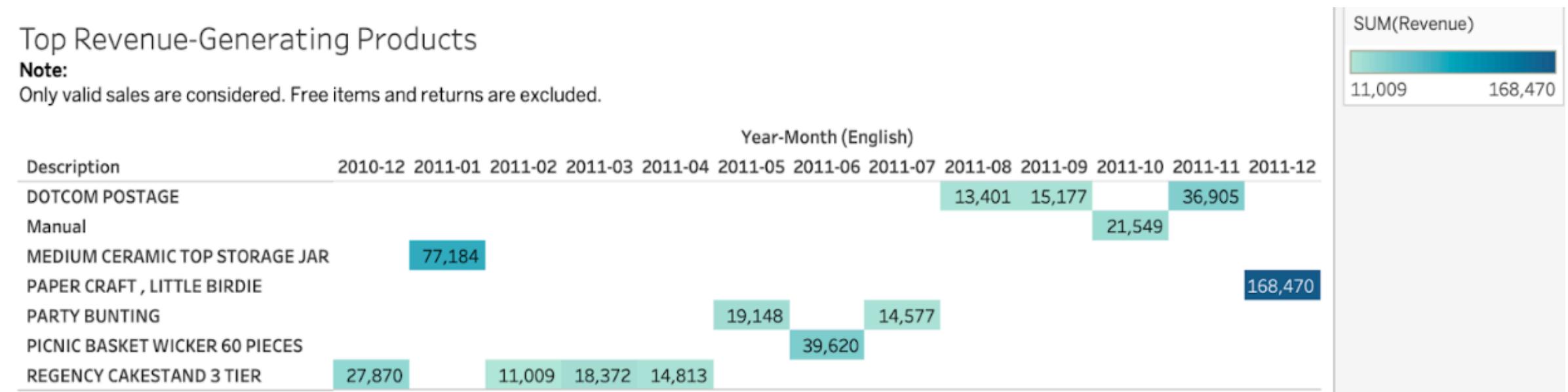
- Some products sold only **one unit across months.**
- Mostly **decorations, Christmas items, and small home goods.**
- Very low market demand and inefficient inventory use.

Products that generated the most revenue

Top Revenue-Generating Products

Note:

Only valid sales are considered. Free items and returns are excluded.

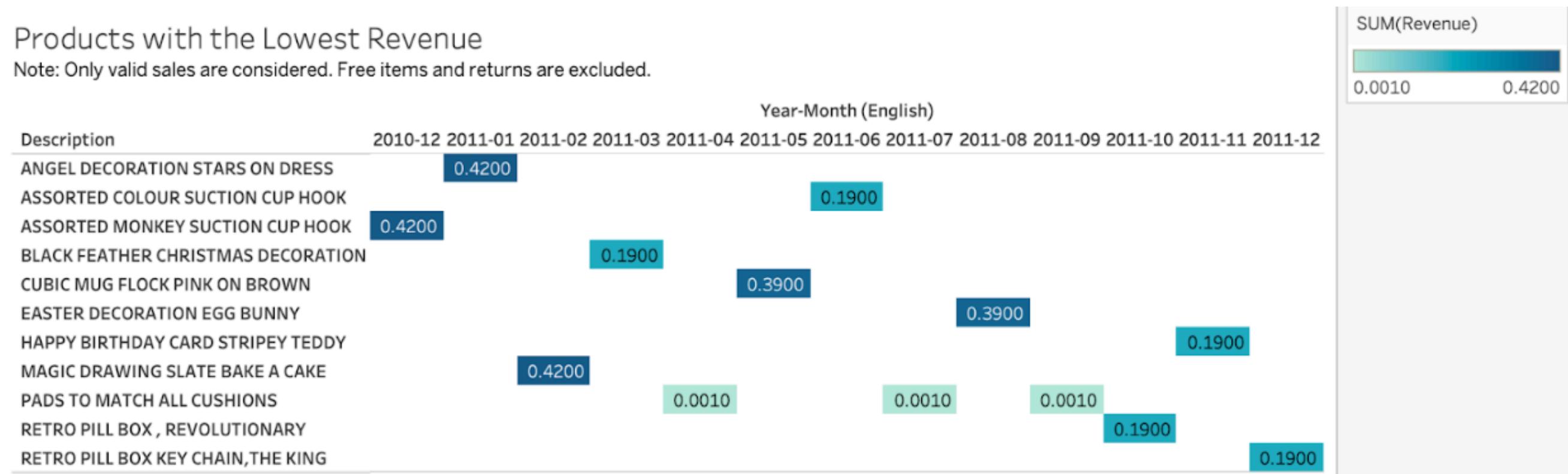


- Top products: "**Paper Craft**" and "**Storage Jar.**"
- Revenue peaked in **December**, strong seasonality.
- Stock and promote best-sellers early.
- Expand high-performing product categories.

Products that generated the least revenue

Products with the Lowest Revenue

Note: Only valid sales are considered. Free items and returns are excluded.



- Extremely low revenue across months.
- Mostly **decorations, small home accessories, and gift items.**
- Phase out or reposition underperforming products.

Customers who bought the most

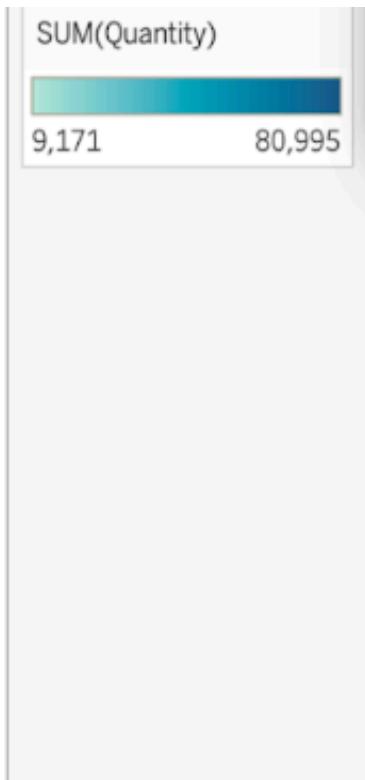
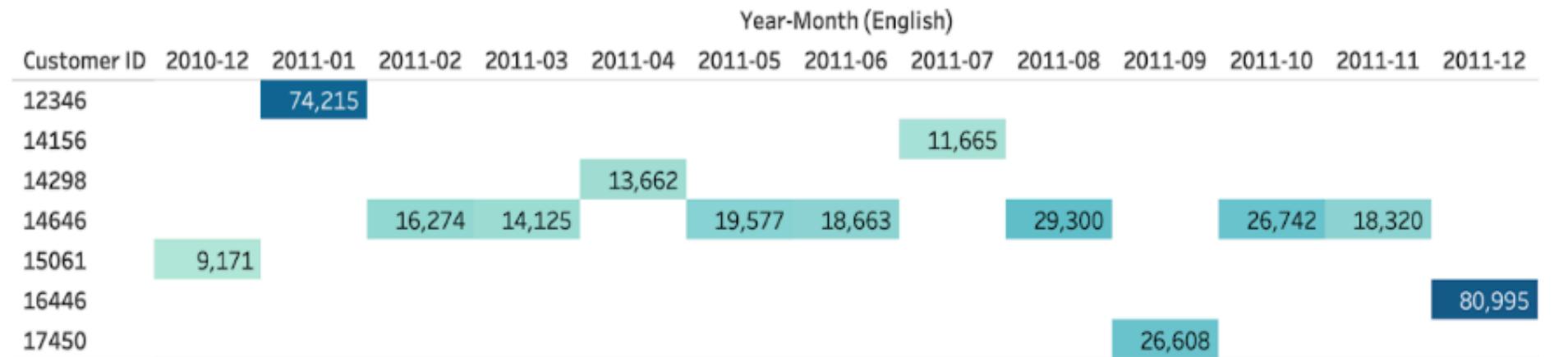
Top Purchasing Customers

Note:

Only valid sales with recorded Customer IDs are considered.

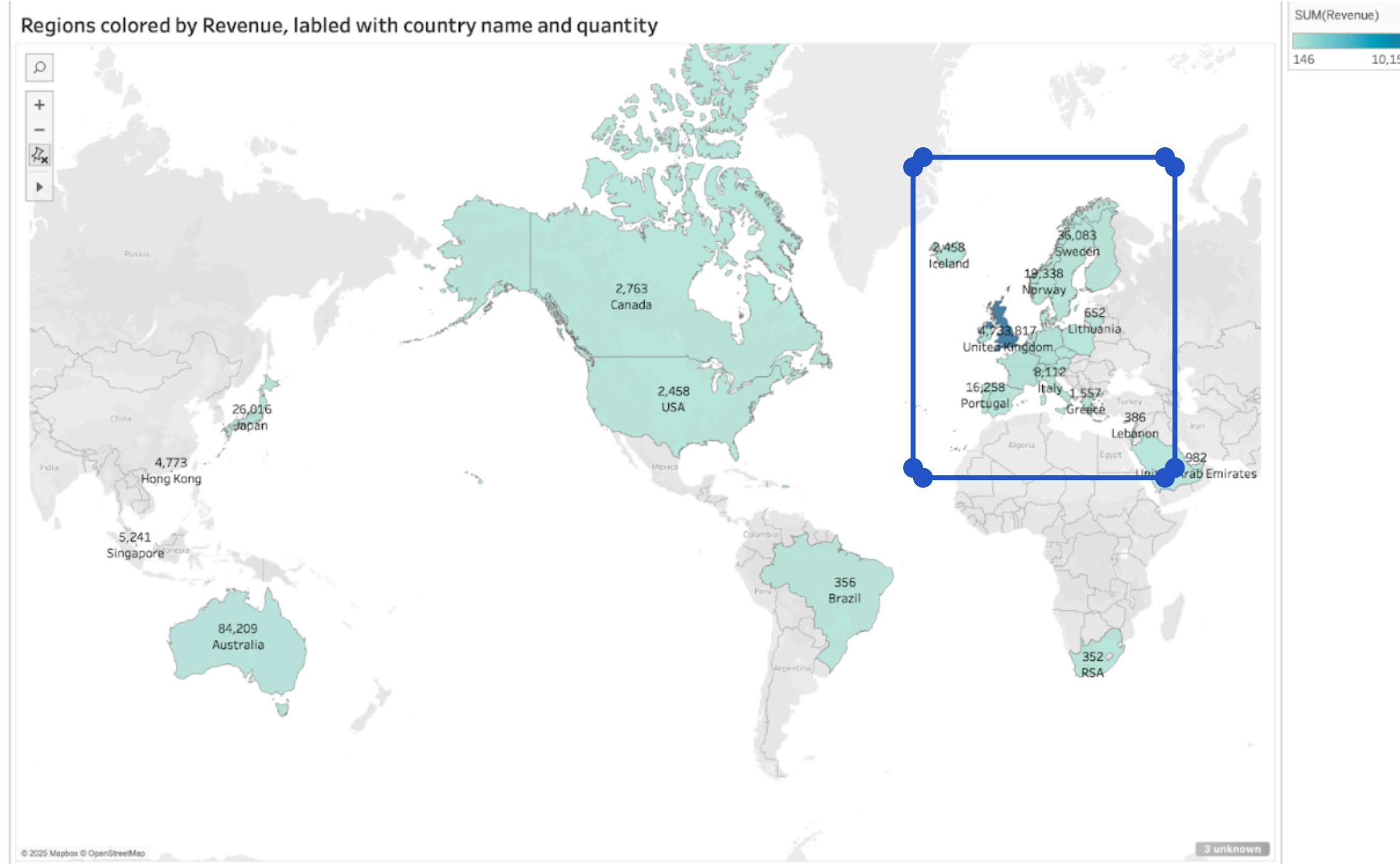
Transactions with missing Customer IDs (Null) have been excluded to ensure customer-level accuracy.

Quantity is based on the sum of items purchased per month.



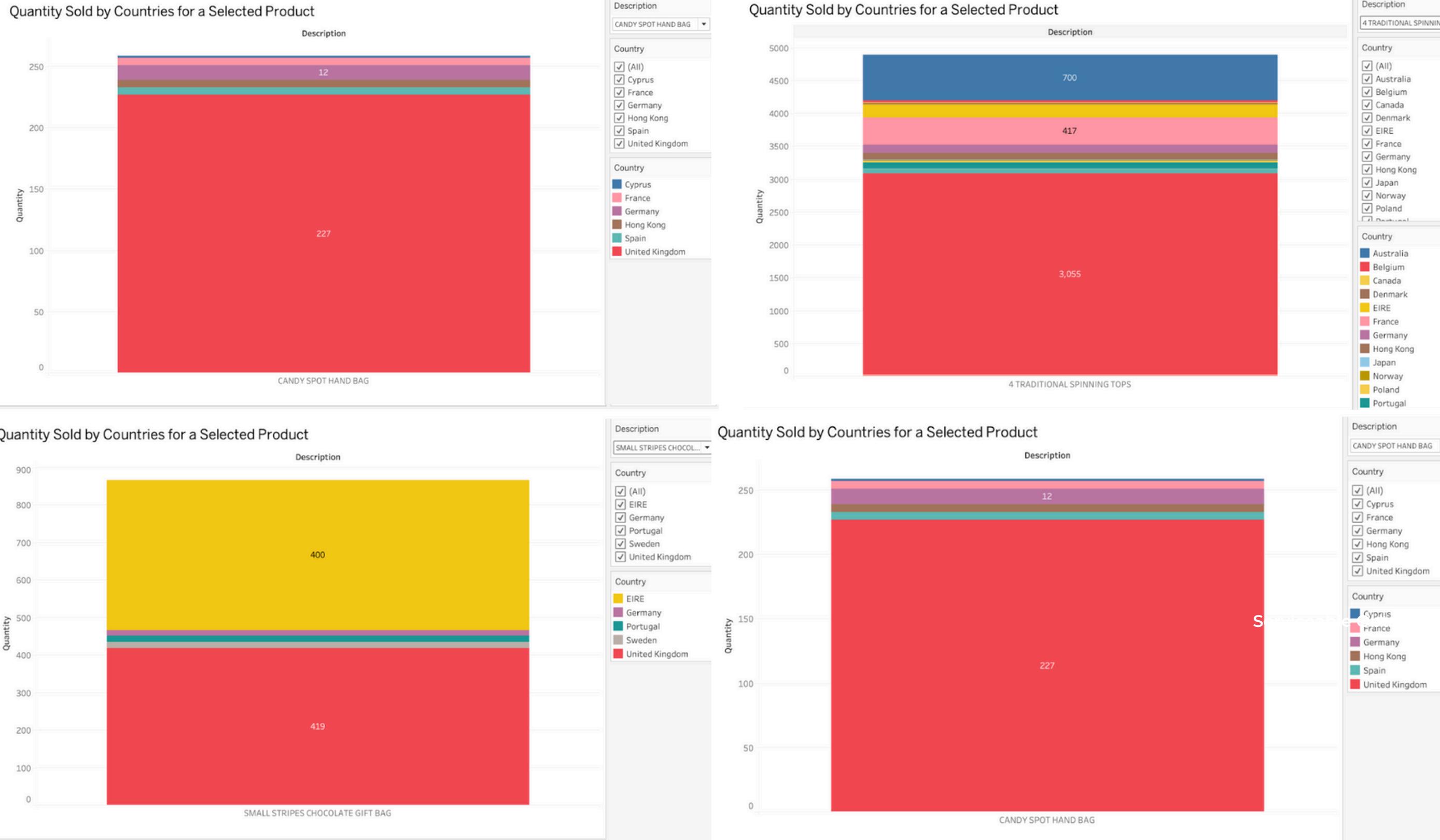
- A few customers made **large volume purchases.**
- Top buyers contributed significantly to total sales.
- Peak purchasing months: **January, August, November, December.**
- Focus on loyalty programs and targeted marketing.

Regions that earned the most money



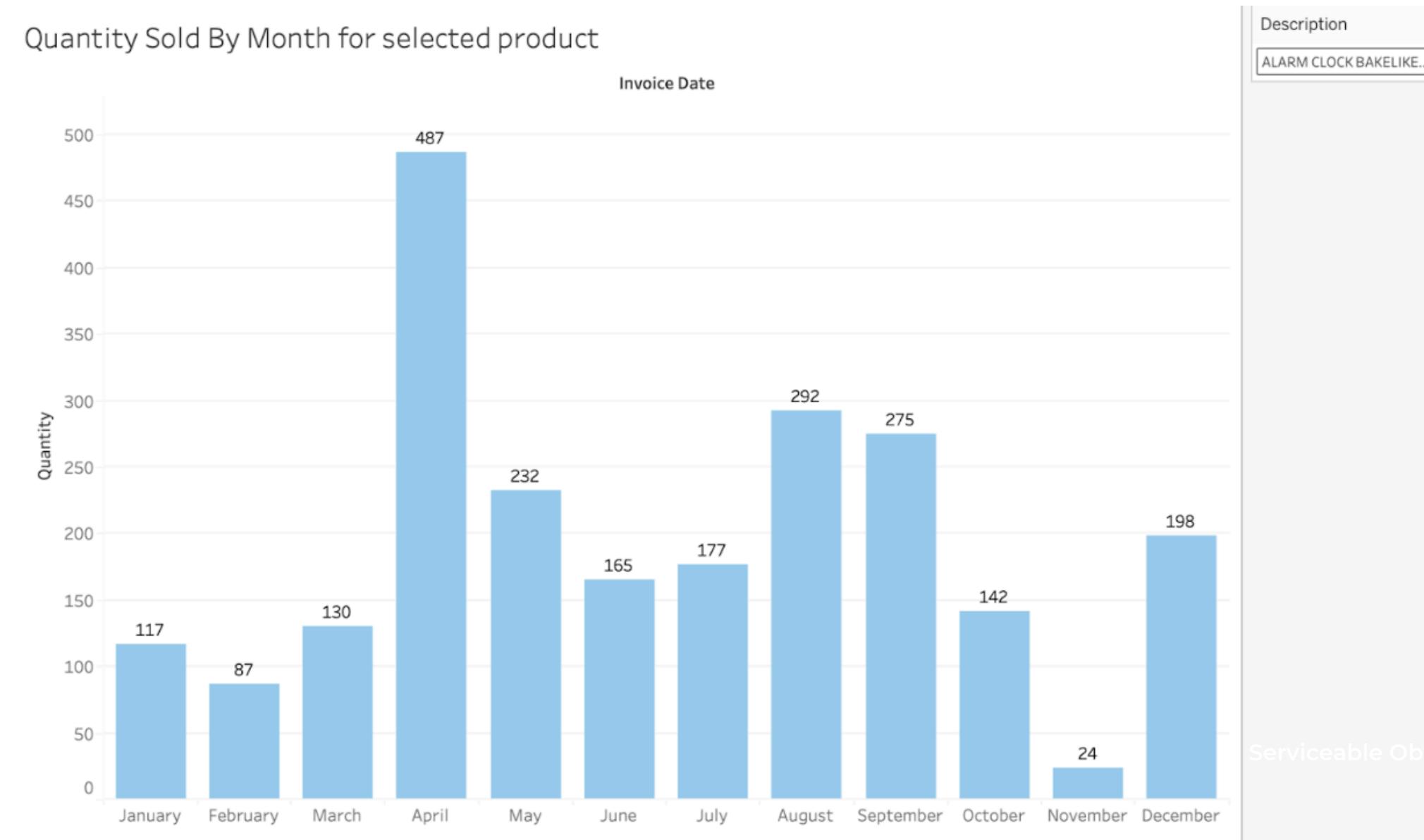
United Kingdom, Australia, and Sweden generated the highest revenue.

Quantity Sold by Countries for a Selected Product



- Products grouped into **fashion, gifts, toys, and home decor.**
- **United Kingdom** shows the highest demand across all categories.
- Tailor marketing by category and season.
- Toys offer potential for international expansion.

Quantity Sold By Month for selected product

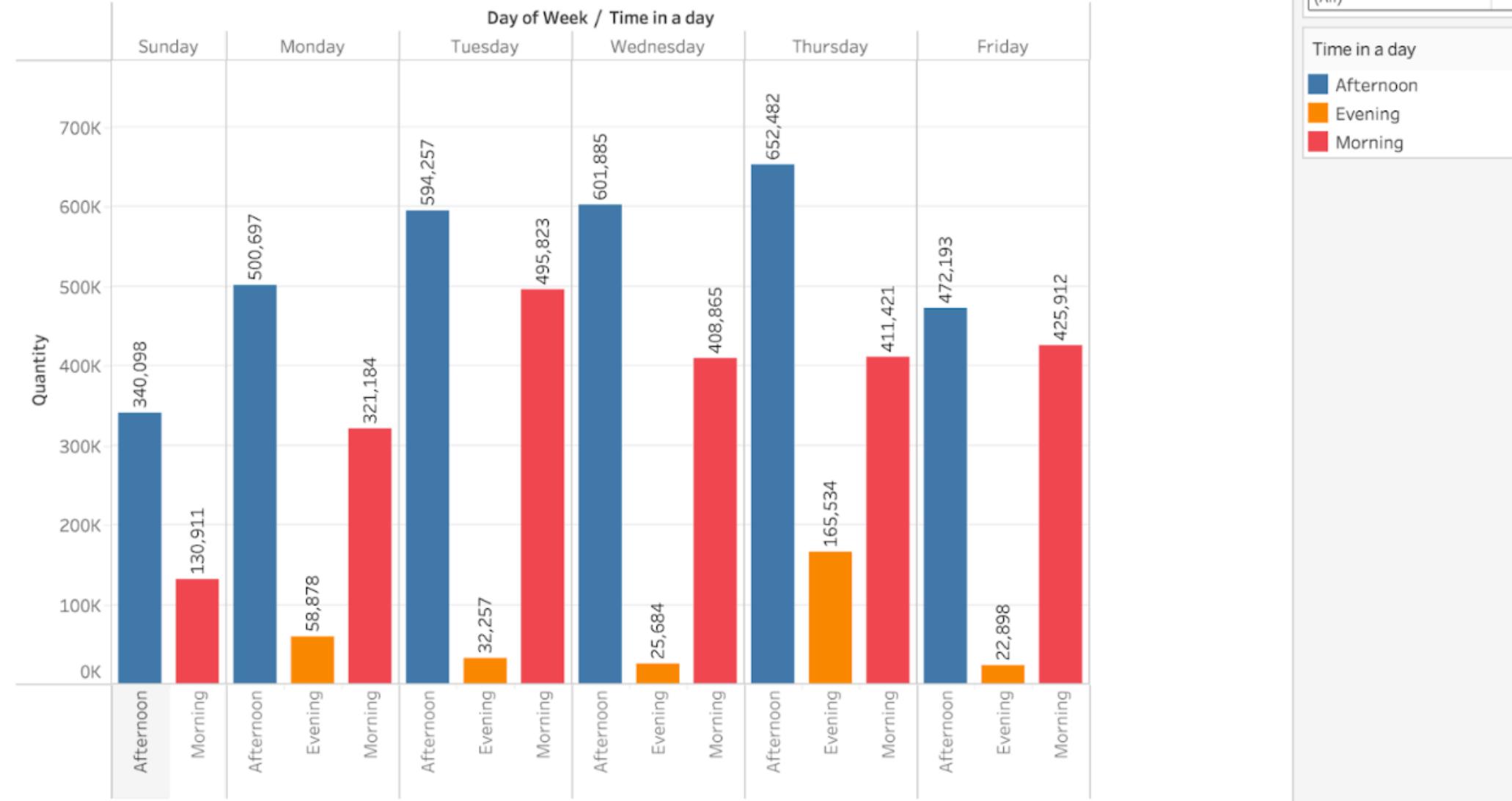


Overall sales show strong seasonality, with peaks in **April and late summer**.

Plan inventory boosts before peak months and promote during slow periods like **February and November**.

Quantity Sold by Time of Day

Quantity Sold by Time of Day



- **Afternoon** has the highest sales across weekdays.
- **Thursday afternoon** shows the peak quantity.
- Morning sales are steady but lower than afternoon.
- **Evening** sales are minimal throughout the week.
- Focus promotions and staffing on afternoon peak hours.

Questions & Results

Is there any seasonality in purchases for certain products?

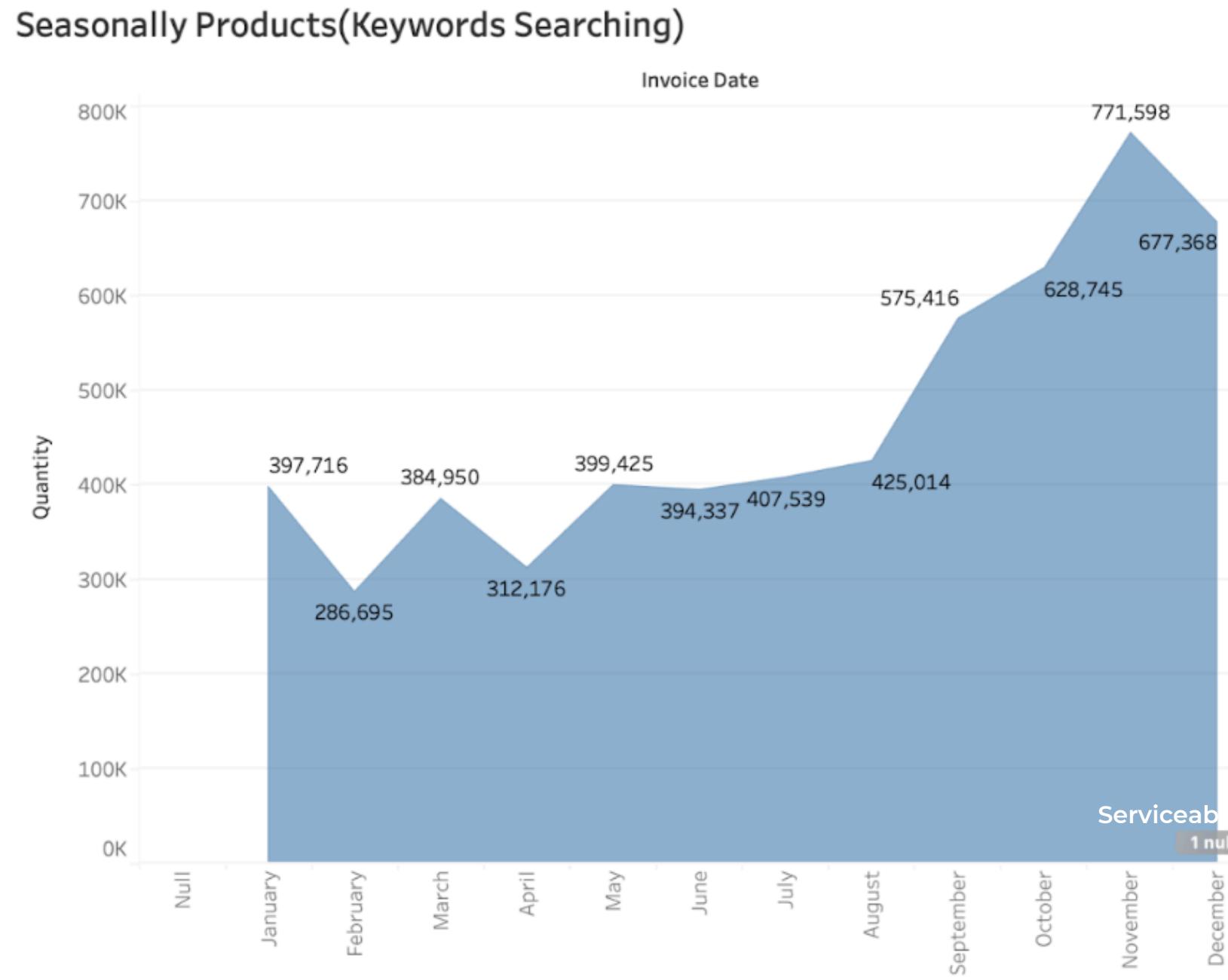
What trends do you notice for the website with respect to time?

What trends do we notice in the basket size (total items in one receipt)?

What are the peak sales periods for the business?



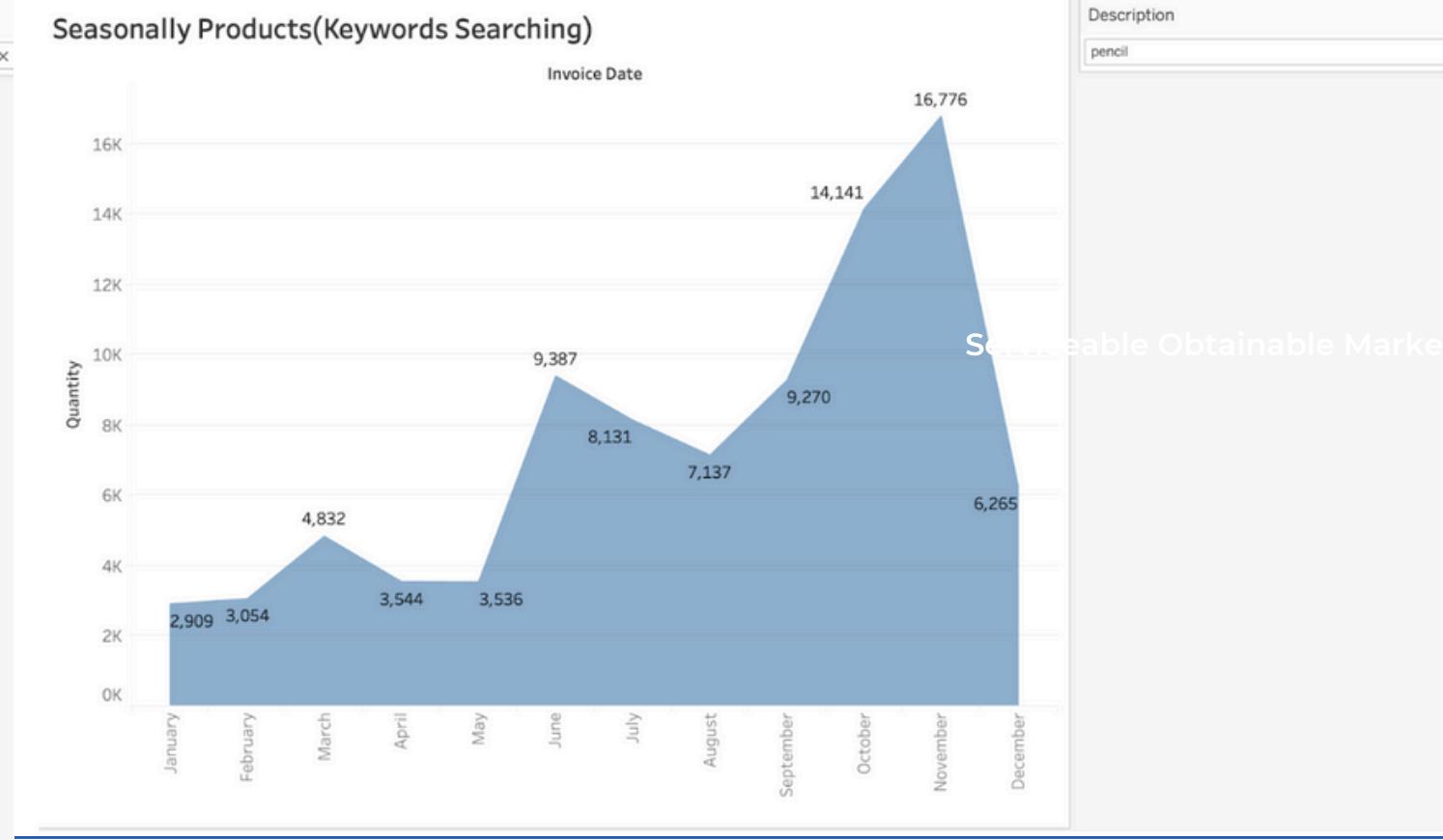
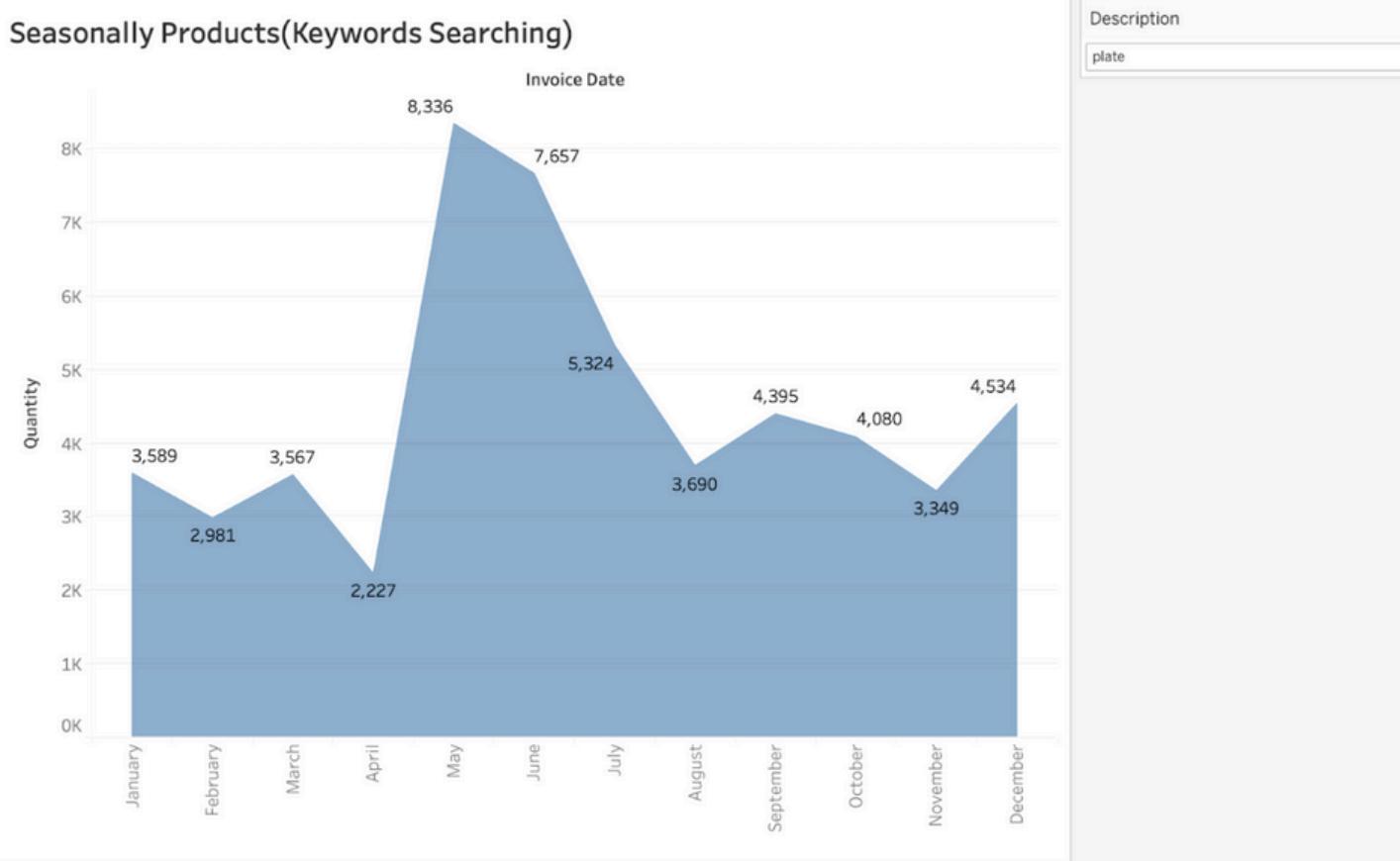
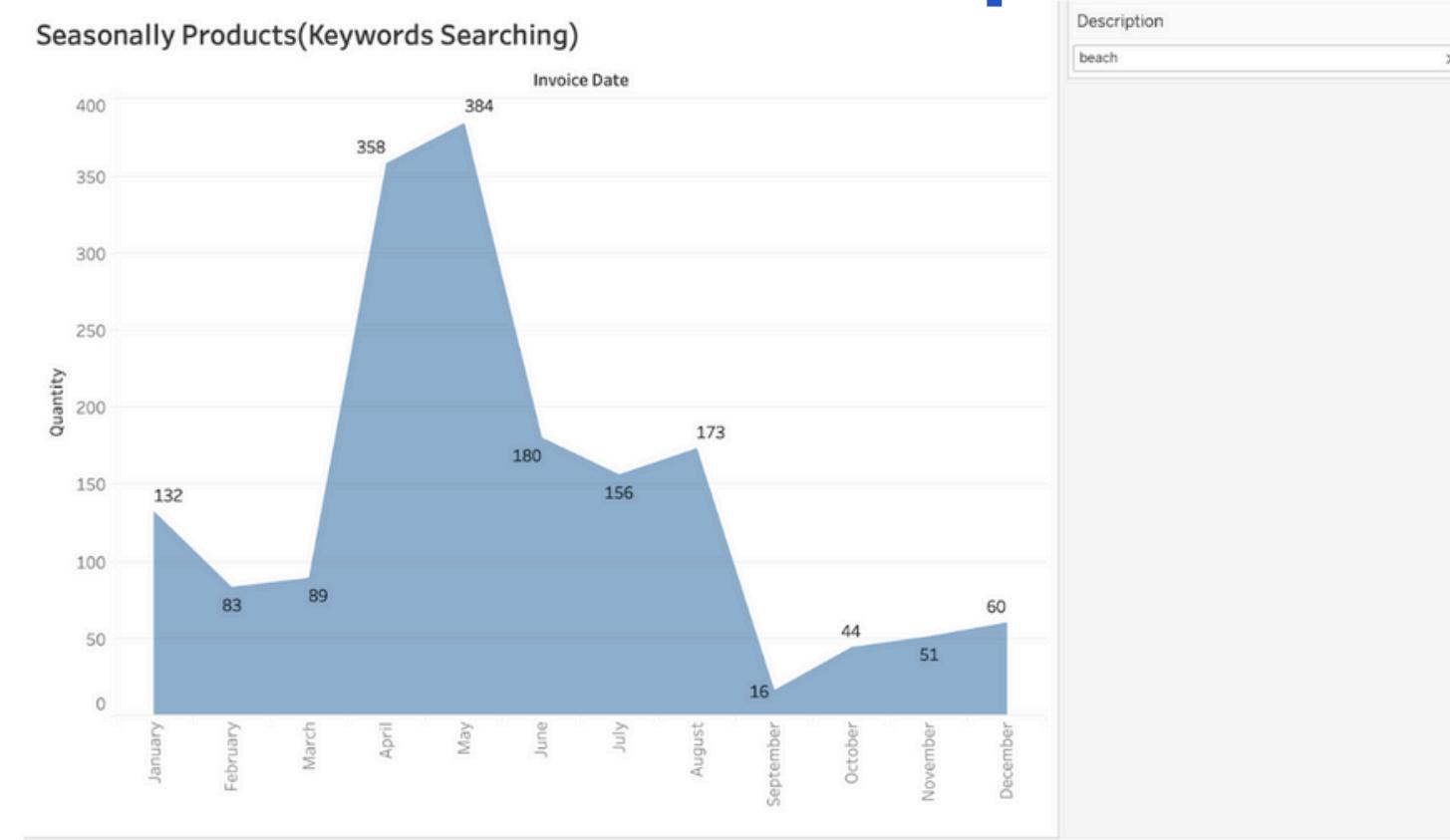
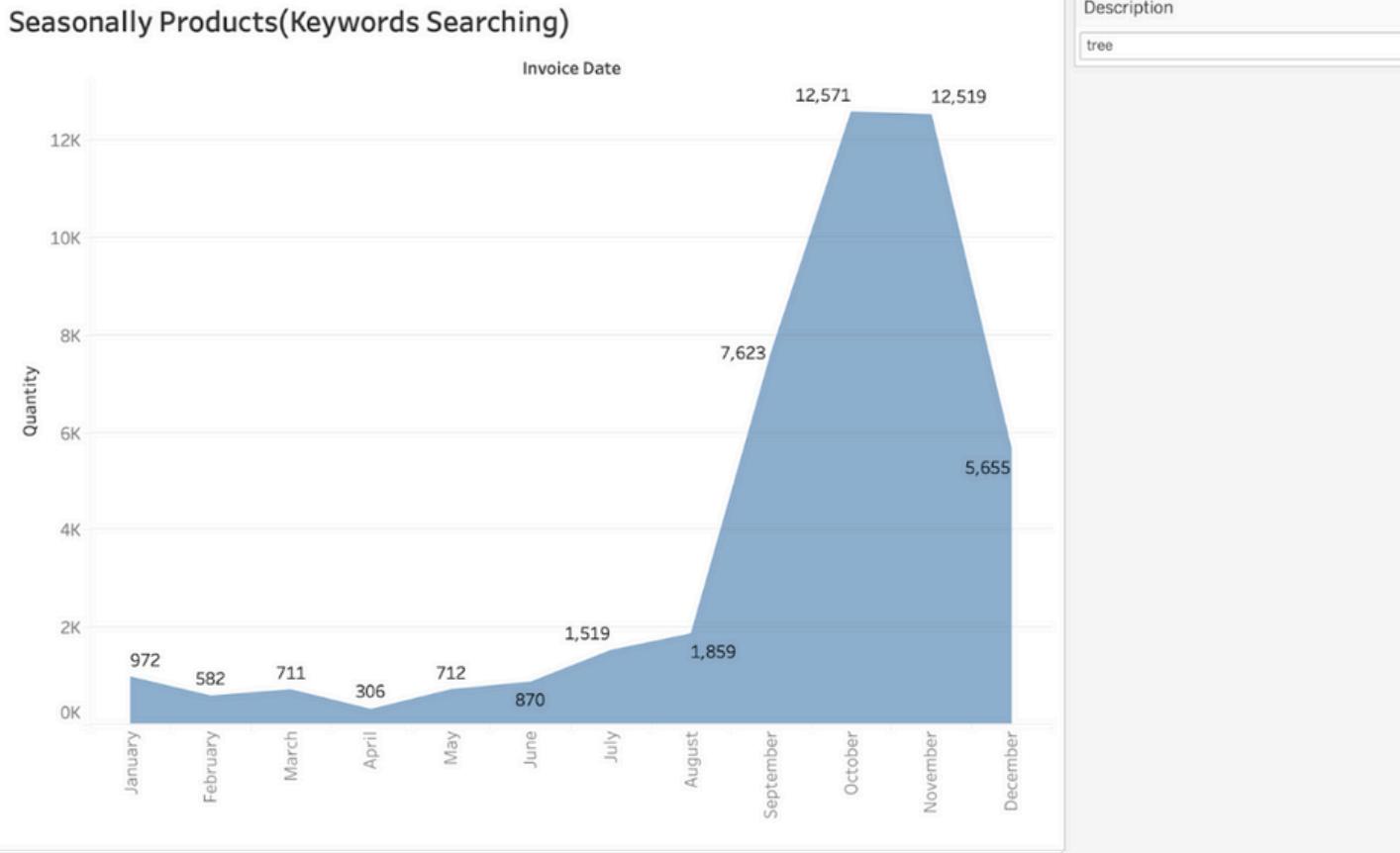
Is there any seasonality in purchases for certain products?



Yes, there is clear seasonality in purchases for certain products.

The overall sales across all products show a steady increase toward the end of the year, peaking in **October** and **November**.

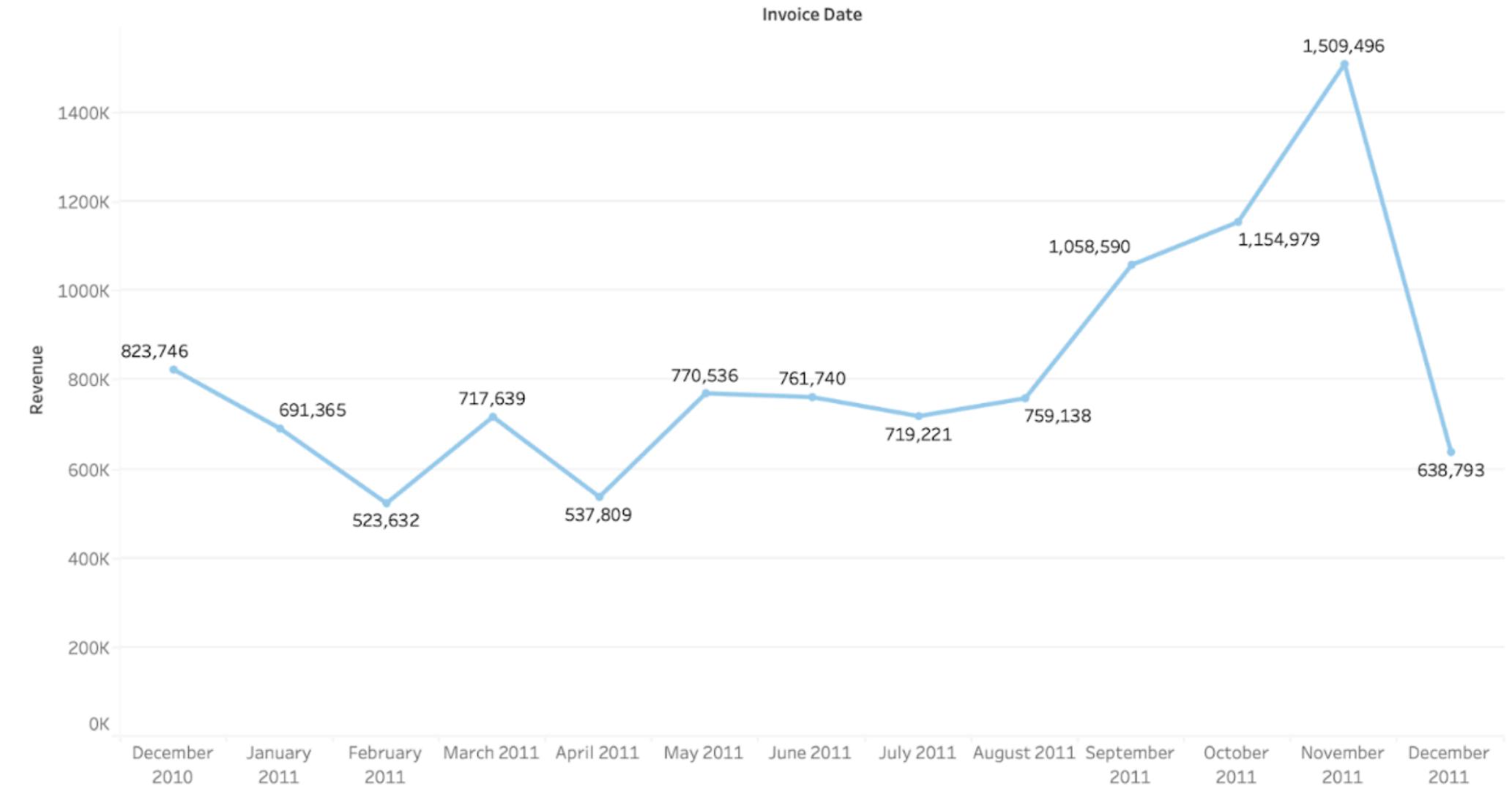
Is there any seasonality in purchases for certain products?



- Holiday products peak in fall,
- Outdoor and kitchenware sales rise in spring and summer
- Stationery demand surges during back-to-school months.
- Product category and timing strongly influence purchasing behavior.

What trends do you notice for the website with respect to time?

Average Basket Size Over Time

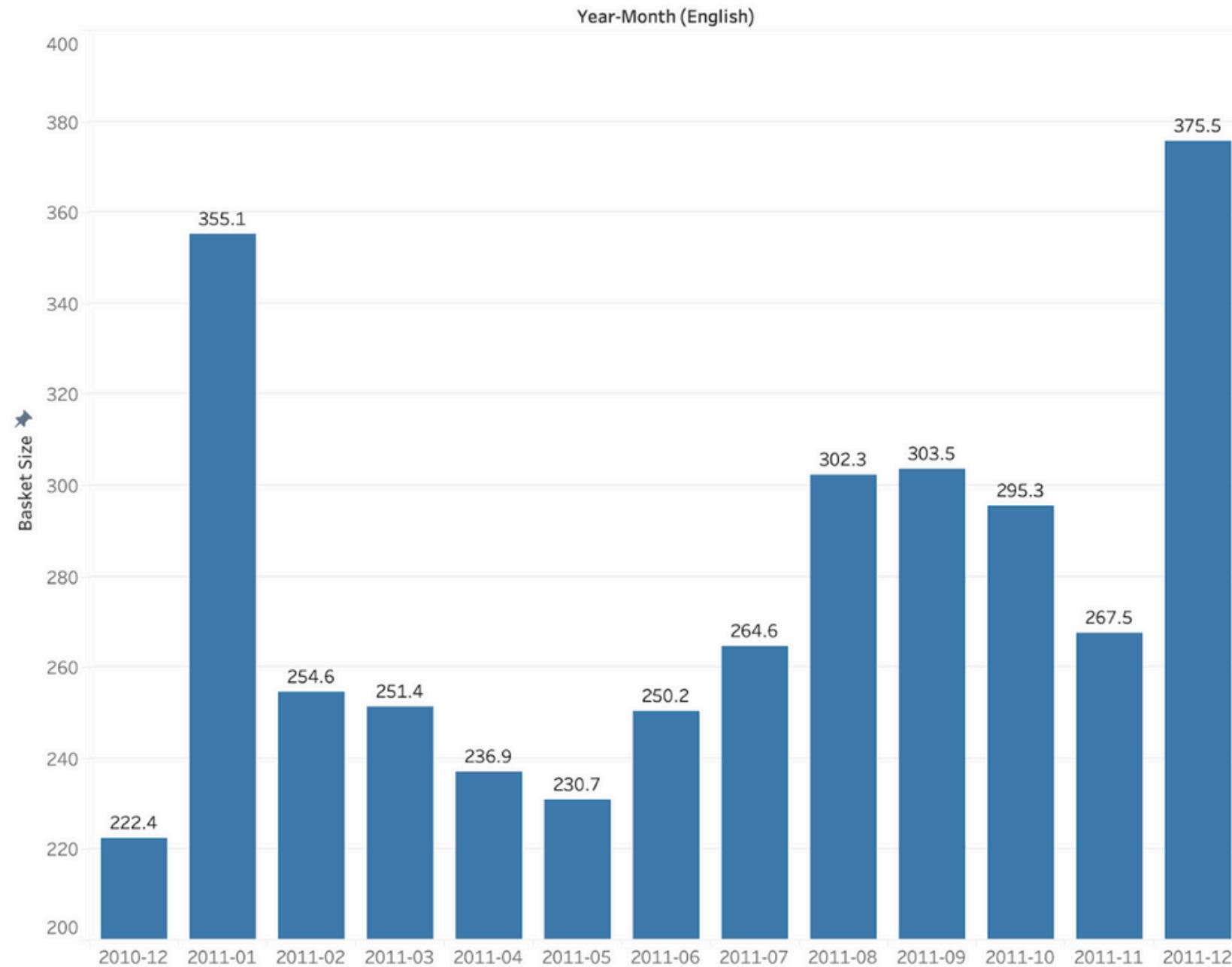


The website's average basket size increased significantly from **August to November 2011**.

Earlier months were more volatile, but late 2011 shows strong growth, likely driven by holiday shopping and promotions.

What trends do we notice in the basket size (total items in one receipt)?

Trends in Basket Size Over Time

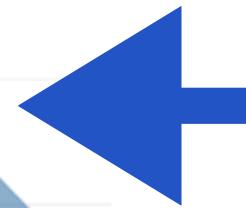
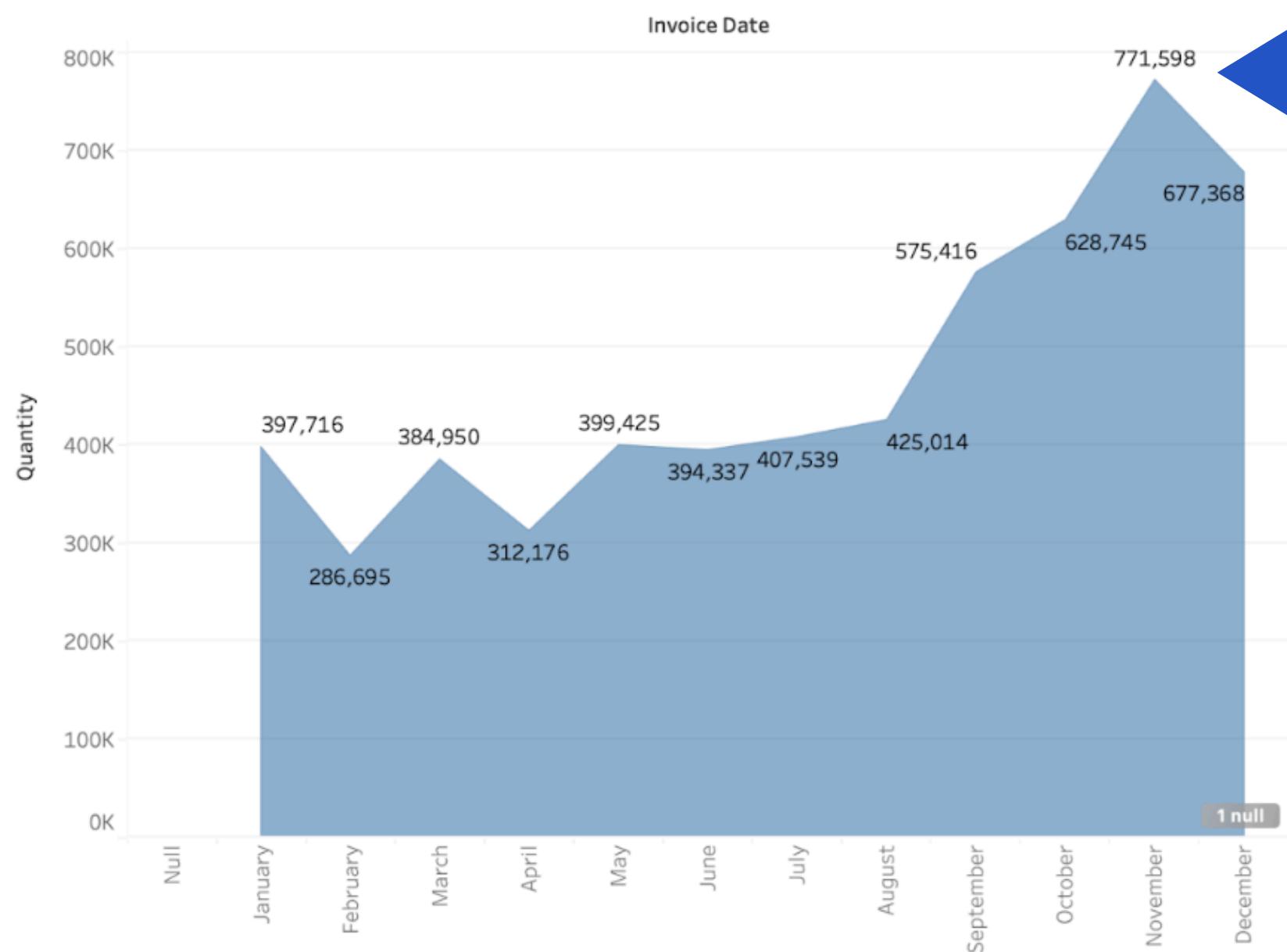


Basket size peaked in **January** and **December 2011**, with a sharp rise at year-end.

Customers tend to purchase more items per transaction during **holiday seasons**.

What are the peak sales periods for the business?

Seasonally Products(Keywords Searching)



Peak sales occur from **September to November**, with **October** being the highest.

This trend reflects strong **holiday-driven** seasonal demand.

Recommendations

- Inventor Management & Seasonal Planning
- Product Strategy
- Customer Segmentation & Loyalty Programs
- Time-Based Marketing Optimization
- Geographical Strategy
- Website and User Experience Enhancements



Inventory Management & Seasonal Planning

- Boost inventory before September–November peak.
- Manage stock by product category and season.
- Clear low-demand gifts and decorations.

Product Strategy

- Promote top-selling products heavily.
- Expand successful categories (e.g., toys).
- Phase out or bundle low-revenue items.

Customer Segmentation & Loyalty

- Launch VIP programs for top customers.
- Increase basket size through bundling deals.
- Create holiday-exclusive product bundles.

Time-Based Marketing Optimization

- Focus promotions on afternoon hours (especially Thursdays).
- Run flash sales during slow periods (mornings, evenings).

Geographical Strategy

- Invest in top regions: UK, Australia, Sweden.
- Reassess strategies for low-performing regions.

Website and User Experience

- Improve cross-sell and upsell opportunities.
- Enhance category navigation and search functions.
- Add personalized product recommendations.

Thank You



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