

E-Commerce Purchase Data Analysis – Final Project Summary

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Tools and Technologies

- **Software:** Jupyter Notebook, GitHub
- **Python Libraries:** pandas, numpy, matplotlib, seaborn

Business Questions Explored

1. What times of year generate the highest sales volumes?
2. Which product categories are most frequently purchased?
3. Which products contribute the most to total revenue?
4. Which countries account for the highest sales?

Key Insights

- **Seasonal Trends:**
November reported the highest revenue (~\$1.16 million), likely due to holiday shopping patterns.
- **Top Products by Quantity:**
PAPER CRAFT, *LITTLE BIRDIE* (80,995 units) and *MEDIUM CERAMIC TOP STORAGE JAR* (77,916 units) led in volume sold.
- **Top Products by Revenue:**
PAPER CRAFT, *LITTLE BIRDIE* (\$168,469.60) and *REGENCY CAKESTAND 3 TIER* (\$142,592.95) generated the most revenue.
- **Top Performing Countries:**
The *United Kingdom* led with \$7.3 million in revenue, followed by *Netherlands* and *EIRE*, indicating strong market potential across Europe.

Strategic Recommendations

- Increase inventory and marketing initiatives during Q4, particularly in November.
- Prioritize high-performing products in promotional campaigns.
- Maintain focus on UK operations while expanding into high-revenue European markets.

Future Analysis Opportunities

- Segment customers by geography and purchasing behavior.
- Forecast monthly revenue trends using time-series models.
- Analyze return rates and customer lifetime value.