

onlineRetail

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Original Data

<https://archive.ics.uci.edu/ml/datasets/Online+Retail+II>

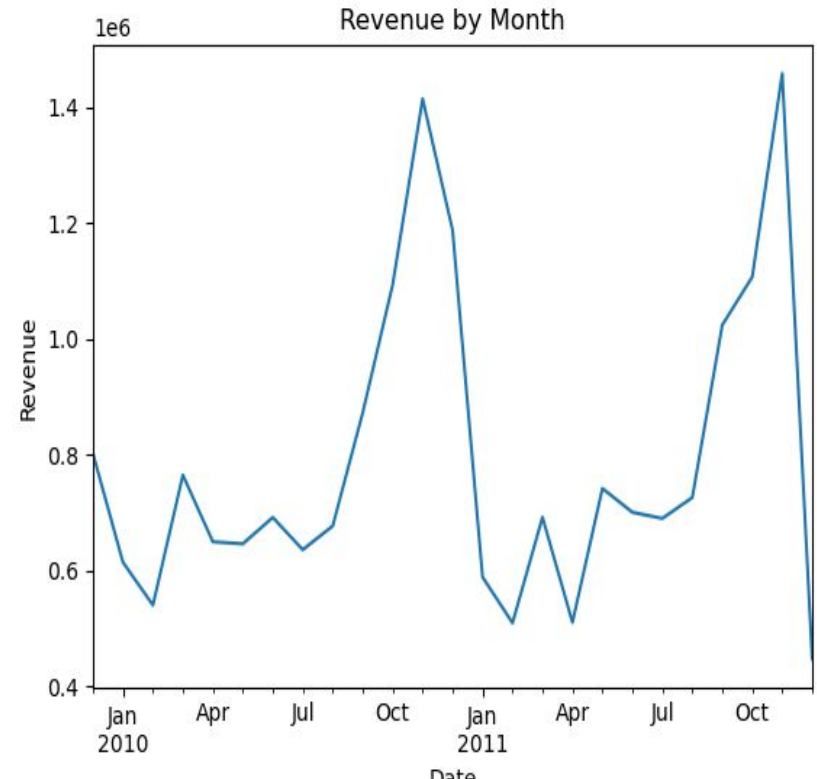
- Large Dataset (1067371 Rows)
- 8 Features
- Messy and Missing Data

Business Concerns

- Total Revenue
- Sales by Location
- Sales Over Time
- Customer Retention
- Most Common Items
- Sales by Item
- Items Purchased Together

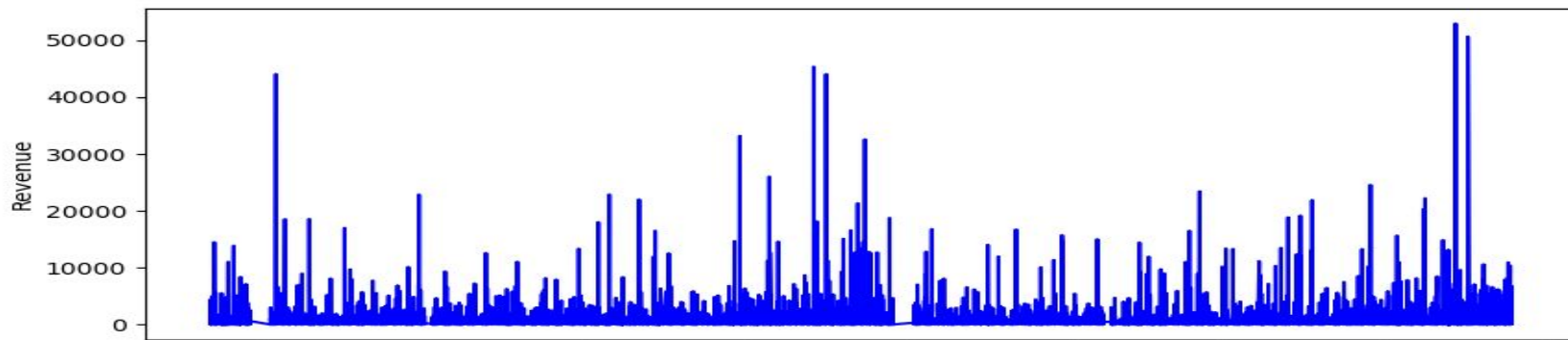
Total Revenue

- Only revenue can be ascertained as we have no COGS data
- Peaks near the ends of the year
- Total revenue is roughly 21,000,000 pound Sterling

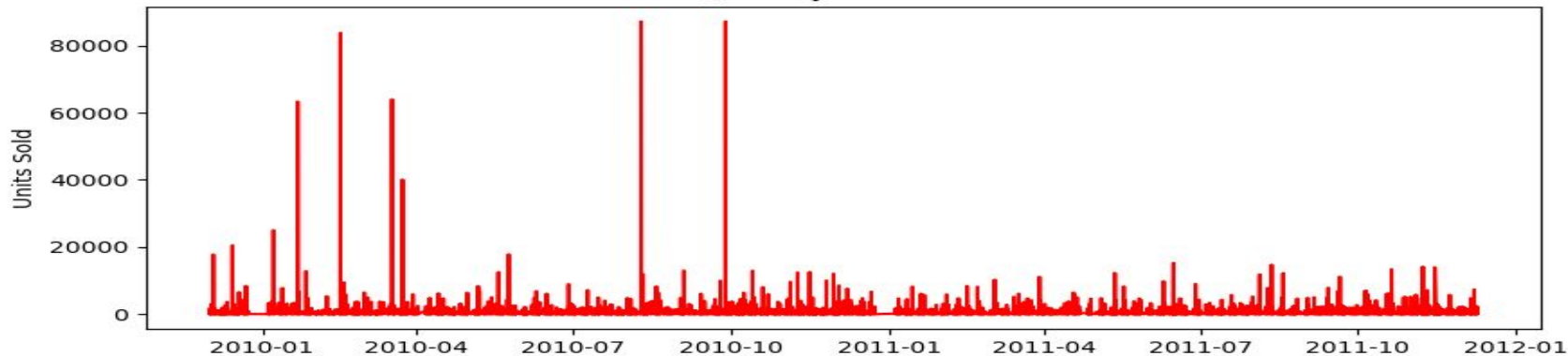


Full Picture - All Countries

Revenue over Time



Quantity over Time

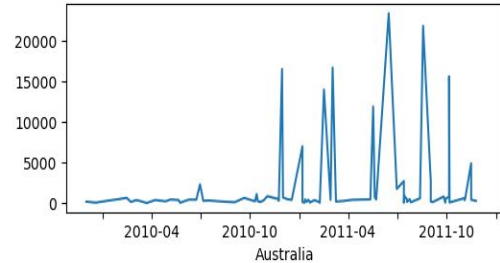
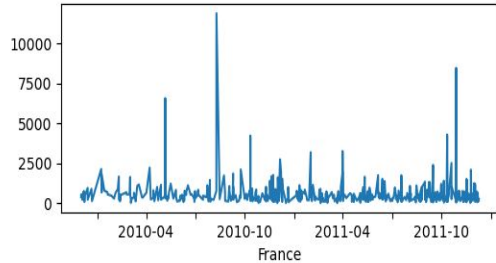
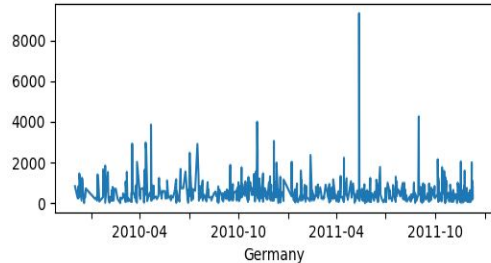
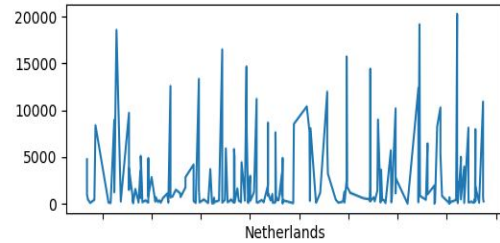
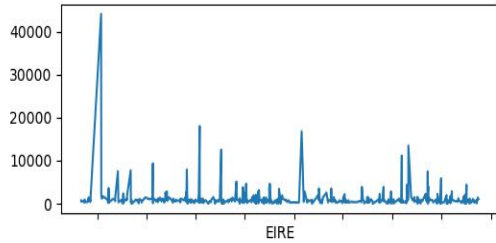
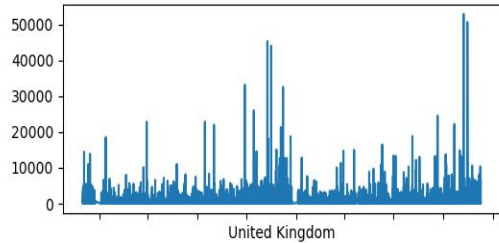


Big Picture

- Best Sales Near the End of the Year (Oct. - Nov.)
- Overall Revenue Is Stagnant
- Existing Customers Are Leaving
- U.K. Is Our Largest Market
- Ireland and the Netherlands are Our Secondary Markets

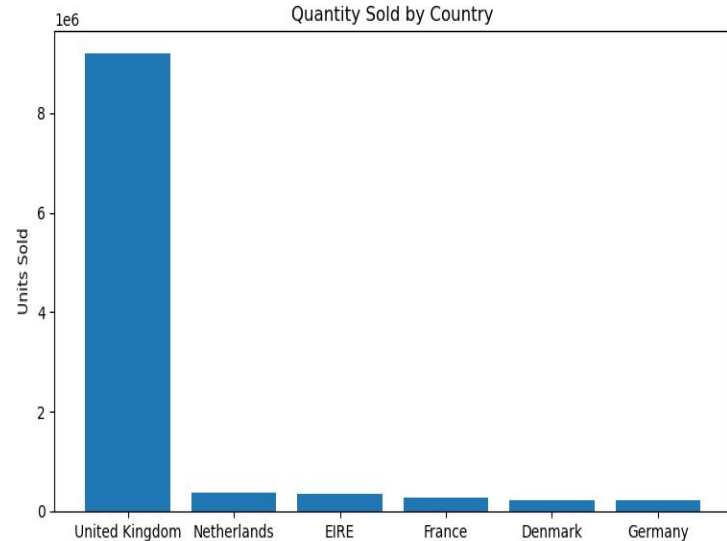
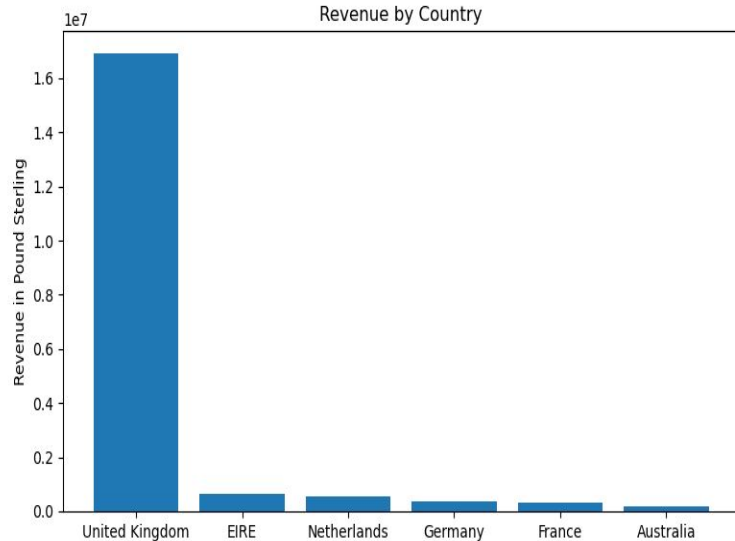
Revenue by Country

- Selected top 6 countries by total revenue
- Small sample sizes in some e.g. Australia
- Differing peak times - can focus sales in a country by peak



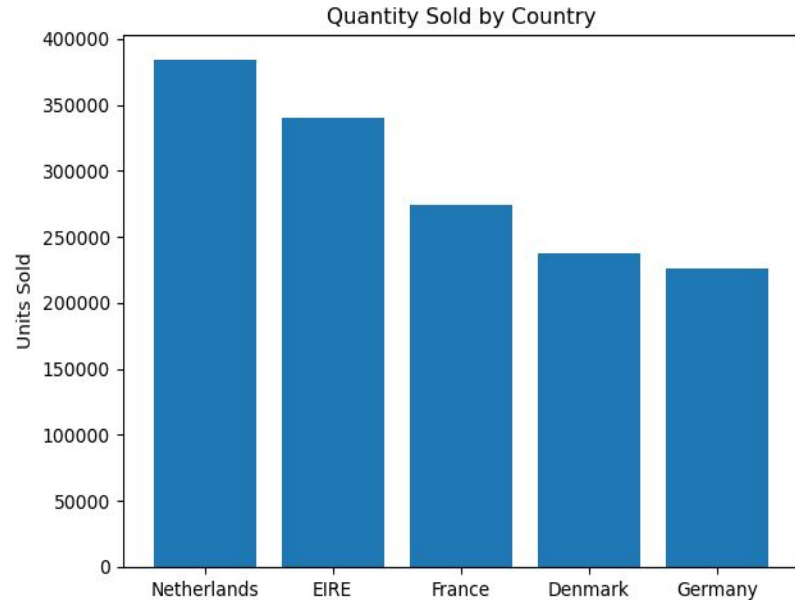
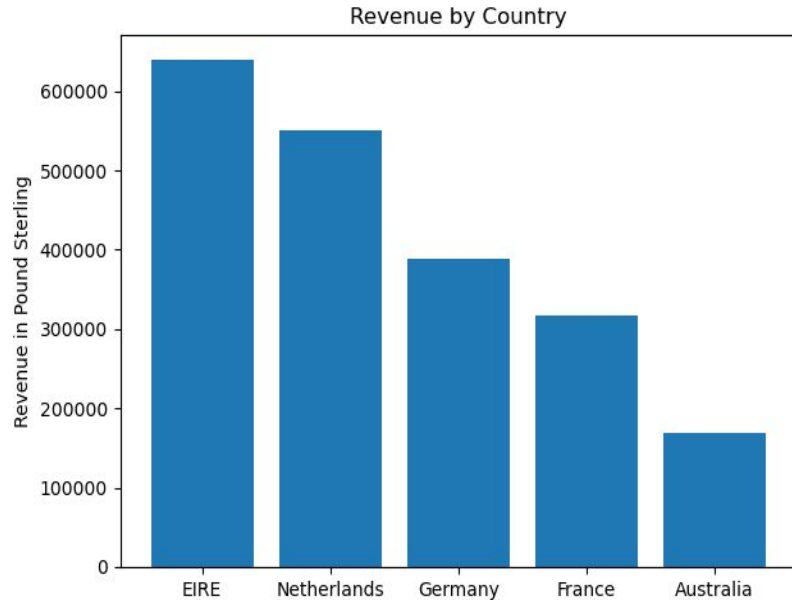
Revenue and Quantity

- UK Dominates Our Market
- Both by Total Revenue and By Quantity Sold



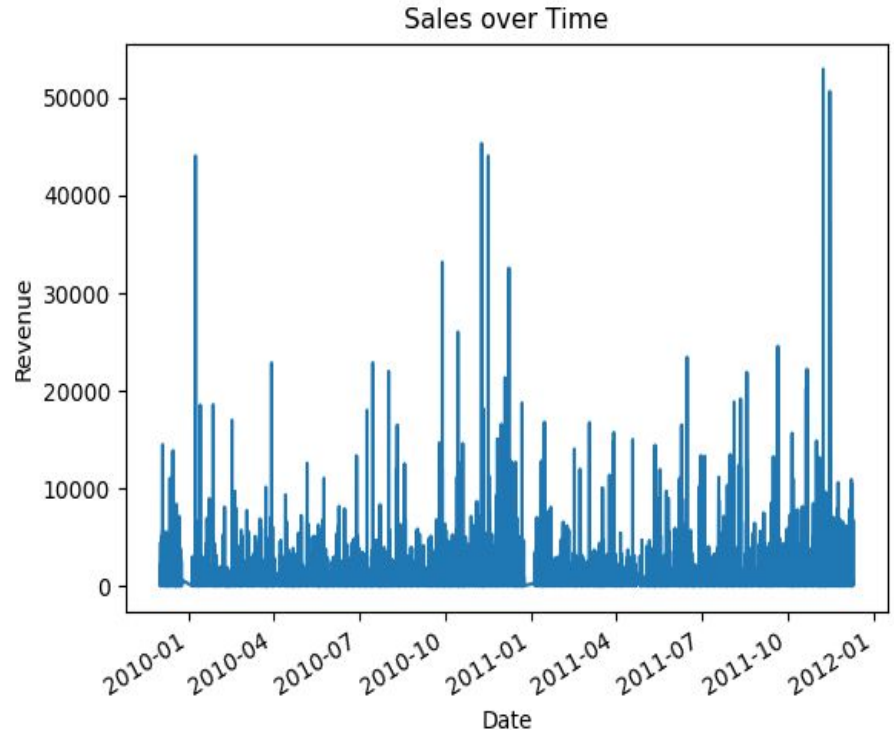
Revenue and Quantity - No UK

- Without UK, Ireland and Netherlands Are Our Top Sellers



Sales over Time

- Looking at the number of sales and their revenue
- Top sales at end of 2011
- Notable peaks at starts/ends of years
- Overall upwards trend

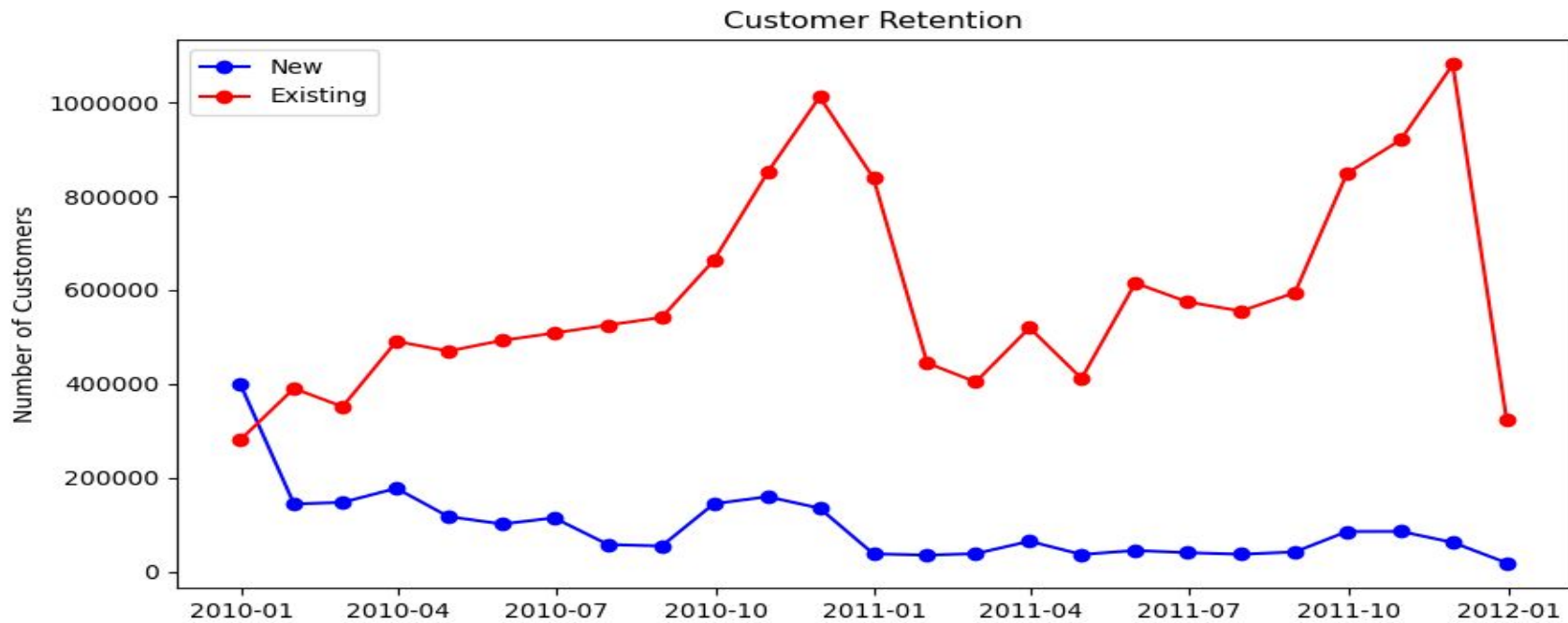


Where to Sell

- UK Is Our Bread-and-Butter
- Ireland Buys Higher Priced Items at Slightly Lower Quantities
- Netherlands Buys Larger Quantities of Lower Priced Goods

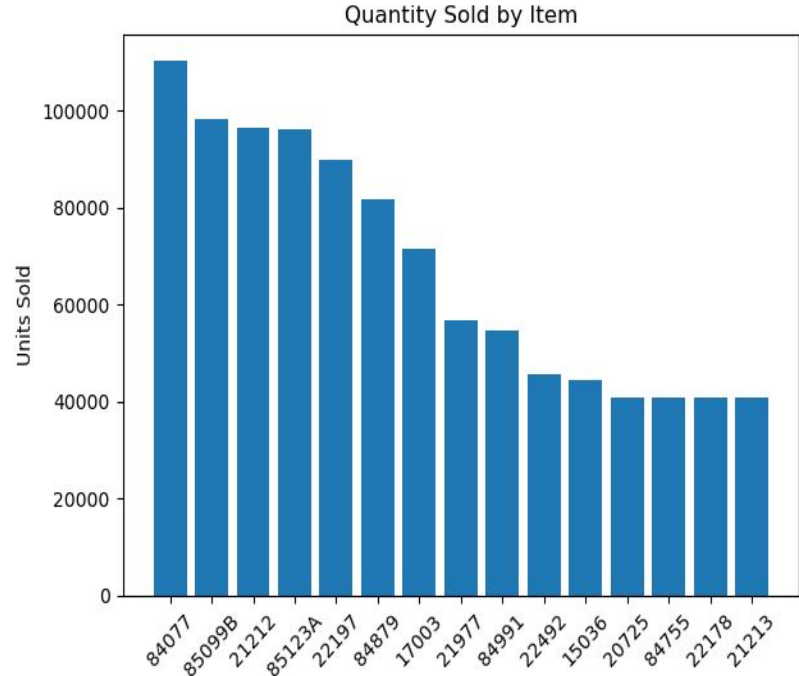
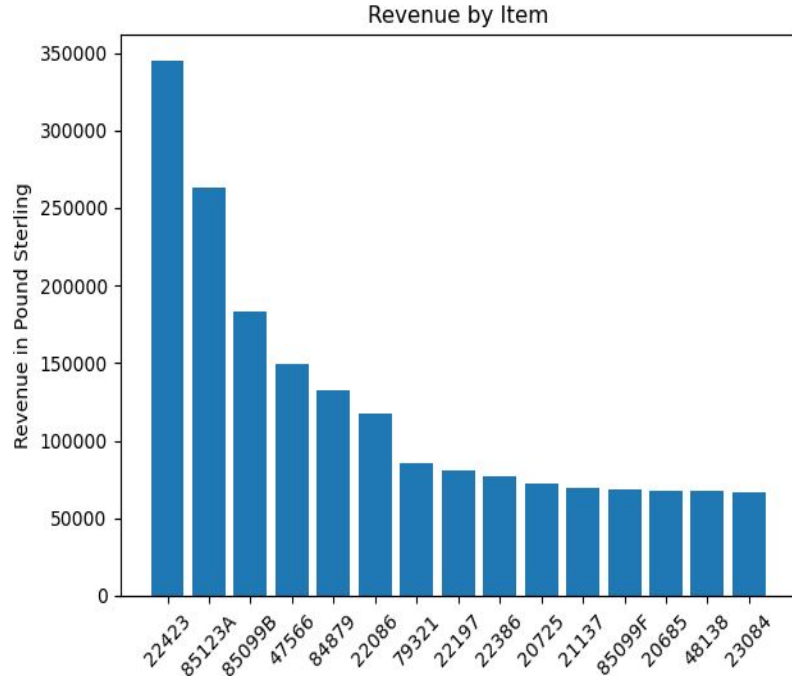
Customer Retention

- Existing Customers OK
- New Customers Sinking



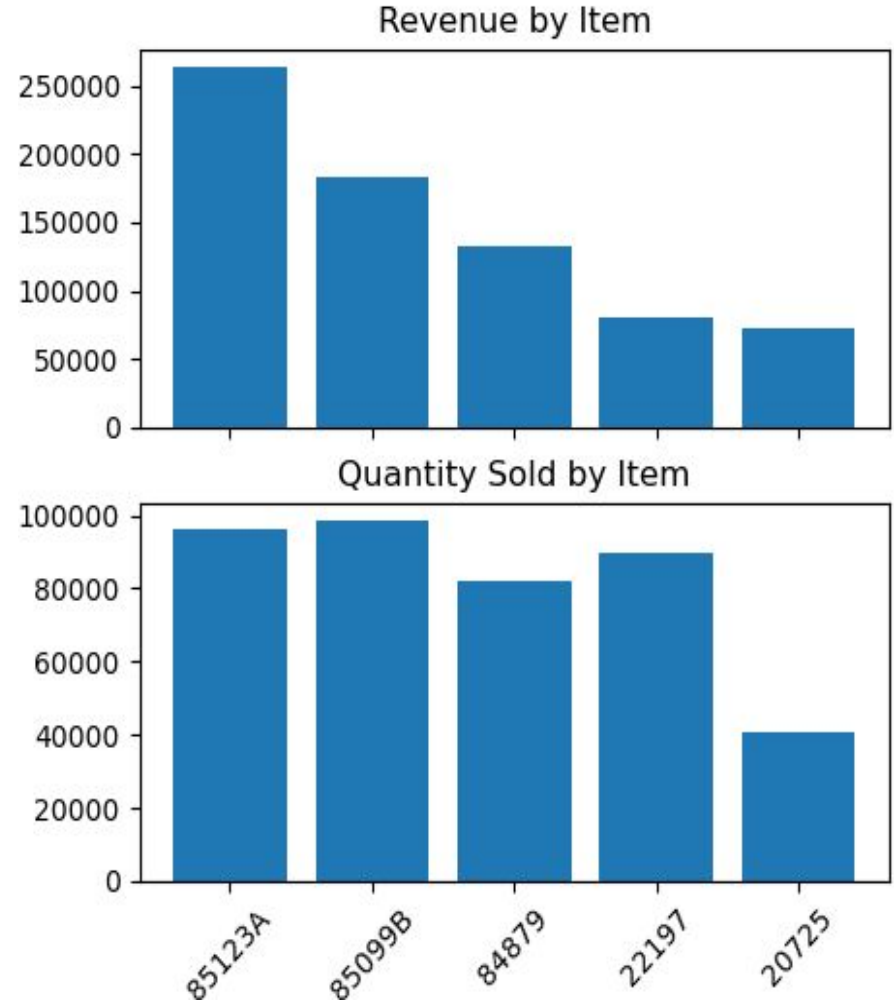
Most Profitable Items

- Top Item By Revenue Isn't Top Item By Quantity



Top Items By Revenue

- Selected Items By Revenue
- Shows Possible Item Focus:
 - 85123A has largest revenue and quantity, our best item
 - 22197 is sold a lot but doesn't sell for a lot
- Actual Decisions Depend on COGS



Items Bought Together

- Our highest revenue generating item is a spotted bag
- This bag is often purchased with other bags
- Our most commonly sold item is a light holder
- It is often sold together with other light holders
- May want to have buy x get y free / mix 'n match deals on these item types

Recommendations

- Get COGS Data for Further Analysis
 - Can't Identify Profitability Without This
- Incentivize New Customers
 - Downward Trend in New Customers
 - e.g. New Customer Sale Bundling Frequently Bundled Items
- Expand Marketing Outside of End-of-Year Times
 - Currently Huge Sales at EOY, Troughs Elsewhere.