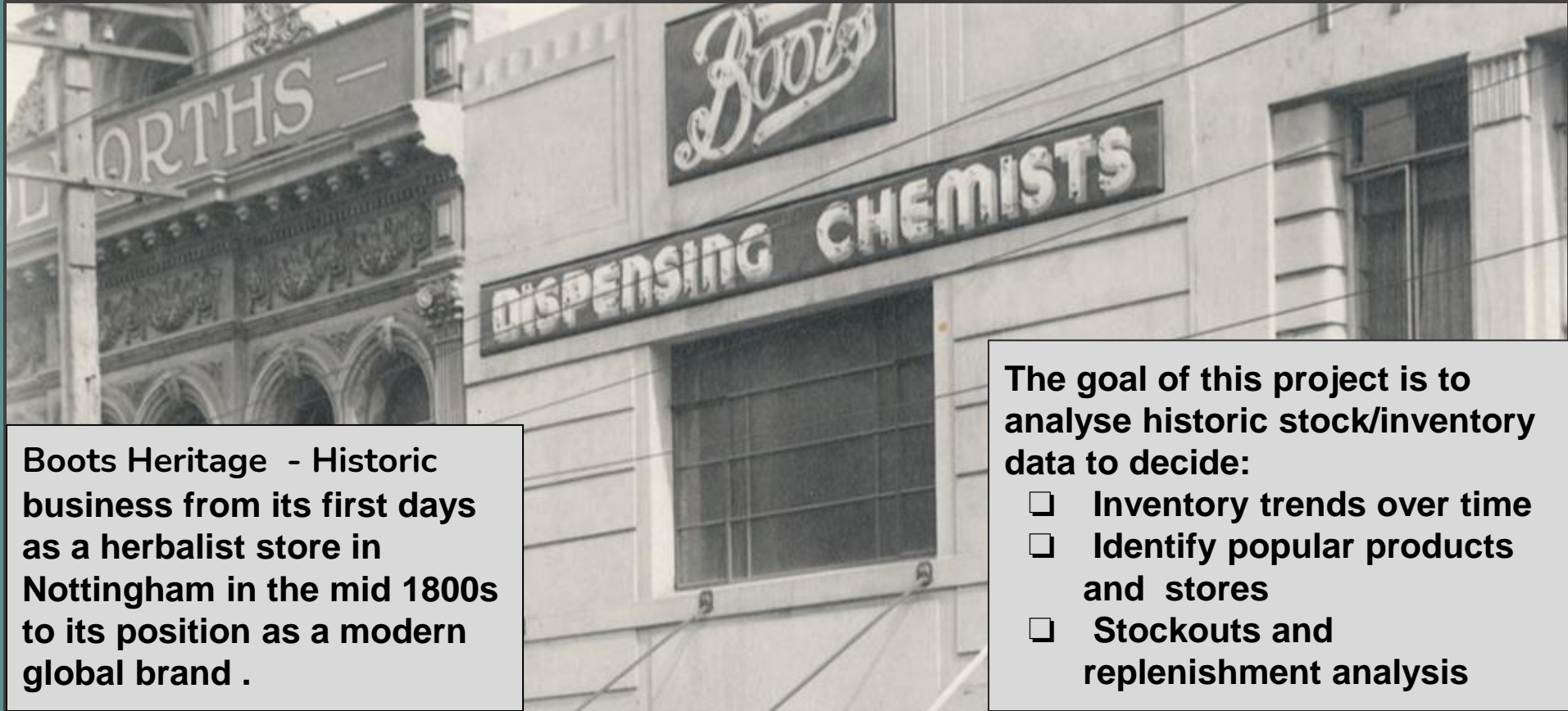


Inventory Data Analysis

Babitha Raghavan



Introduction



Boots Heritage - Historic business from its first days as a herbalist store in Nottingham in the mid 1800s to its position as a modern global brand .

The goal of this project is to analyse historic stock/inventory data to decide:

- ☐ **Inventory trends over time**
- ☐ **Identify popular products and stores**
- ☐ **Stockouts and replenishment analysis**

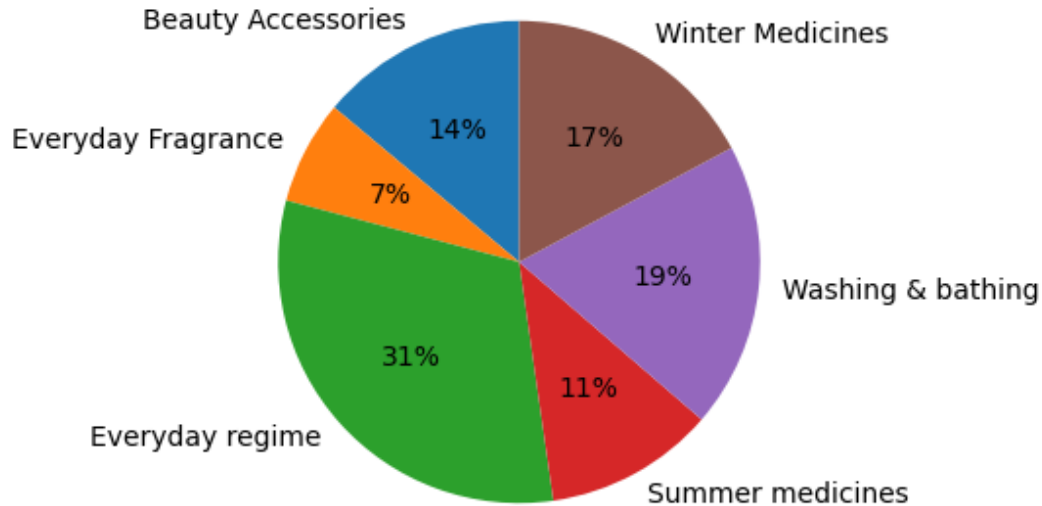
Dataset

- ❑ Boots historic data from Nov 2019 - Feb 2020
- ❑ Inventory, Product, Sales, Store data
- ❑ Include 80 stores and 991 products
- ❑ Data Analytics encompasses the practice of scrutinising and deciphering data to unearth valuable insights while pinpointing recurring patterns and emerging trends.
- ❑ By turning data into actionable information, data analytics enables business to make data driven decisions, ensuring products are available on demand, enhancing customer satisfaction.

Exploratory Data Analysis

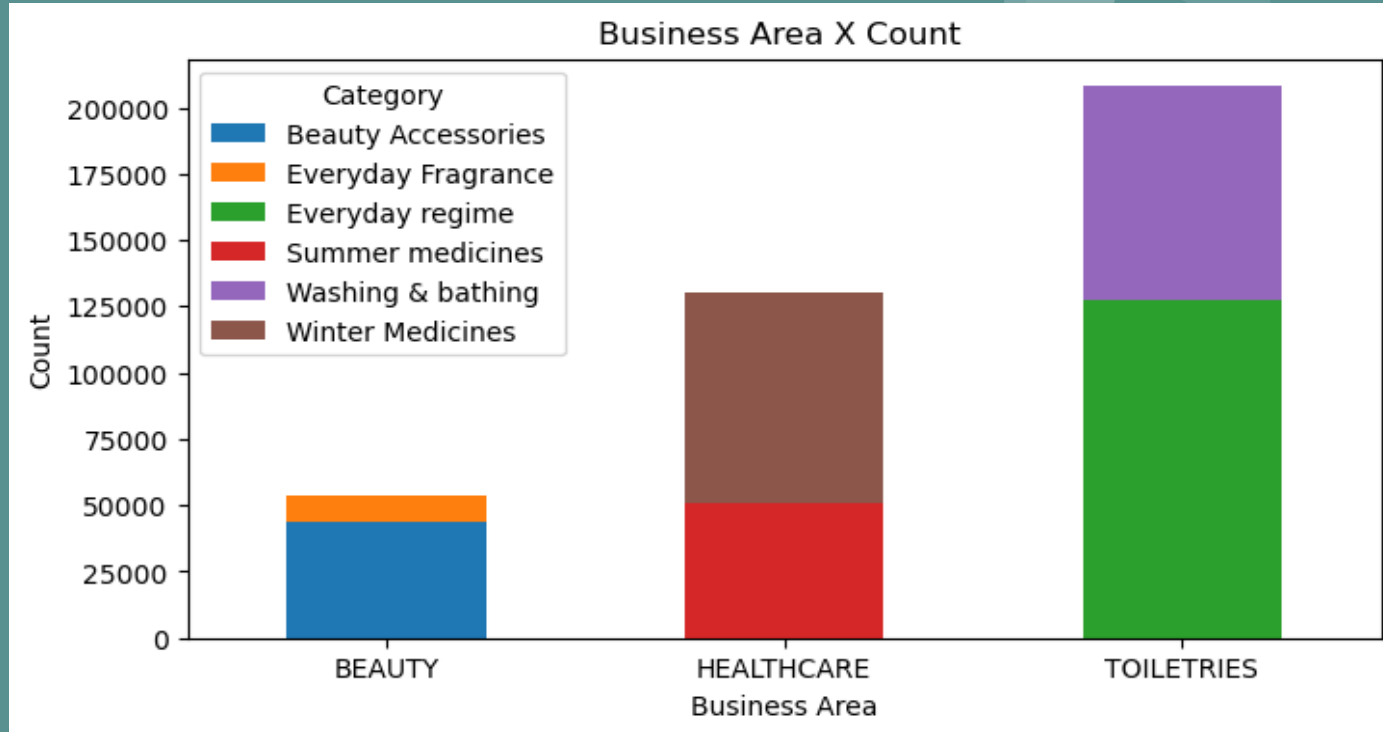


Product Category



- Toiletries - 50%
- Health - 30%
- Beauty - 20%

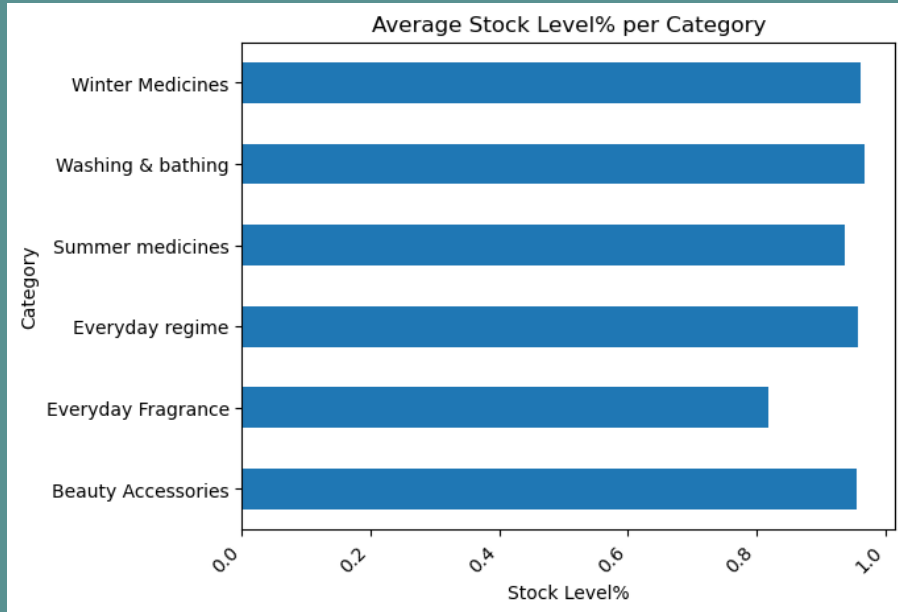
Business Area



Analysis



Stock level%

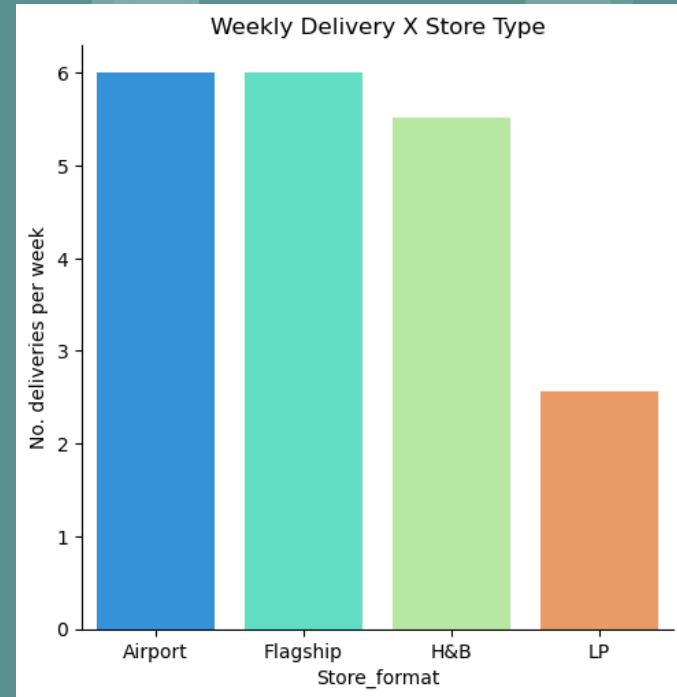
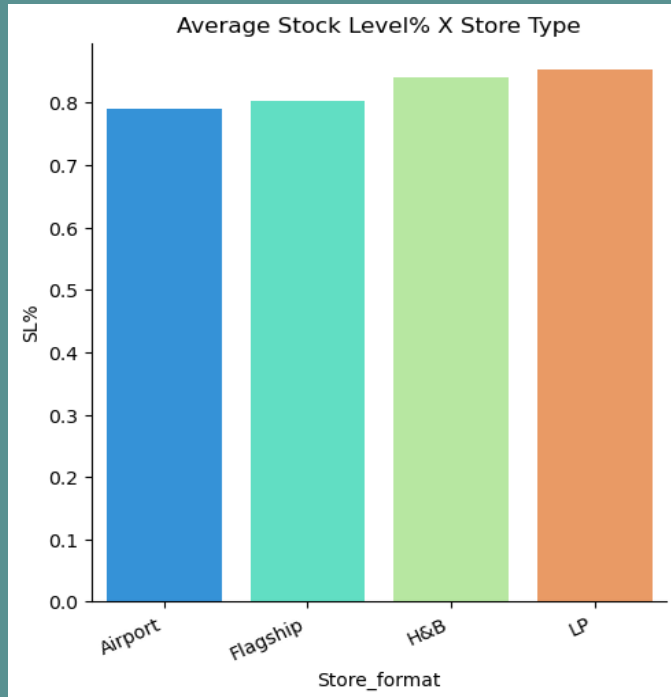


Stock Level% - measures inventory performance

Good Stock Level - 95%

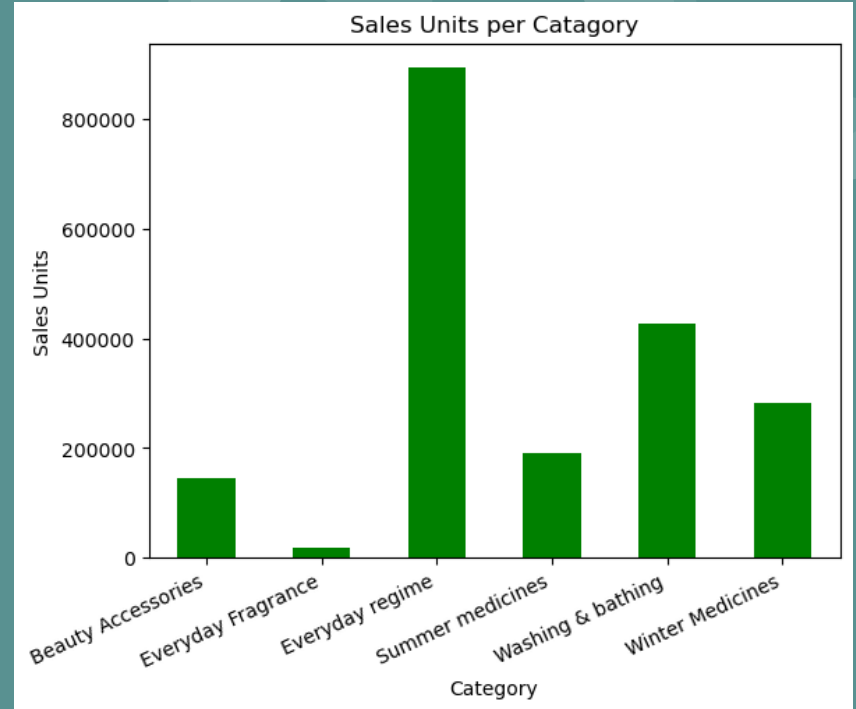
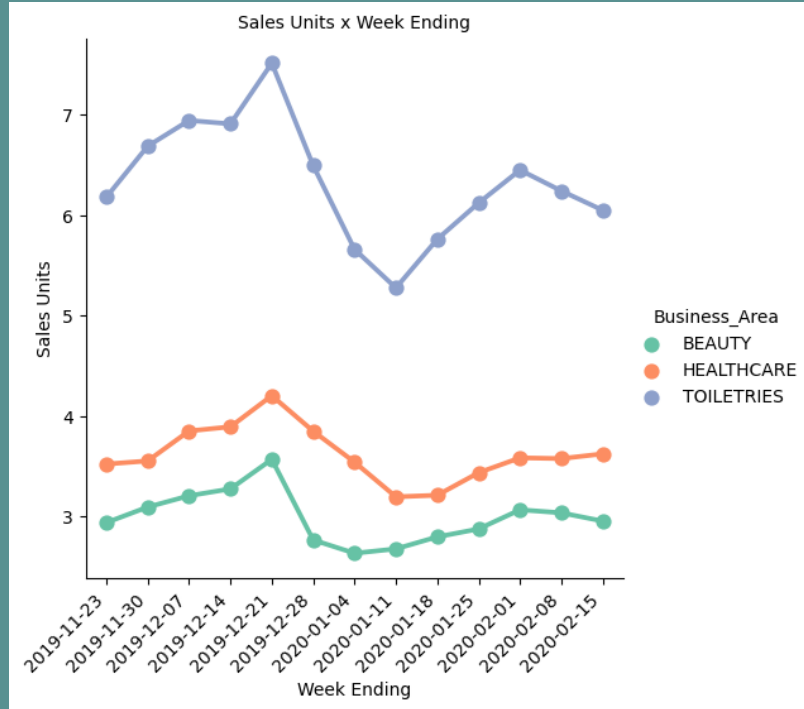
Stock level & No. of delivery per store type.

Store type LP requires less than 50% delivery, as the stock levels are very high.



Sales Units

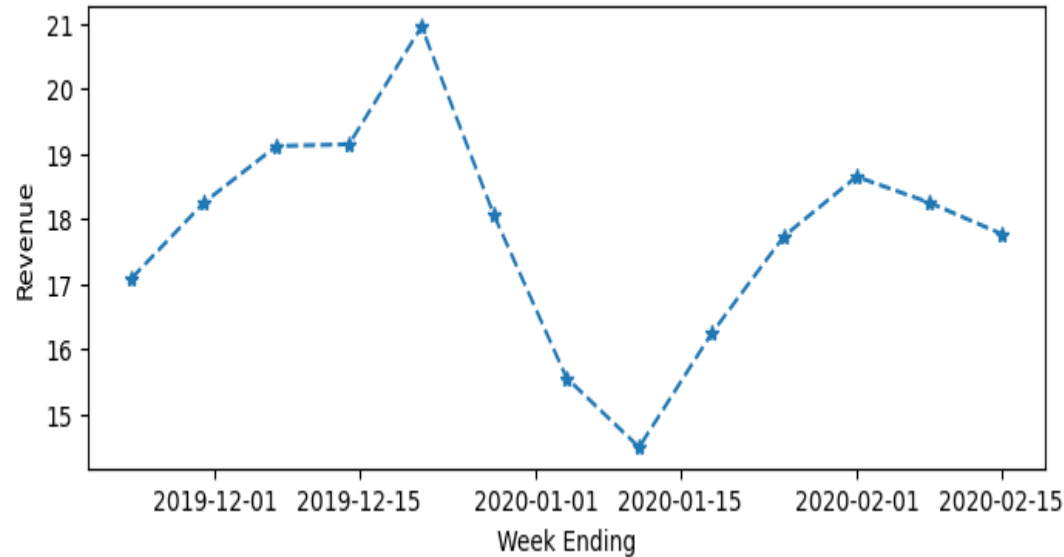
Units sold in Toiletries are more than double that of Beauty and Healthcare.



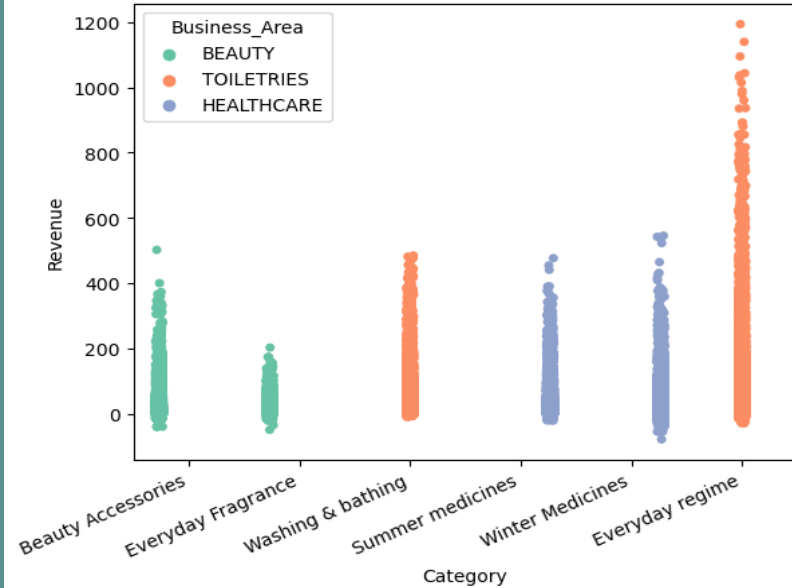
Revenue

Revenue from Toiletries is much higher than that of Beauty and Healthcare, similar to Units sold.

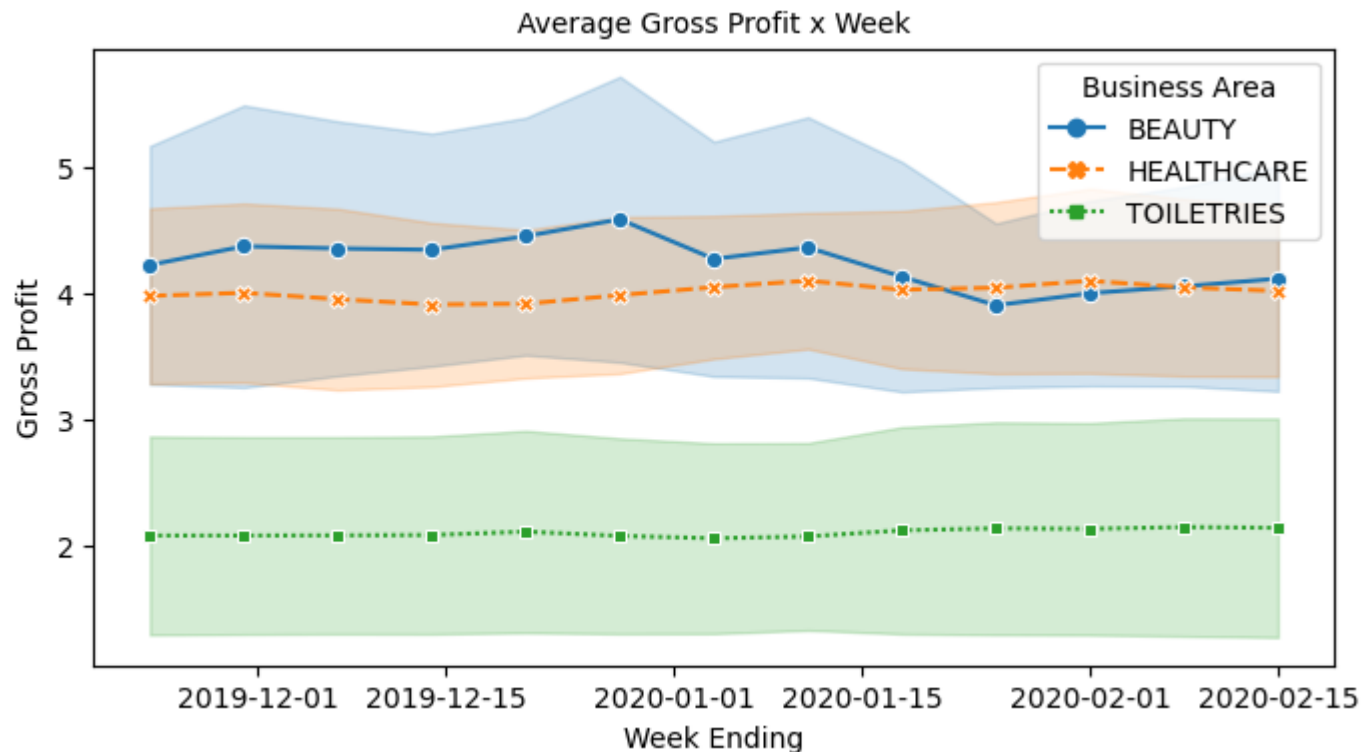
Average Weekly Sale



Revenue x Category



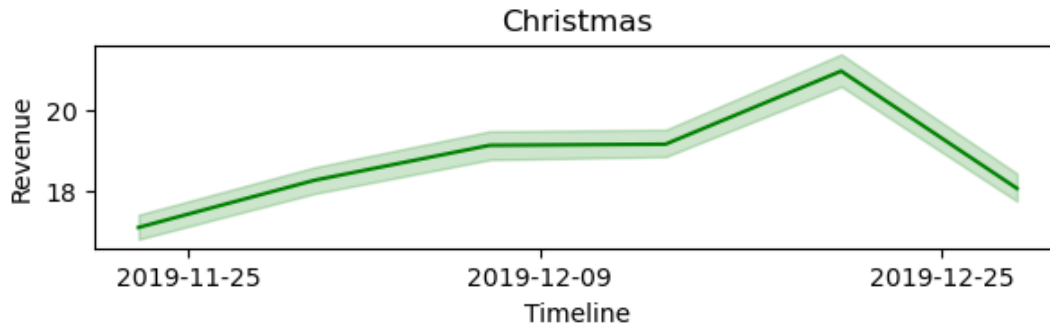
Gross Profit



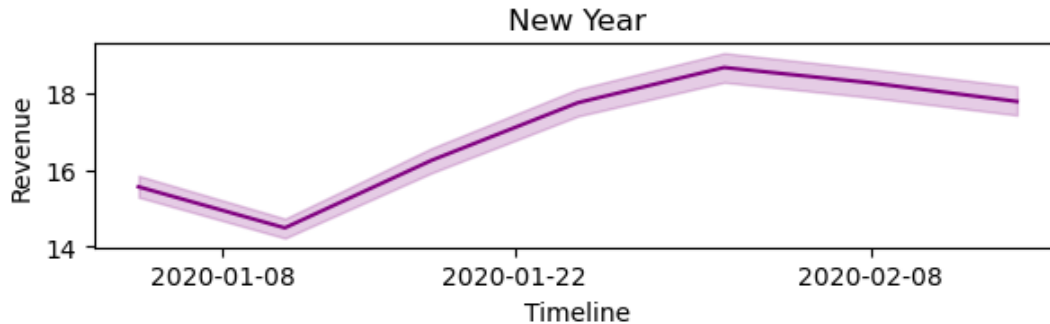
Gross Profit from Beauty and Healthcare is more than 50% higher compared to Toiletries, in contradiction to Revenue and Units sold.

Seasonal Data

Sale trend analysis



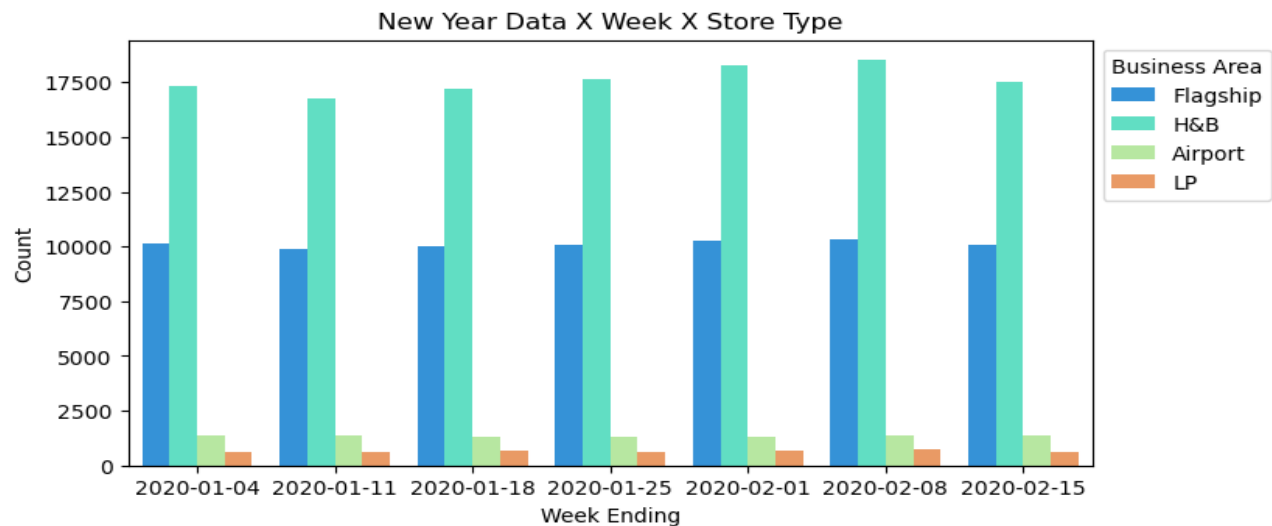
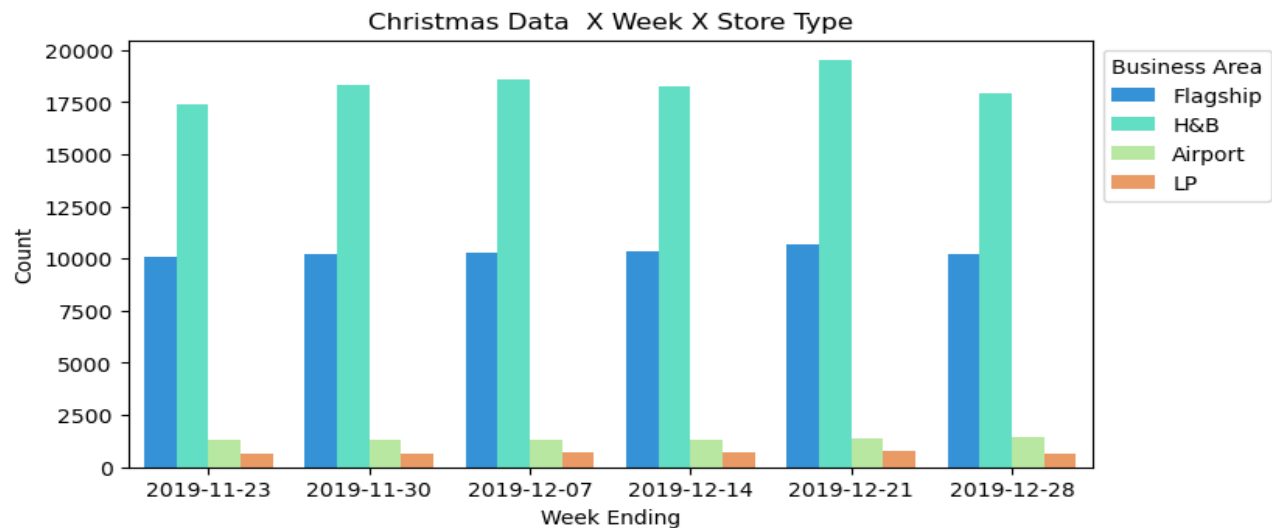
Seasonal peak during christmas months and sudden drop in New Year.



Gradual pick up later on and stays steady

Seasonal Data

Inventory per store type over Christmas and New Year months

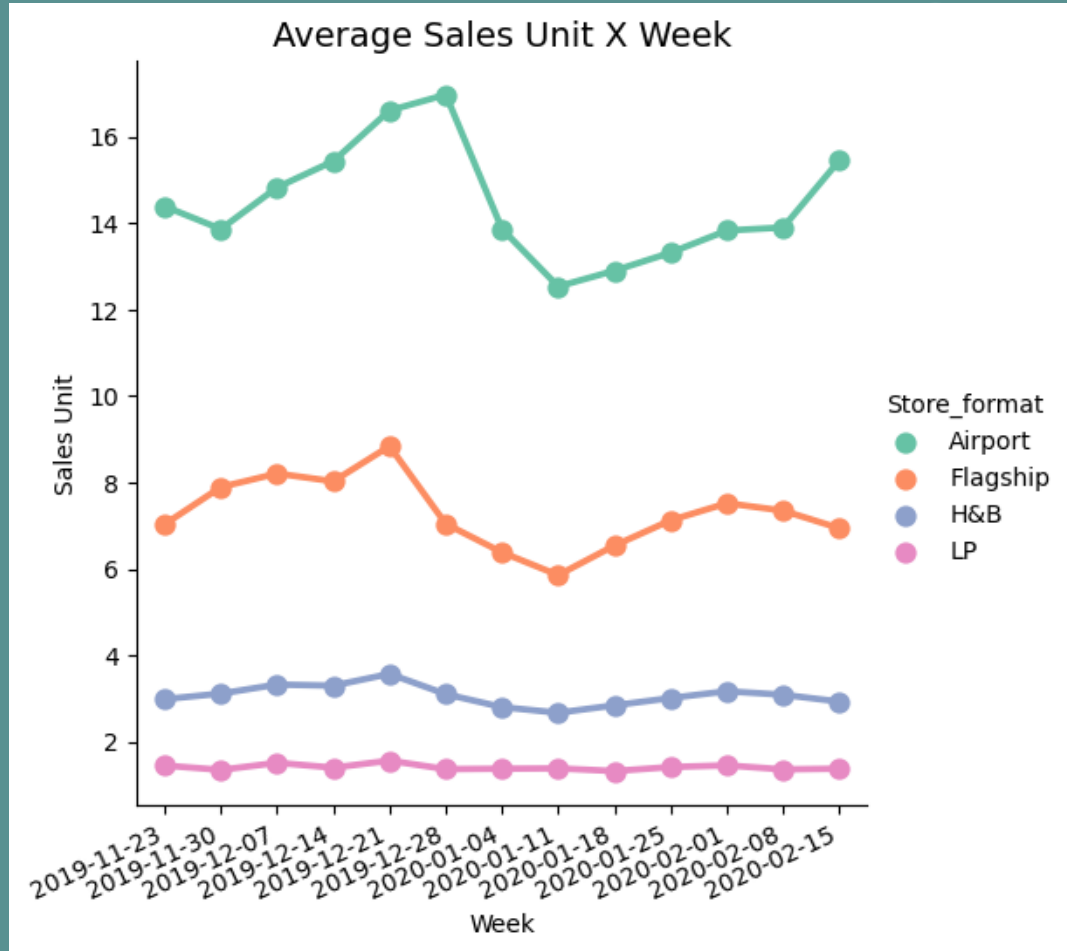


Sale Units

Sale units per week categorised per store type.

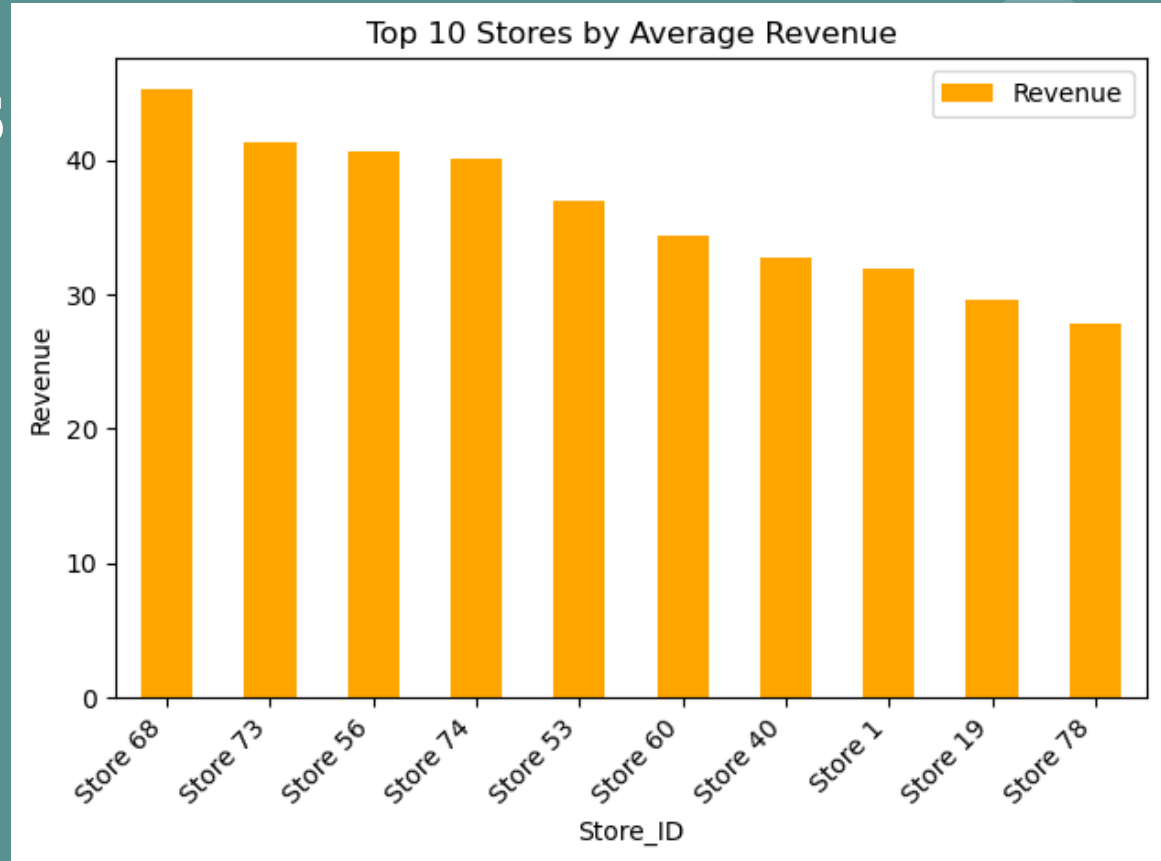
Airport has highest number of units sold, Flagship come below and shoes seasonal variation.

H&B, LP stays low and steady on units sold.



Top 10 Stores

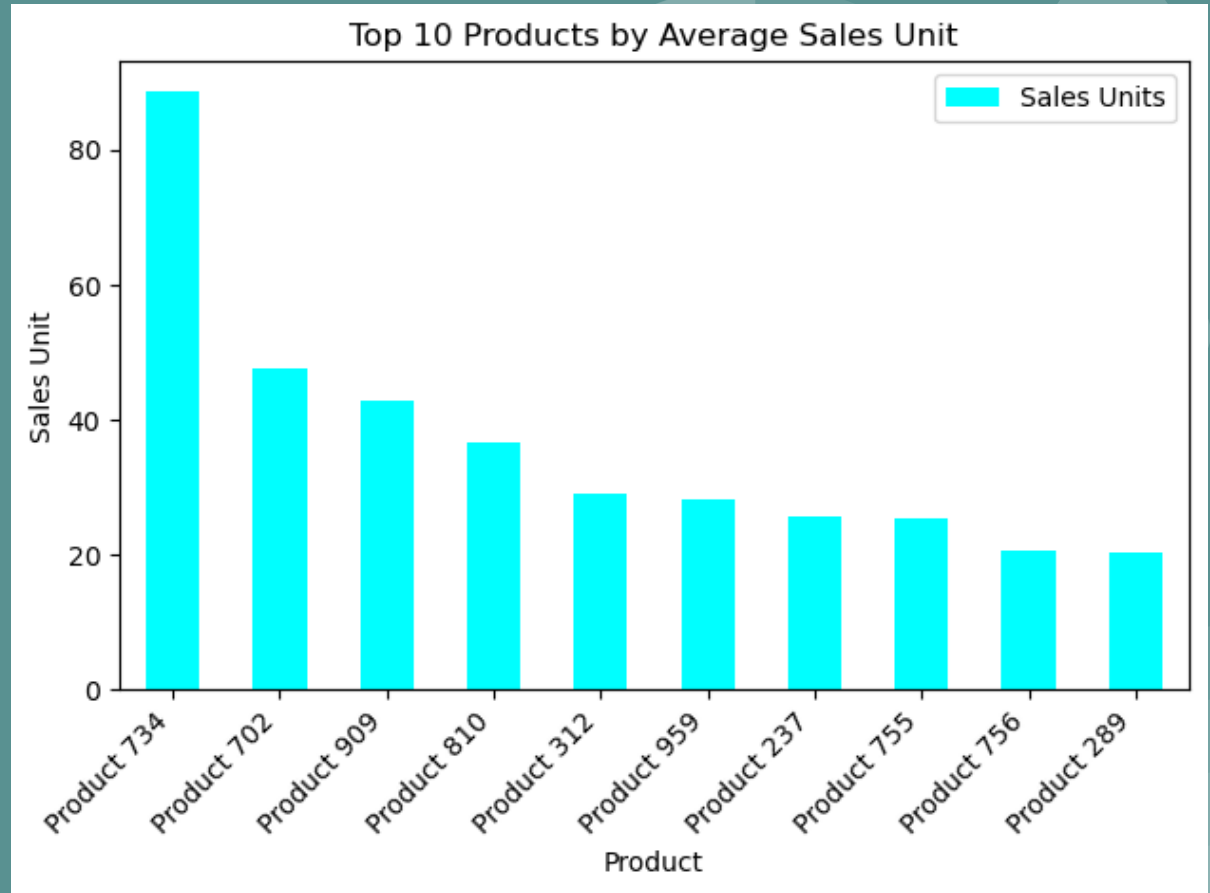
Stores in the descending order of the revenue generated.



Top 10 products sold

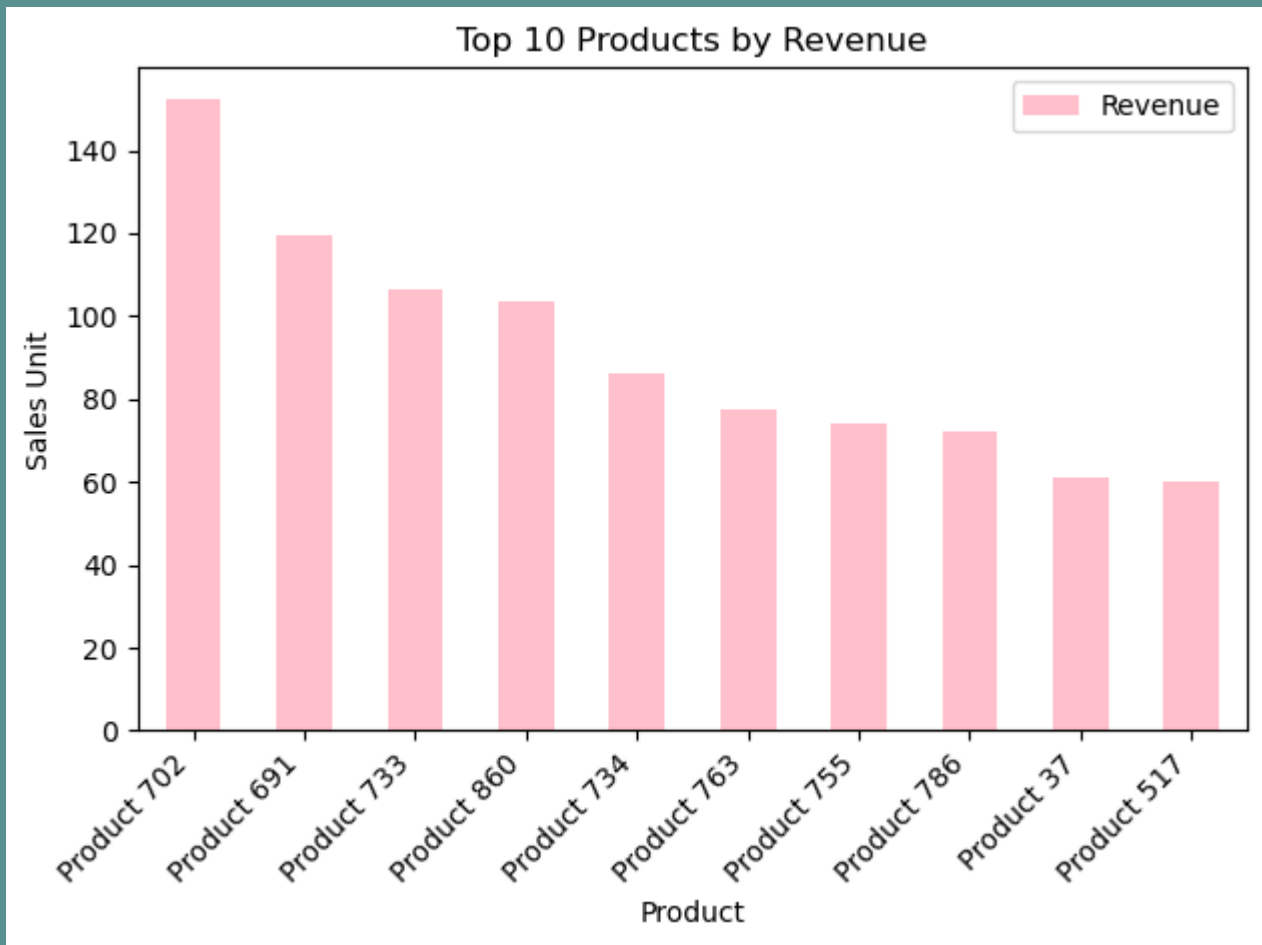
Products with highest no. of Sales Units all over the 80 stores.

Product 734 is the most popular product.

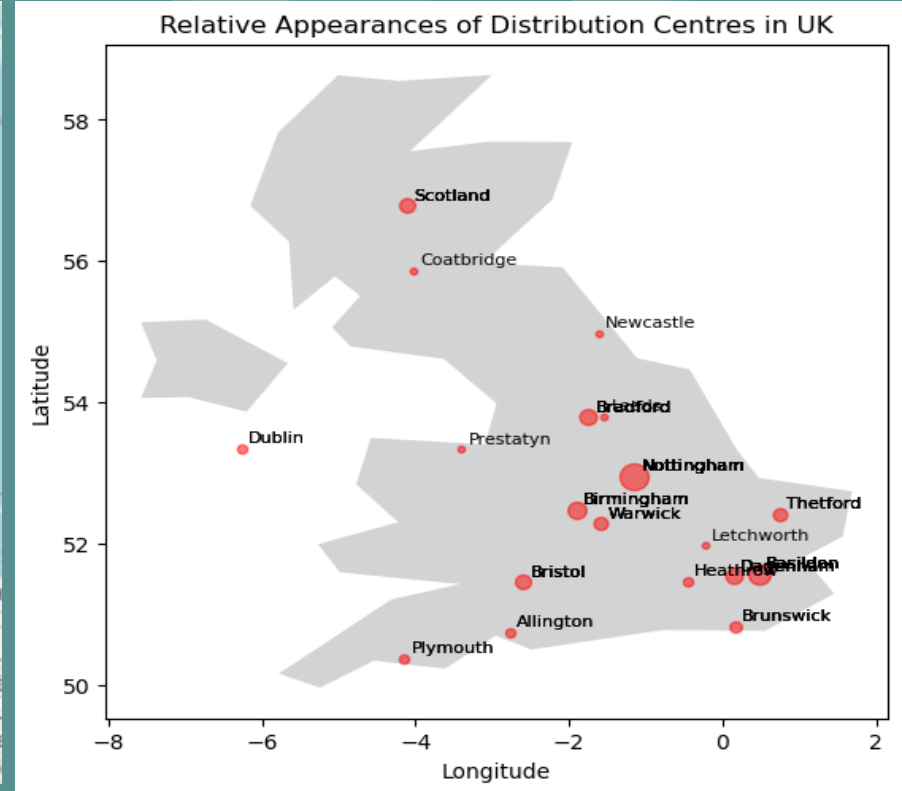


Top 10 products by revenue

Products with highest revenue in all the stores in descending order.



Distribution Centres in UK



Insights and Recommendation

- ❑ Stock Level% - LP stores stock level need to be improved, to reduce holding cost, by applying discounts and promotions on low moving products.
- ❑ Product Category - Promote the sale of everyday fragrance which is lowest in sale units, and has proven to be the highest profitable category. Promote sale on the same by adverts on offer and discounts.
- ❑ Seasonal Trend - Average revenue generated was peaked during christmas and dropped drastically by 2nd week of Jan 2020, in Flagship and Airport stores. While H&B, LP stores have a steady sale during the period considered.
- ❑ Stockouts - 89% of products in various stores are under stock and require immediate replenishment. 9% is overstocked.

Conclusion

- ❑ Analysis was performed prominently on grouped data such as category and Store type , could be performed on individual product or store, for detailed analysis.
- ❑ Seasonal variation in sales shows peak in sale units during holiday weeks.
Hence can prepare the stock ready and frequent deliveries for this period.
- ❑ Promotion and discounts on low moving products need to be applied to reduce holding cost. Plan future ordering of the products based on demand.
- ❑ LP and H&B store types need to be focussed on improving sales, service and identify products of high demand.

Thank You

