Marketing and Retail Analytics: Capstone Project

By –

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Agenda

- Problem Statement
- Objectives
- Flow of analysis
- Visualizations
- Insights
- Recommendations

Problem Statement

- OList, an e-commerce company that has faced some losses recently and they want to manage their inventory so as to reduce any unnecessary costs.

- Now to be able to meet the demands of the customers, the company would need to store tons and tons of products in warehouses.

- Since storing these products adds to the costs that the company incurs, it is necessary for the organization to plan their inventory well.

Objective

- To identify top products that contribute to the revenue and top product category which have been ordered multiple times.

- Understand what items are most likely to be purchased individually or in combination with some other products.

- Improve our understanding with the use of Market Basket Analysis to analyze purchase behavior of customers.

Flow of Analysis

A thorough analysis of the OList Retail dataset was conducted. The process included:

- The dataset was cleaned and transformed using the python libraries of Pandas and Numpy in the Jupyter Notebook.
- The missing values for the various columns were replaced with the best values.
- The redundant and duplicate records were discarded and only first occurrence is kept.
- Only the cases having order status as 'Delivered' was considered.
- Exploratory data analysis was done using the python libraries of Matplotlib and Seaborn in the Jupyter notebook.
- A cleaned dataset was made after performing the above steps.
- Various visualizations and Market Basket Analysis was done in Tableau.

Top 20 Ordered Products by Quantity

The top 20 ordered products by quantity

Product Category Name
- garden_tools
- health_beauty
- toys
- watches_gifts
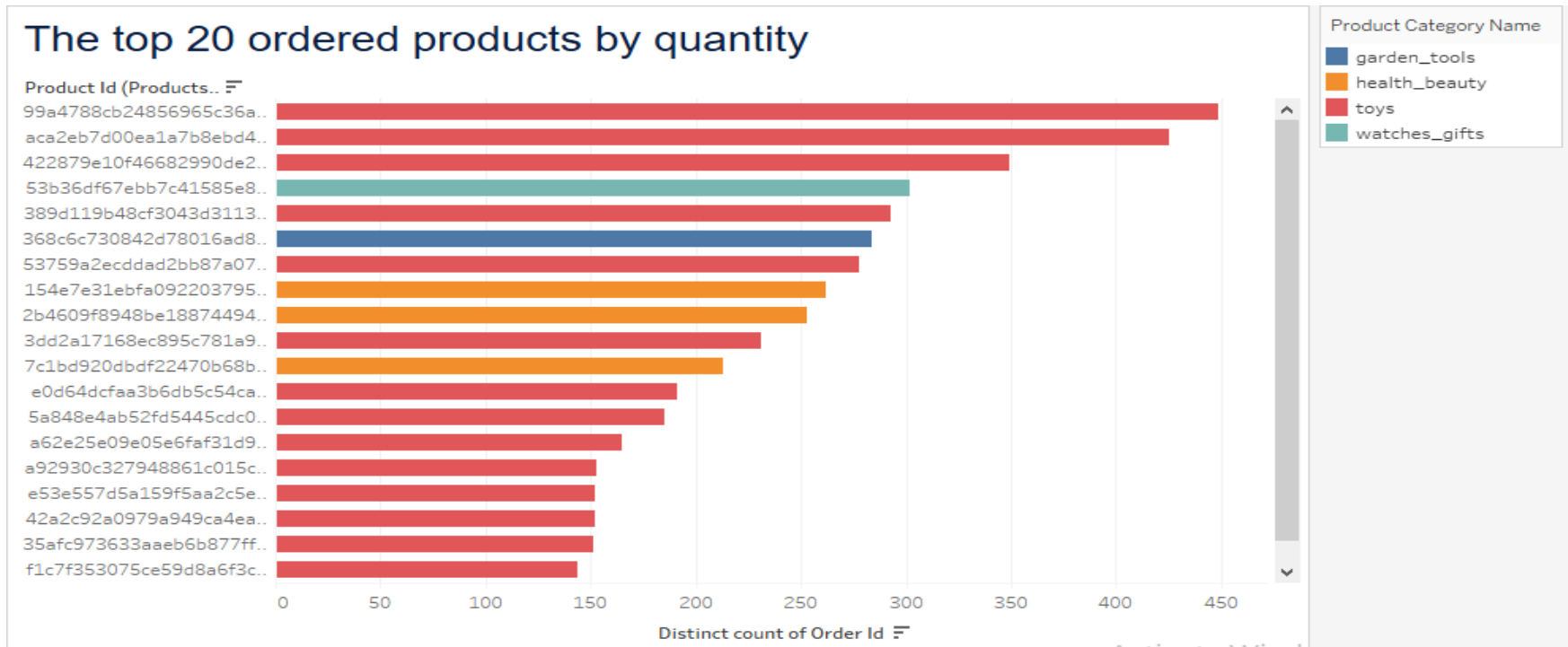
- The highest ordered product is from Toys category and has been ordered 449 times.
- Most of the products in the top 20 that are frequently ordered belongs to toy category.

Top 20 Ordered products by Revenue

Top 20 Ordered products by Revenue

Product Category Name
- computers_accessor..
- garden_tools
- health_beauty
- toys
- watches_gifts
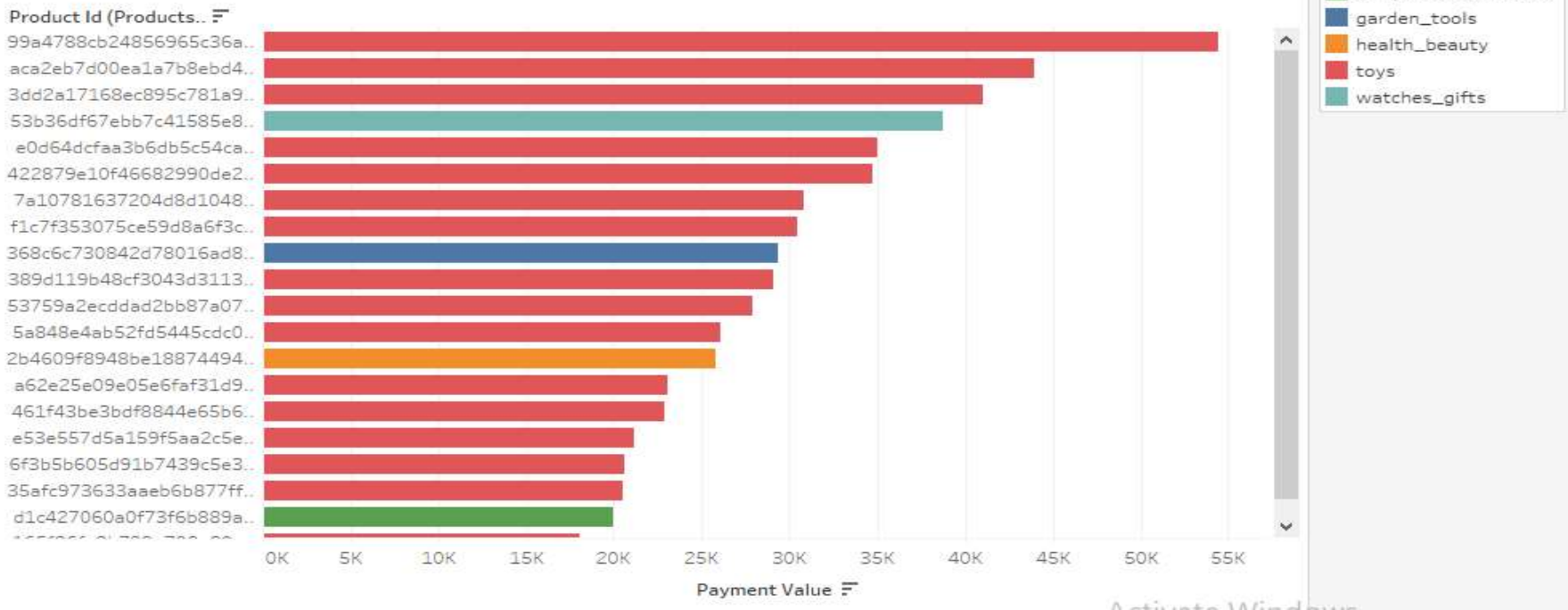
- The highest revenue generation is 54,425 which belongs to the toys category.
- Most products in the top 20 list generating high revenue belongs to the toys category.

Revenue: Pareto Analysis

- Toys, health-beauty, bed-bath table combine generate 80.69% of the revenue.

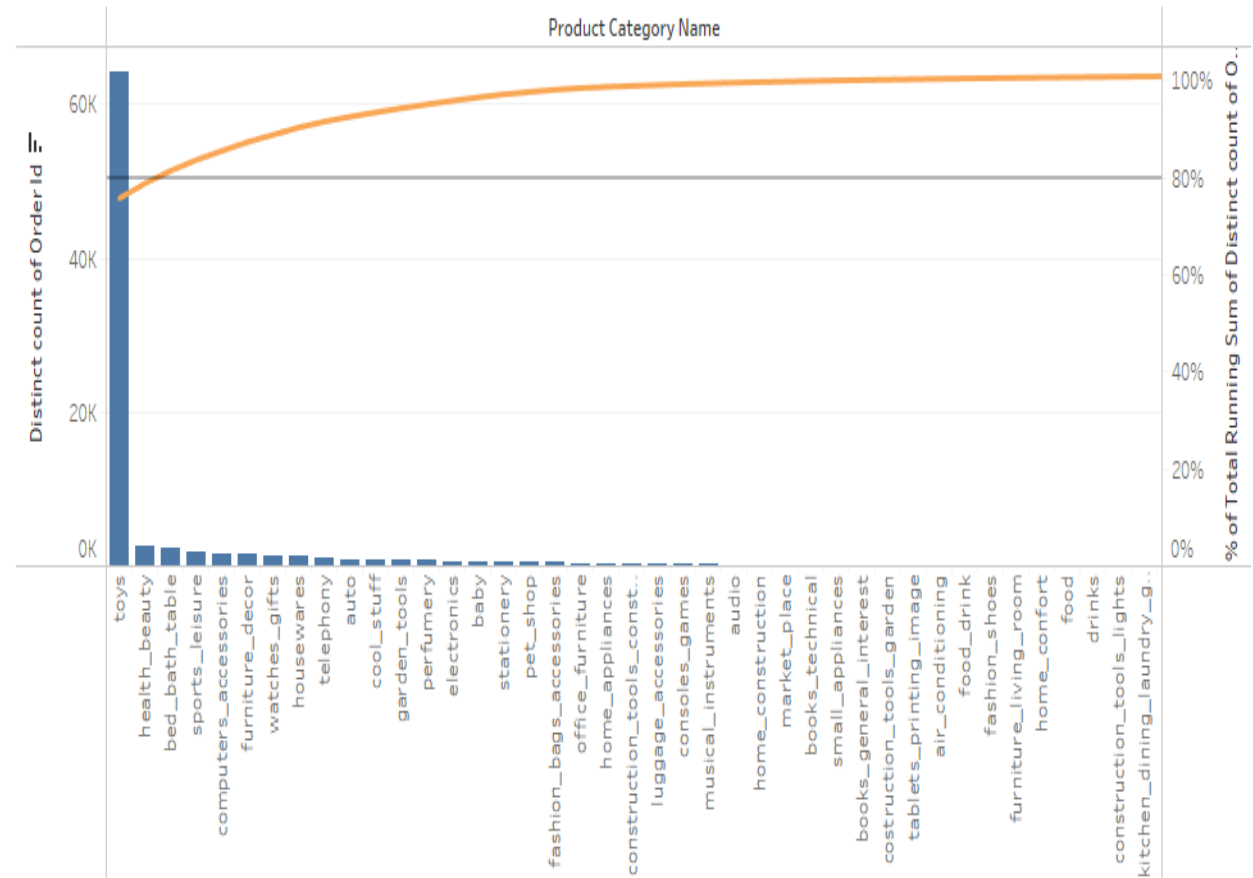- Toys alone generate 75.56% of the revenue.
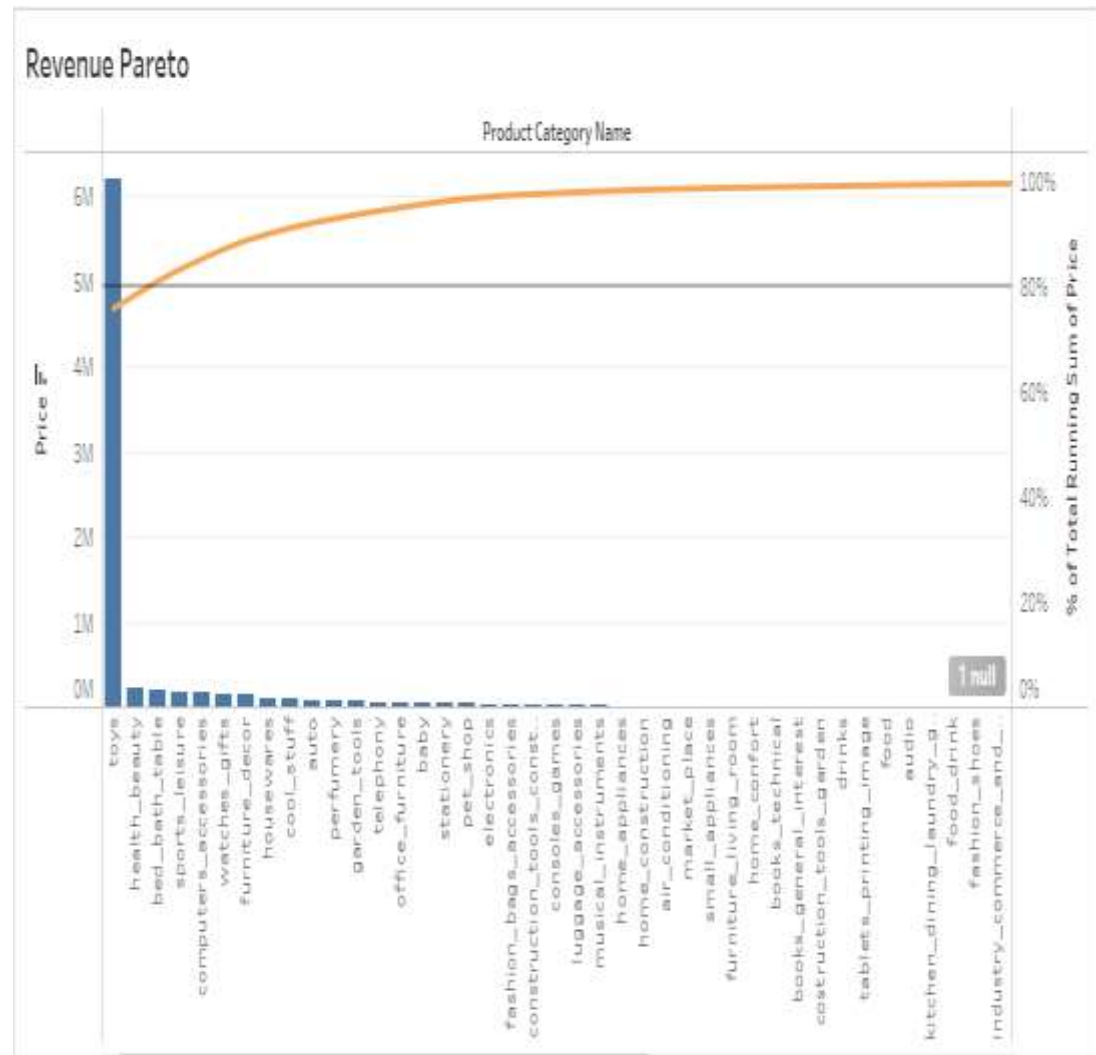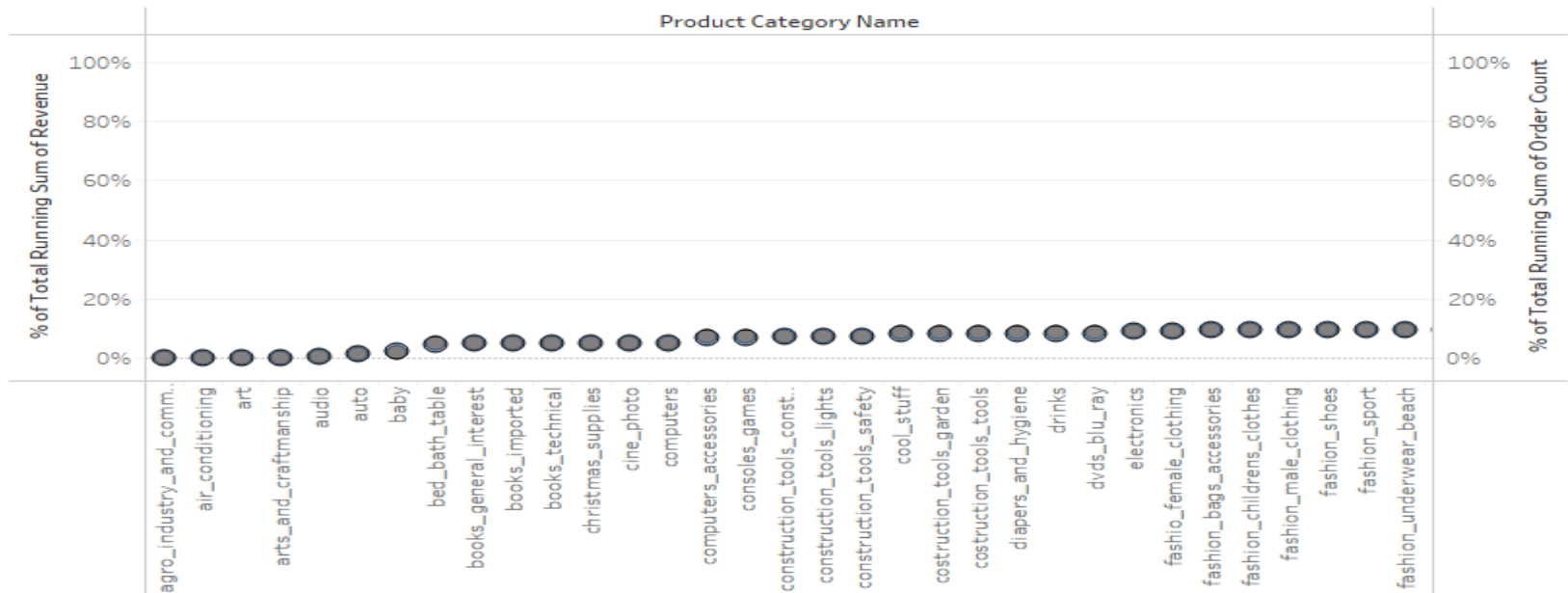
Quantity: Pareto Analysis

- Toys, health-beauty, bed-bath table combine generate 81.44% of the total orders.

- Toys alone contribute to 75.74% of the total orders.

Quantity Pareto
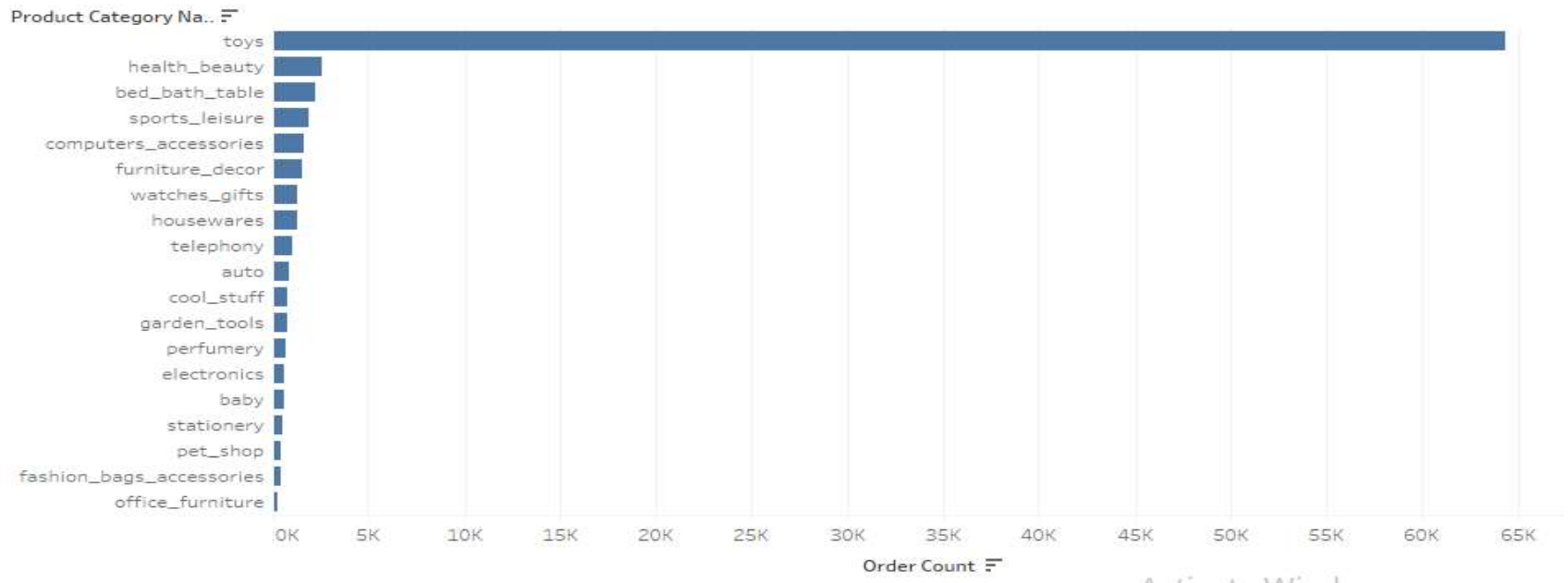
Percentage of running total

The percentage running totals by revenue and number of orders

- The percentage of total running sum of revenue and total running sum of quantity ordered has been broken down by different products.
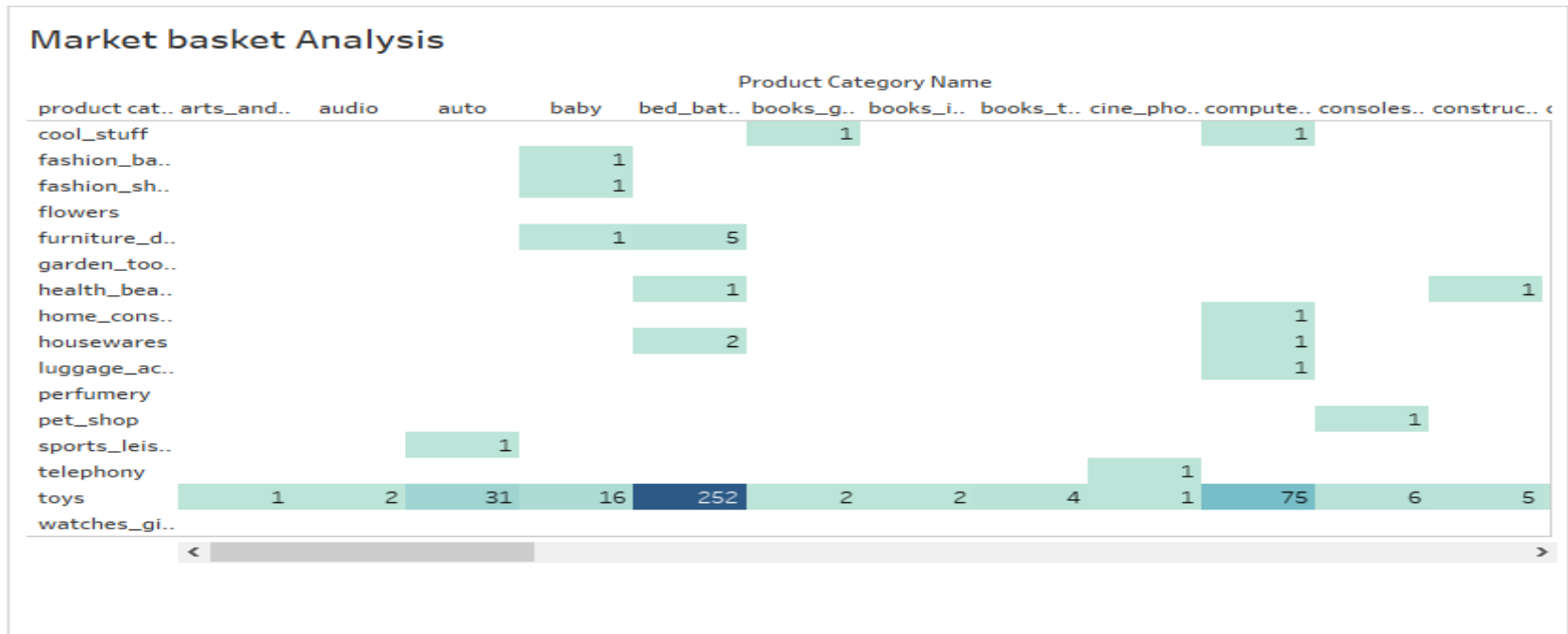
Products categories ordered more than five times

The product categories which are ordered more than 5 times

- Toys category is the most ordered category with total of 64,301 orders.
- Health-beauty, bed bath tables and sports leisure are the next most ordered category.

Market Basket Analysis

Market basket Analysis

- Market basket analysis is performed to identify the frequently ordered category association.
- Toys are the most ordered category along with the categories of bed bath tables, furniture decors, computer accessories and health beauty.

Insights

- The toys category constitute 20% of the products which generates 80% of revenue.
- Apart from toys, the products from the categories of bed bath table, health beauty, furniture decor and computer accessories are most frequently ordered.
- Health-beauty, bed bath tables and sports leisure are the next most ordered category.
- It is observed that despite of the high price, some products are frequently purchased by the customers.

Recommendations

- The company should focus on the categories which generate more than 80% of the revenue by always keeping them in stock.

- The company should target customers who are more likely to buy toys to boost sales as this category is the most ordered category.

- The company can offer discounts or offers on frequently ordered category association to encourage cross-selling among the products.

- The company can reduce categories like cine photos, small home appliance and music equipments etc as they are not contributing much to revenue and sales.

Thank You !!

Video submission link:

https://drive.google.com/file/d/16fvqTHEtFabxZ8eYlt2A6NVXB3F4aa6C/view?usp=sharing