

# Market Basket Analysis

GreenGrocer



# Background

- B.S in Aquatic Ecology
- 6 years in IT Recruitment & Sales
- Flatiron School - Data Science

[LinkedIn](https://www.linkedin.com/in/stuart-clark-185034123) - [linkedin.com/in/stuart-clark-185034123](https://www.linkedin.com/in/stuart-clark-185034123)

[GitHub](https://github.com/sclarkHOU) - [github.com/sclarkHOU](https://github.com/sclarkHOU)



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# Bluf!

The global Organic food market is estimated to be worth \$553 billion by the end of 2033.



# 01 Business Overview



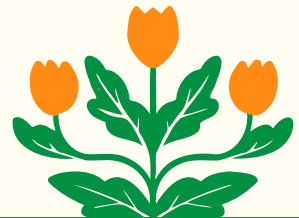


# Overview



The organic grocery market is experiencing rapid growth, driven by increasing consumer awareness of health and sustainability.

With the demand for organic products and online shopping on the rise, GreenGrocer wants to strategically position itself to tap into this expanding market by introducing an Organic Grocery Delivery Service.





# 02 Data Overview





# Data Overview . ●

The dataset used comes from 3 million grocery orders from more than 200,000 Instacart users. The data was filtered down to only focus on Organic Products. The dataset includes information on the following:

- 190,000 users
- 2.3 million orders
- 5000 Organic products





# 03 Data Analysis



# Organic Power!

32%



**Organic  
Products**



69%



**Organic  
Reorders**



# Predictive Insights



**Organic Produce**

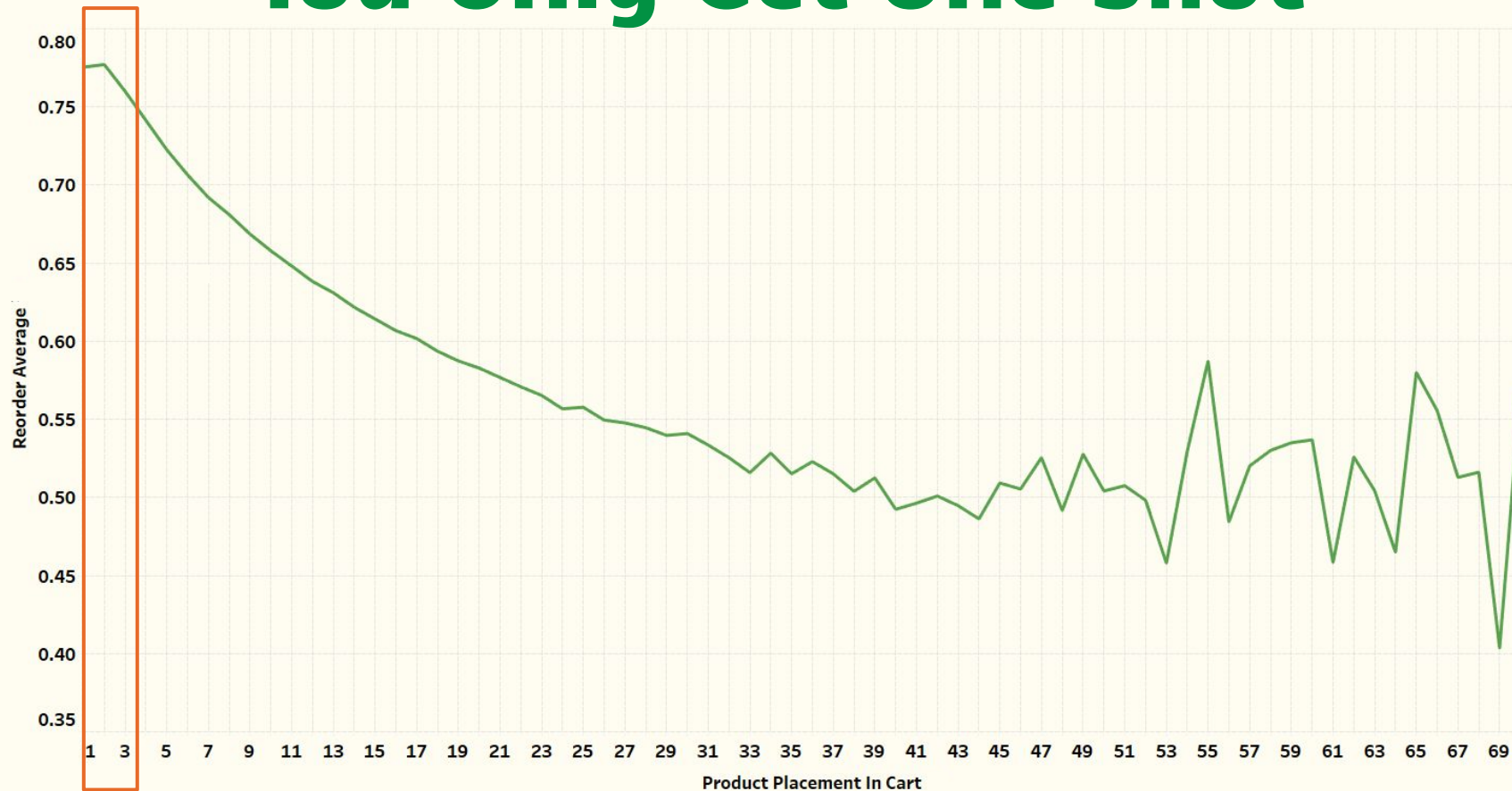


**Product Placement**



# Produce, Produce, Produce!

# You Only Get One Shot





# 04 Modeling



# Results

75%



**Decision Tree**

Baseline

84%



**XGBoost**

82%



**Logistic Regression**

Feature  
Importance



# Apriori & Association Rules

A	B	Support	Lift
Organic Bag of Bananas	Organic Hass Avocado	0.02	1.8
Organic Hass Avocado	Organic Strawberries	0.02	1.7
Organic Strawberries	Organic Baby Spinach	0.02	1.4
Organic Baby Spinach	Organic Avocado	0.01	1.7

# Cart Optimization

**Bag of Organic Bananas**

Organic Baby Spinach  
Organic Hass Avocado  
Organic Lemon  
Organic Strawberries  
Organic Yellow Onion

**Organic Strawberries**

Organic Raspberries  
Organic Hass Avocado  
Bag of Organic Bananas  
Organic Baby Spinach



05

# Recommendations





# Recommendations

## 01 Promotions & Marketing

- Targeted marketing campaigns on Organic produce



## 02 Encourage Frequent Purchases

- Personalize recommendations based on purchase history, frequent purchases, and similar products purchased by other customers

## 03 Customer Retention

- Offer Subscription and/or Loyalty Rewards programs

## 04 Enhance Product Placement

- Implement "quick add" or one-click reordering features for faster checkout
- 
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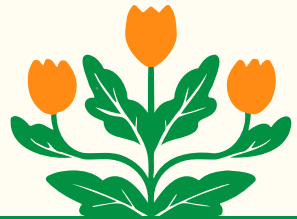


# 06 Future Steps



# Future Steps

- Use Apriori and Association rule results to build a recommendation system.
- Explore alternative ways to handle class imbalance and engineer more features.
- Apply Deep Learning models to extract better insights from the data.



# Thanks!



**Do you have any questions?**

**Email:** [stuartclark281@gmail.com](mailto:stuartclark281@gmail.com)

**Website:** <https://github.com/sclarkHOU>





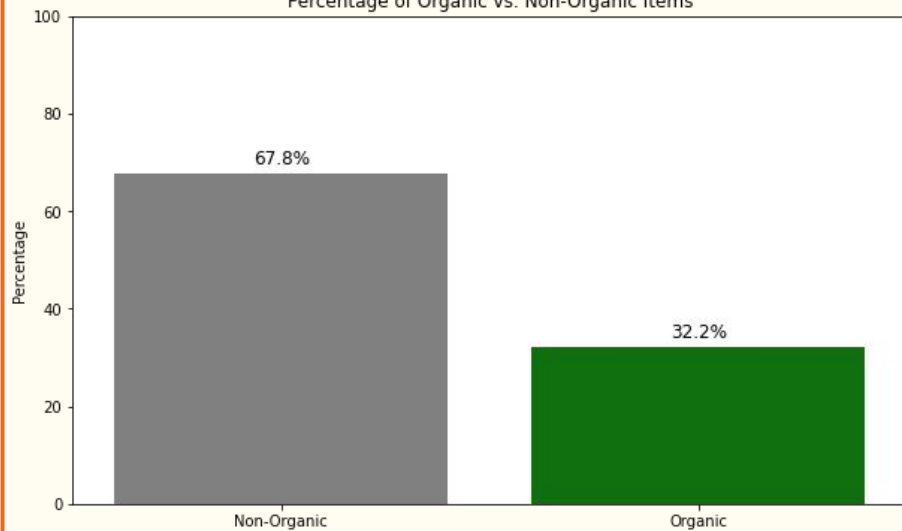
# Appendix



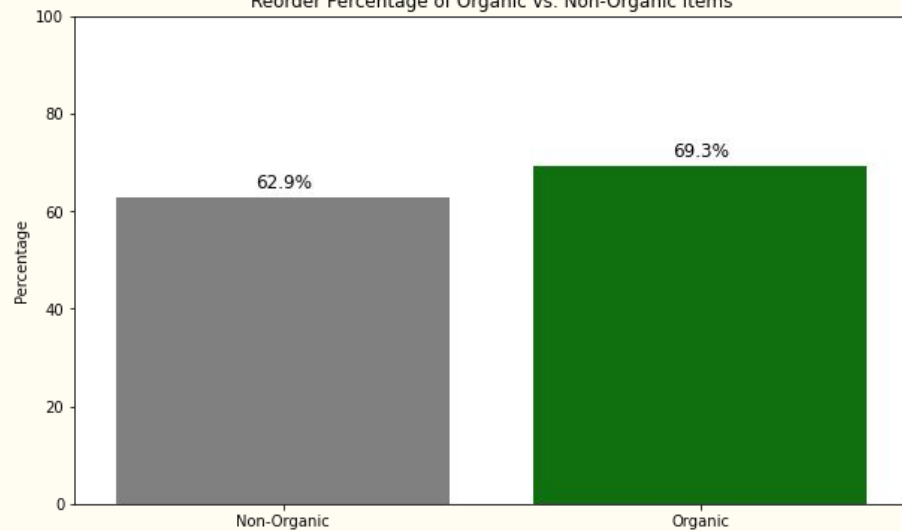


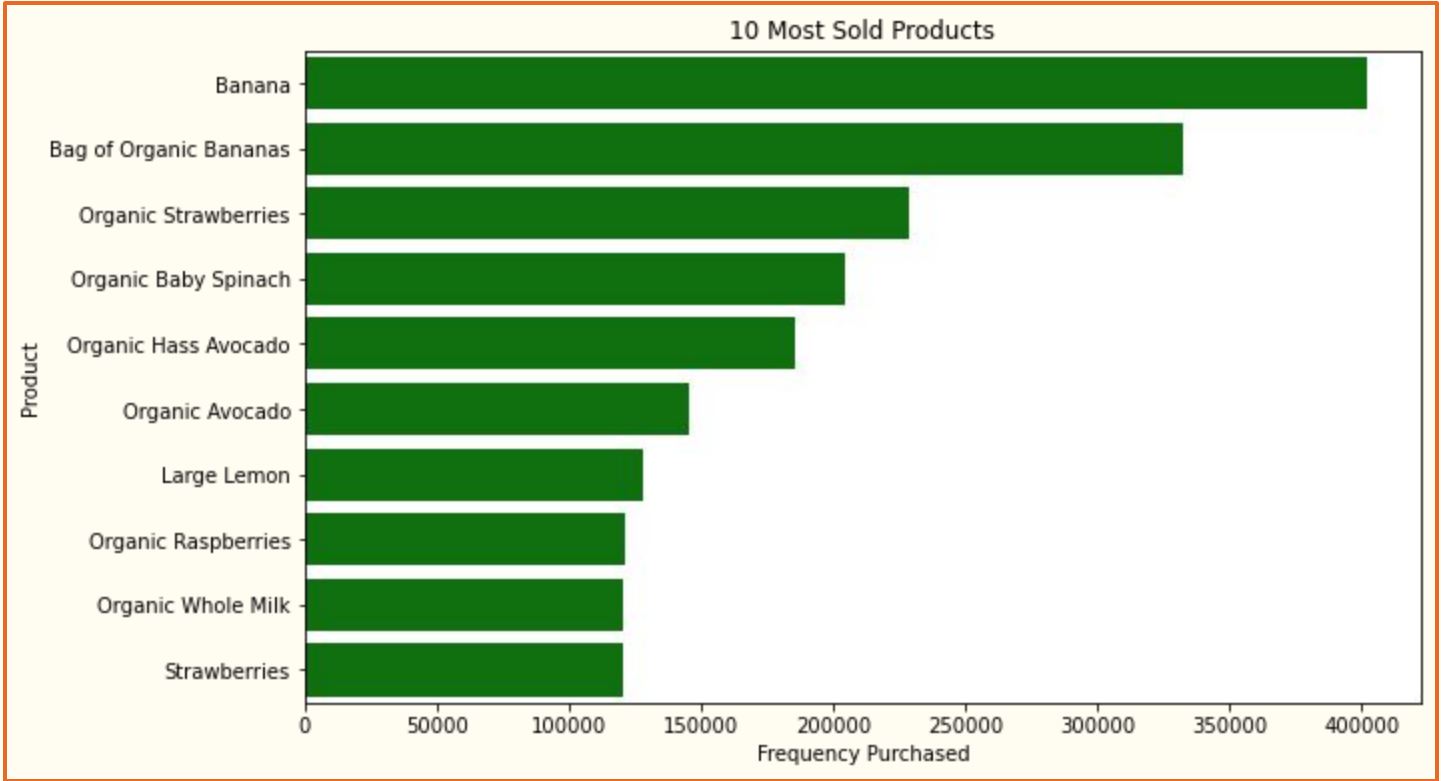


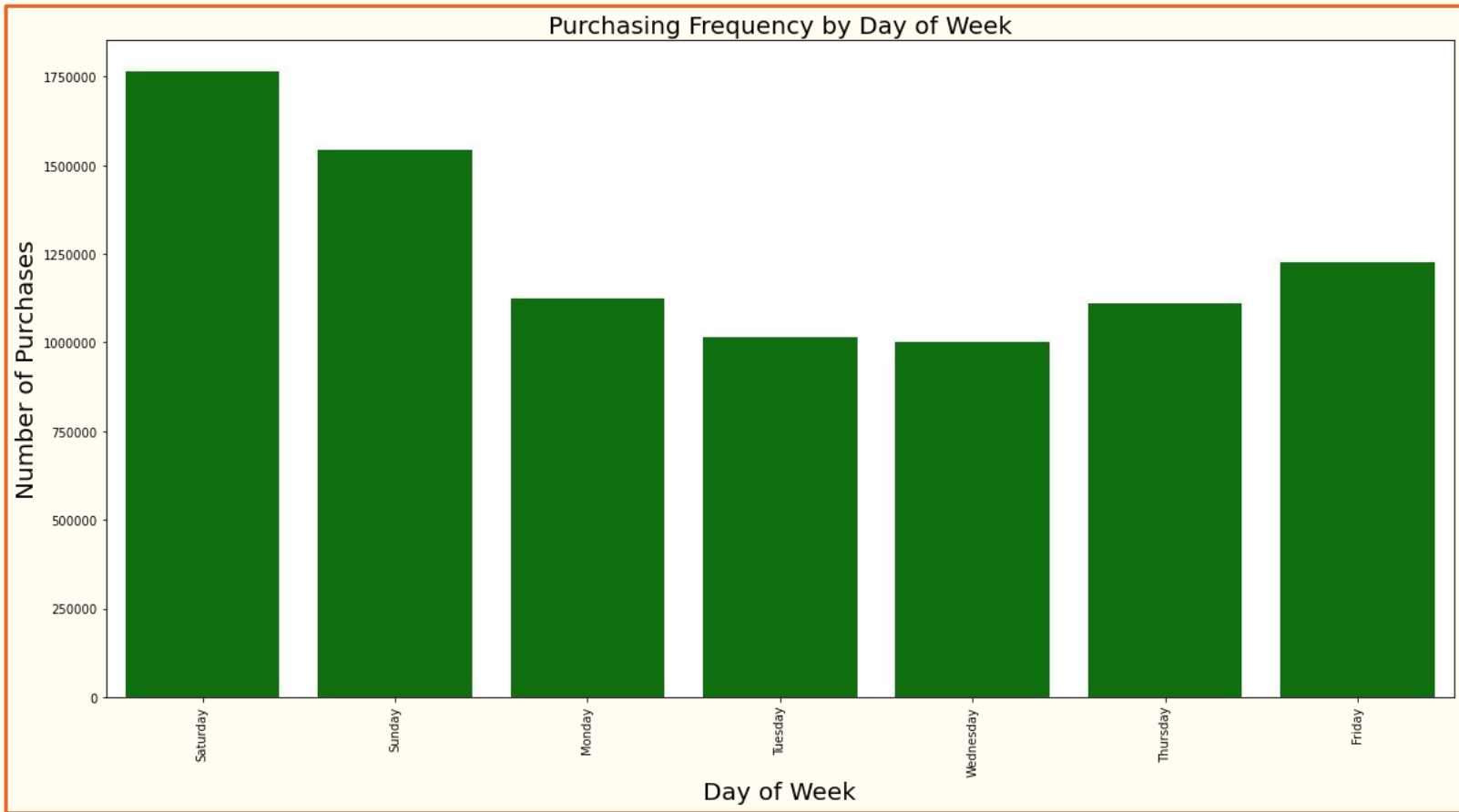
Percentage of Organic vs. Non-Organic Items

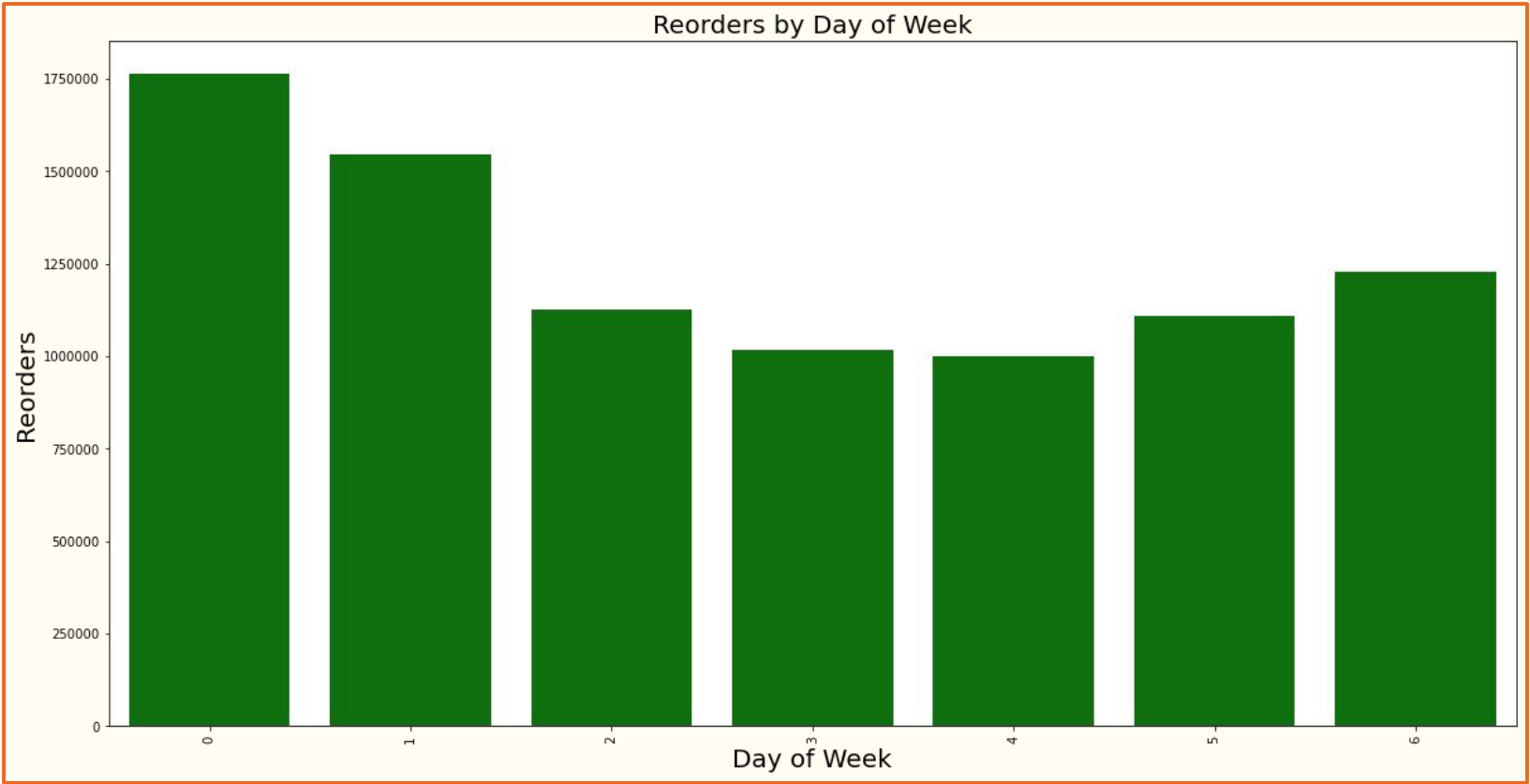


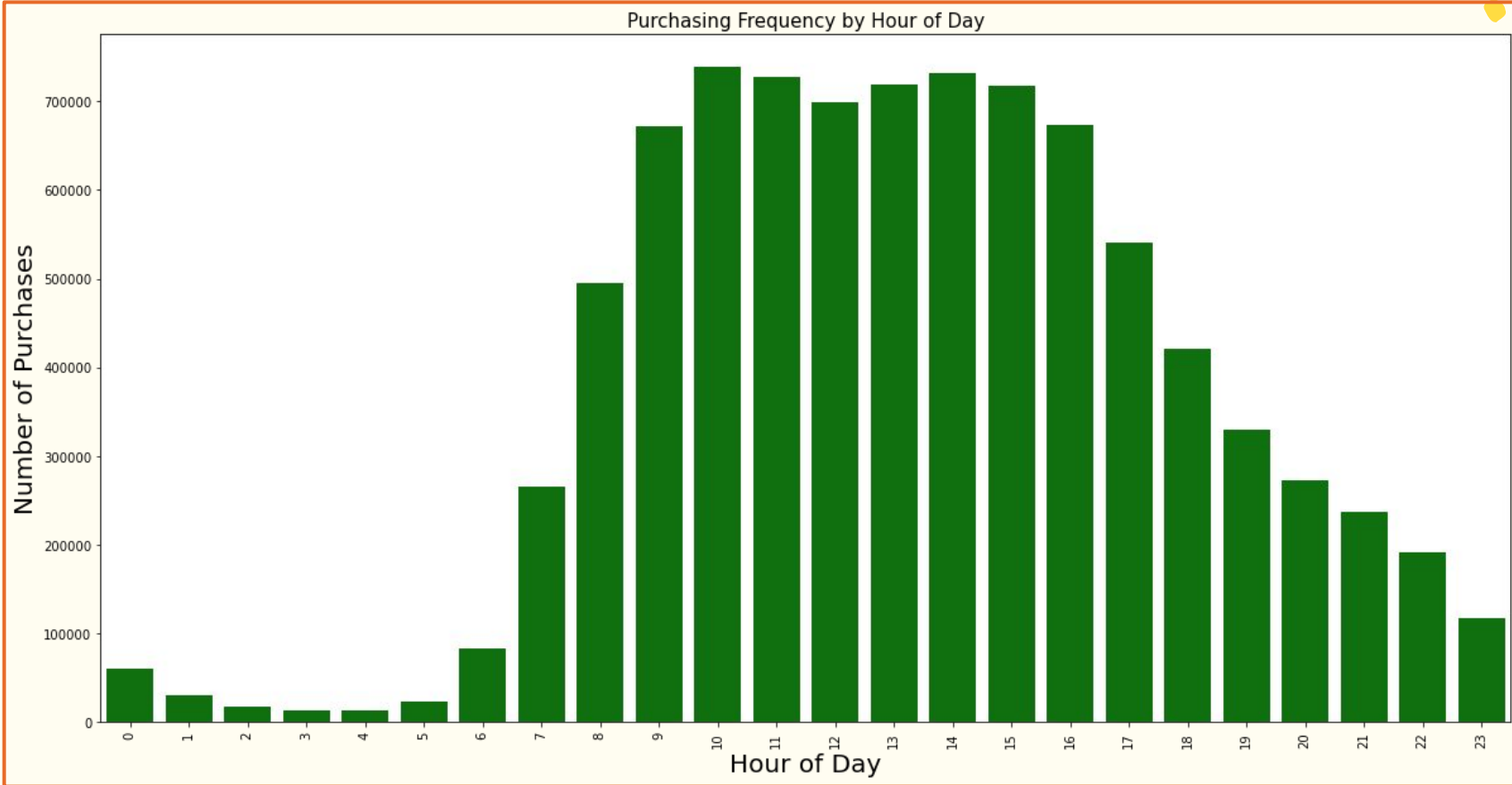
Reorder Percentage of Organic vs. Non-Organic Items



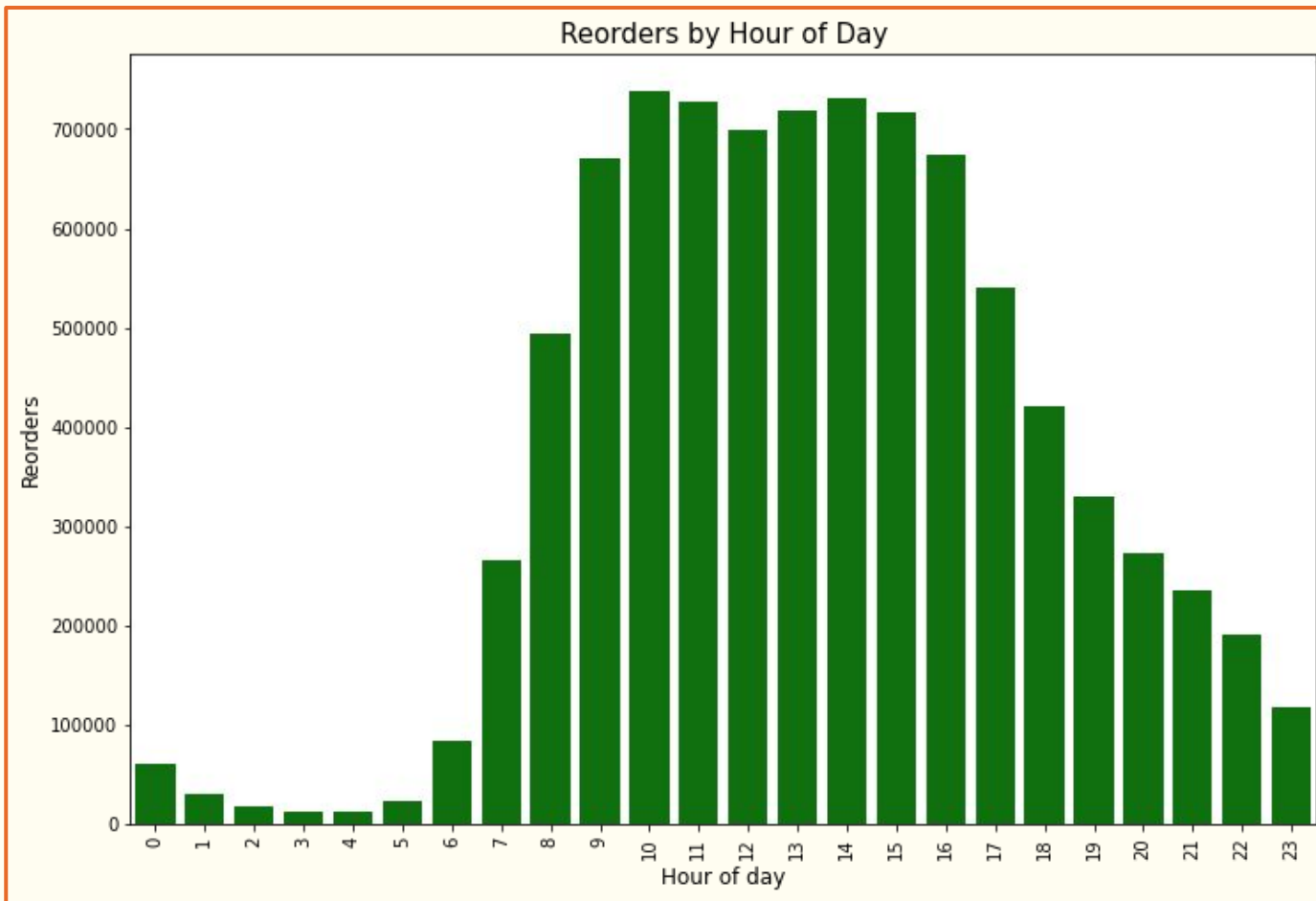


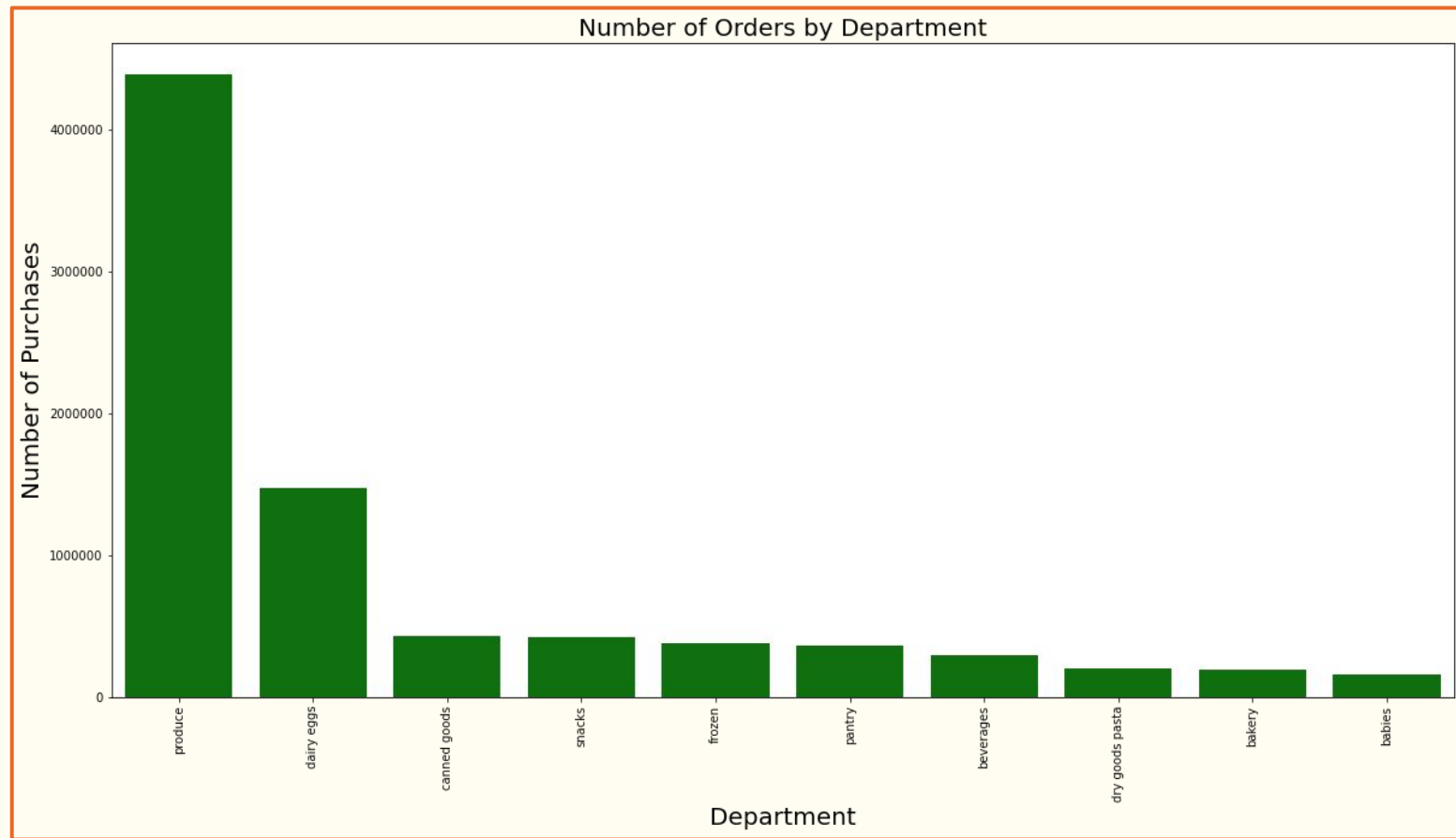


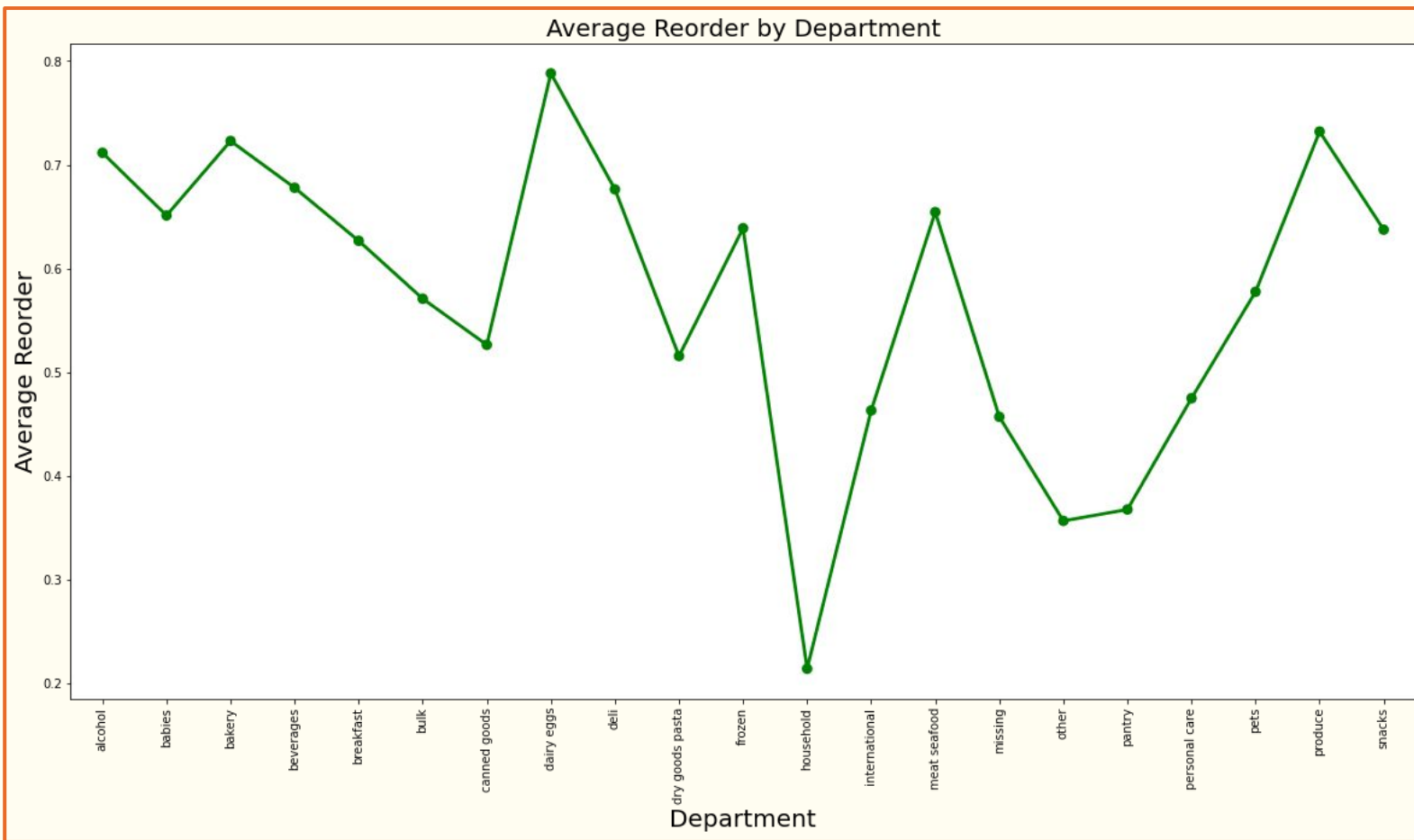




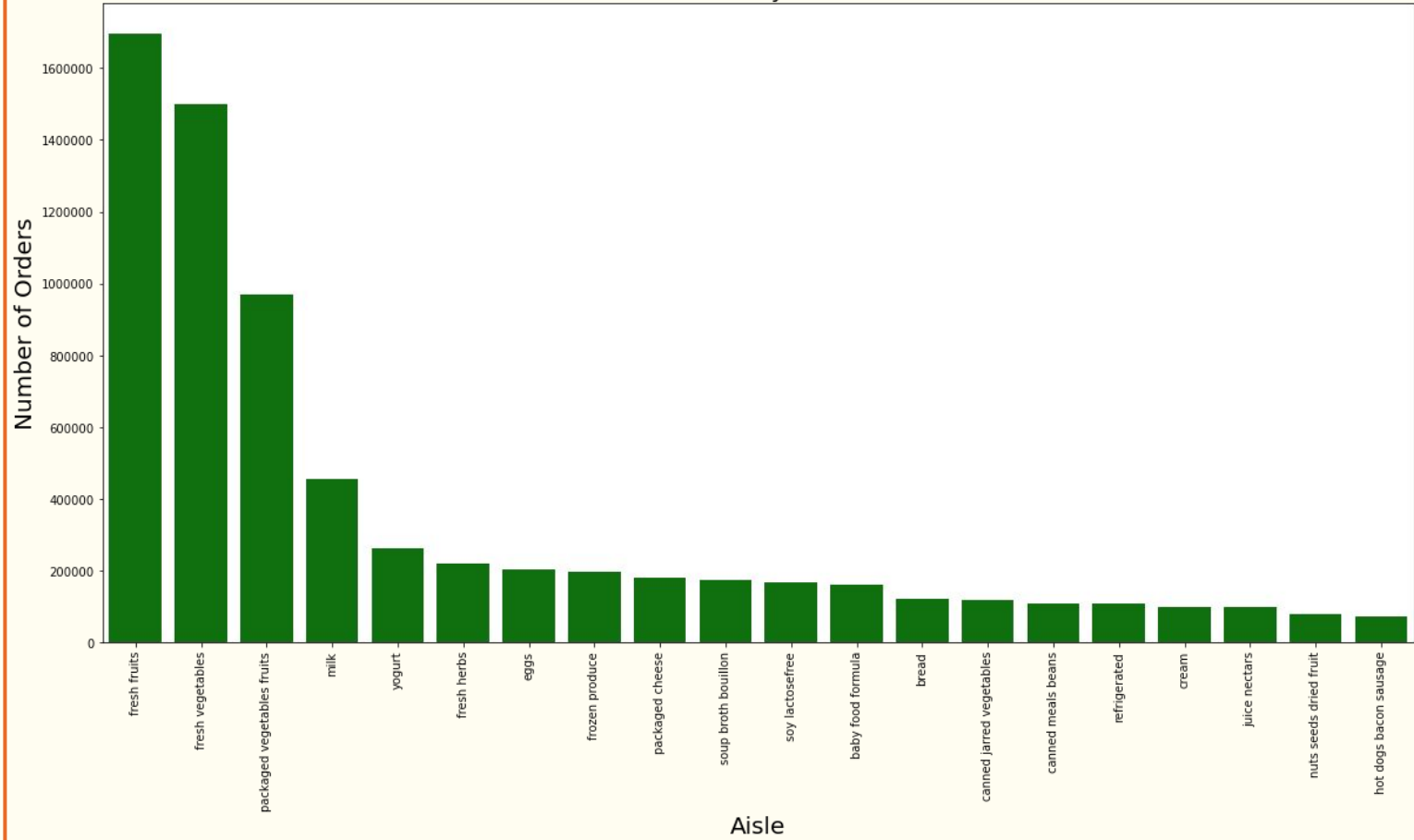








Orders by Aisle



Average Reorder by Aisle

