



Organic Market Basket Analysis

GreenGrocer



Background

- Texas A&M - Environmental Science
- 6 years in IT Recruitment & Sales
- Flatiron School - Data Science

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Portfolio: github.com/sclarkHOU





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Bottom Line

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



01 Business Overview





Overview

The organic food 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 position itself to tap into this expanding market by introducing an Organic grocery delivery service.



Why is this Important?



With increasing concerns about the use of pesticides, GMOs, and other harmful additives in conventional food products, more people are turning to organic food for a healthier and sustainable diets.

6%

Total food sales in the
U.S.

76%

Of Americans purchased
organic food products in
the last month

82%

U.S. households have
organic food in their
kitchens

02 Data Overview





The Data

The dataset used comes from online 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

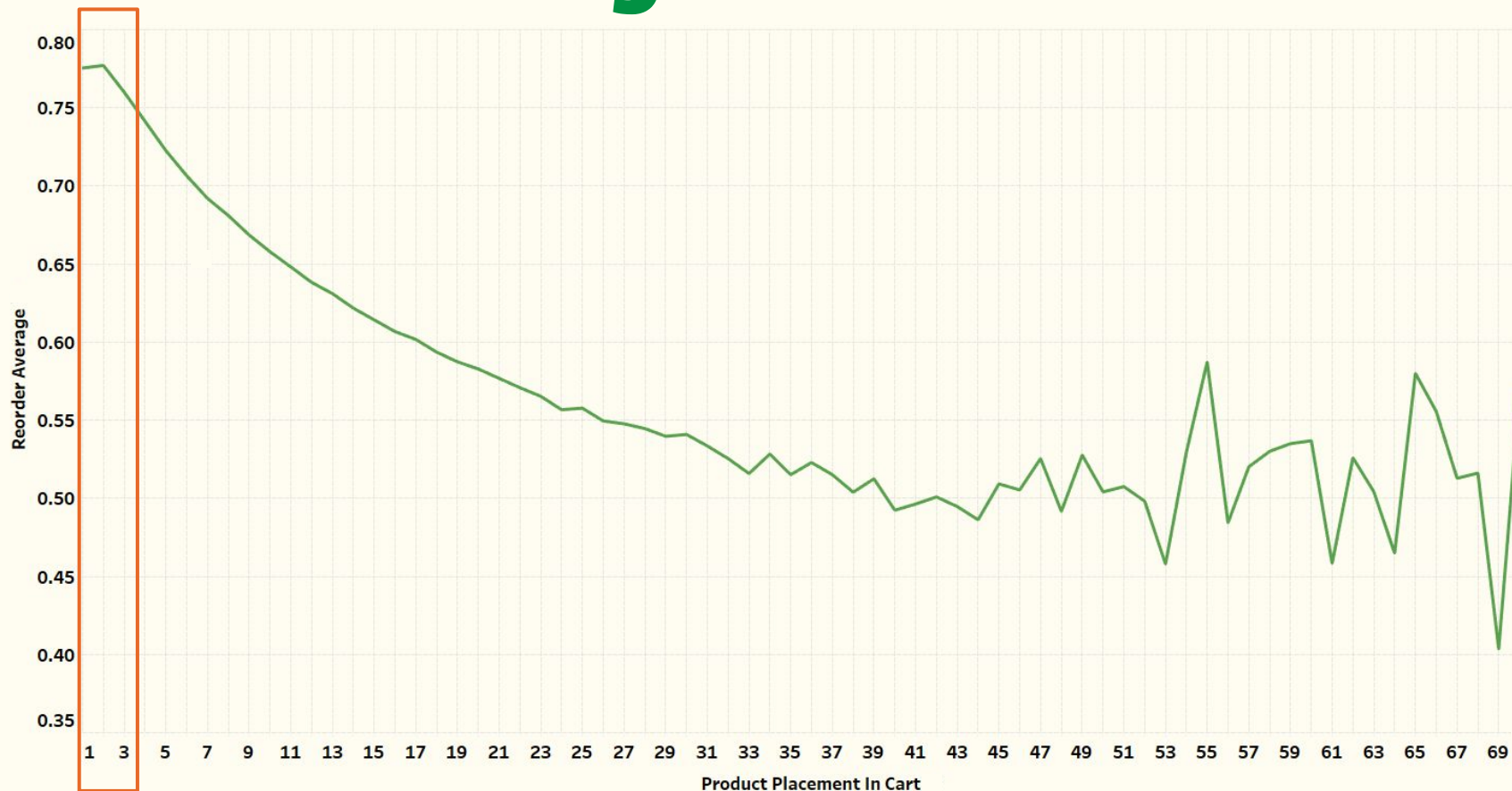


Product Placement



Produce, Produce, Produce!

You Only Get One Shot



04 Modeling



Results

75%



Decision Tree

Baseline

84%



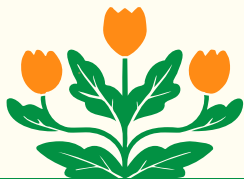
XGBoost

82%



Logistic Regression

Feature
Importance





Apriori & Association Rules

A	B	Support	Lift
Organic Bag of Bananas	Organic Hass Avocado	2%	1.8
Organic Hass Avocado	Organic Strawberries	2%	1.7
Organic Strawberries	Organic Baby Spinach	2%	1.4



Cart Personalization

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

- Use 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

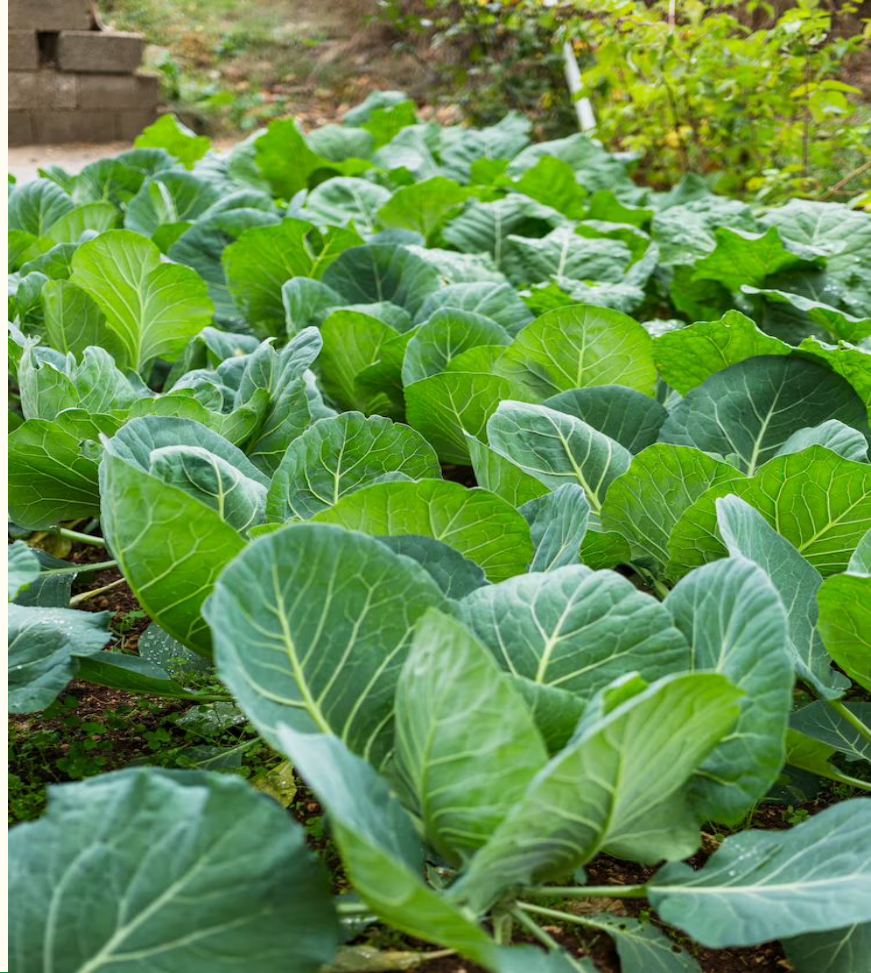
- Offer Subscription and/or Loyalty Rewards programs

04 Enhance Product Placement

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




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.
- 



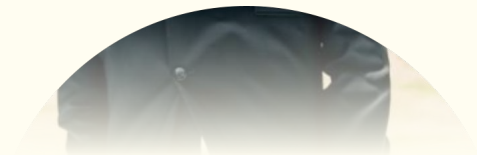
Thanks!

Do you have any questions?

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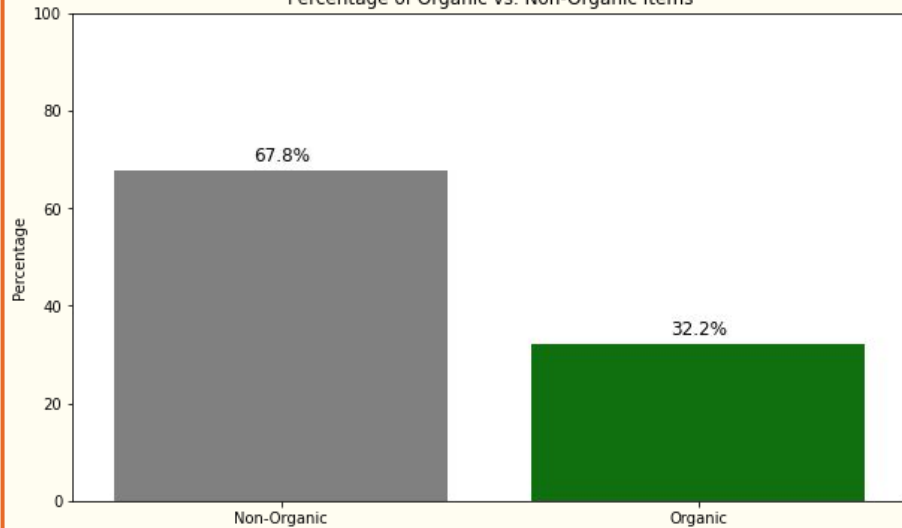


Appendix

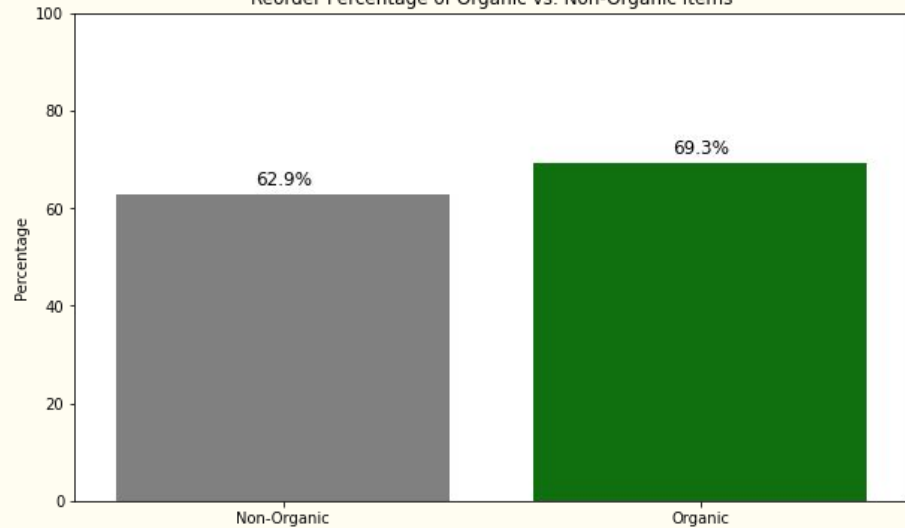


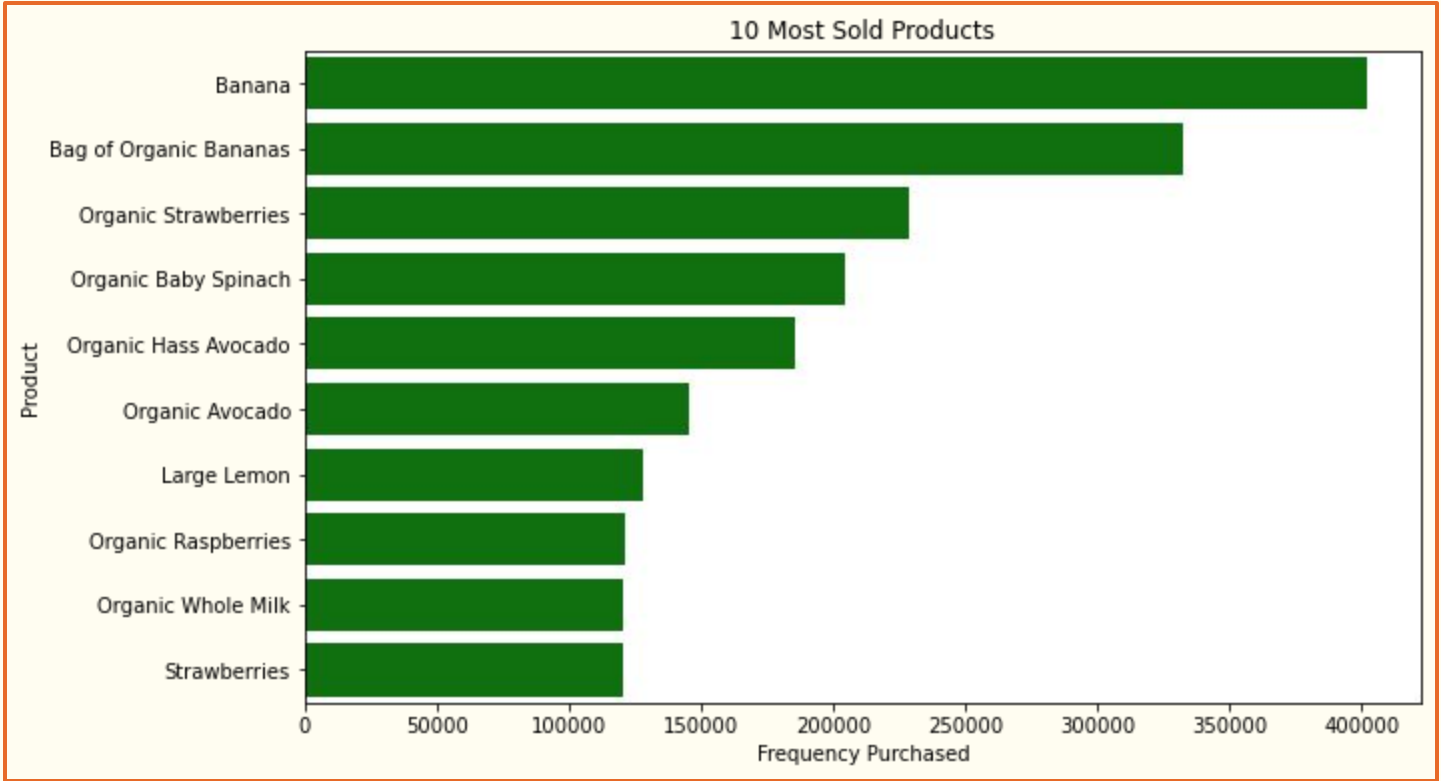


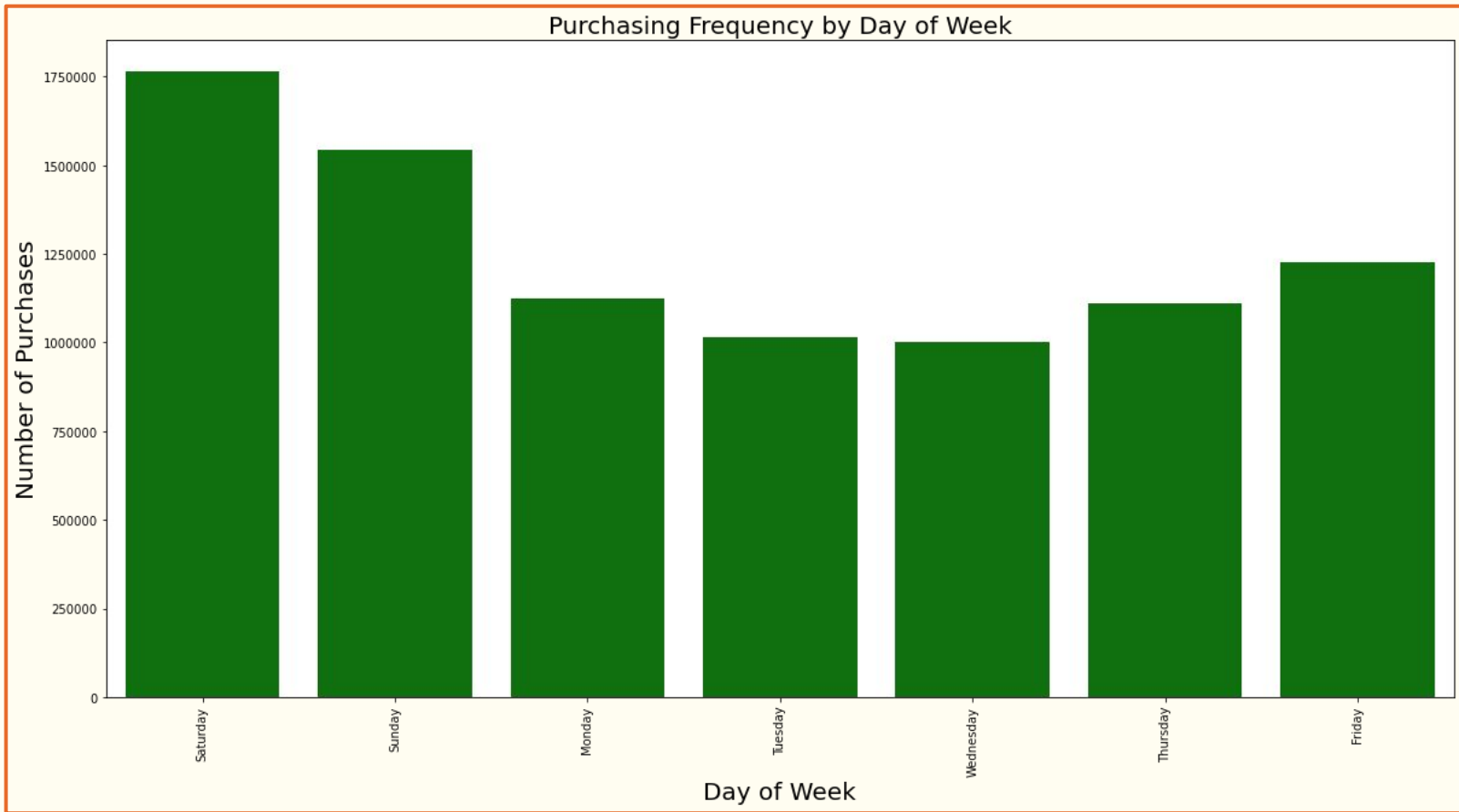
Percentage of Organic vs. Non-Organic Items

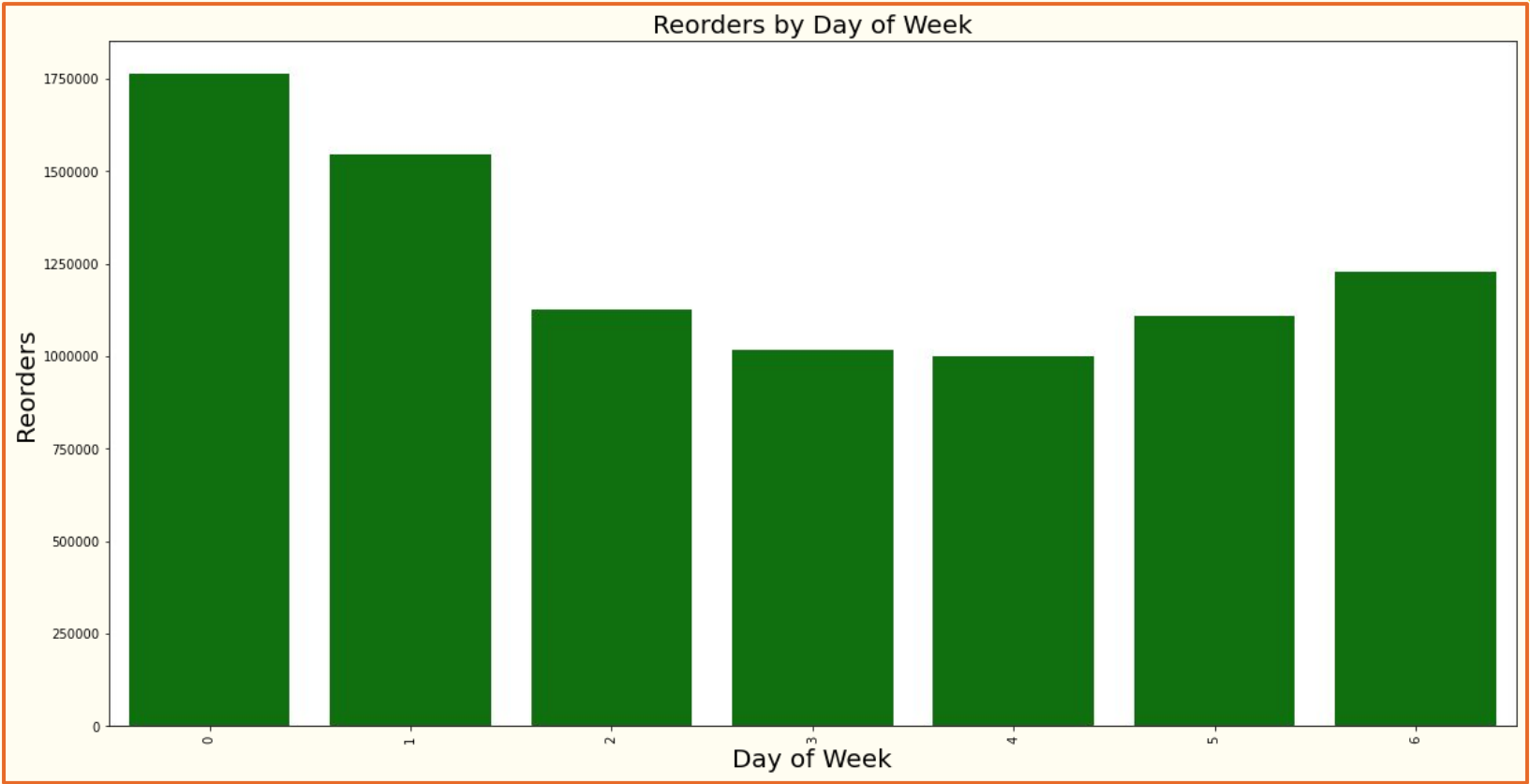


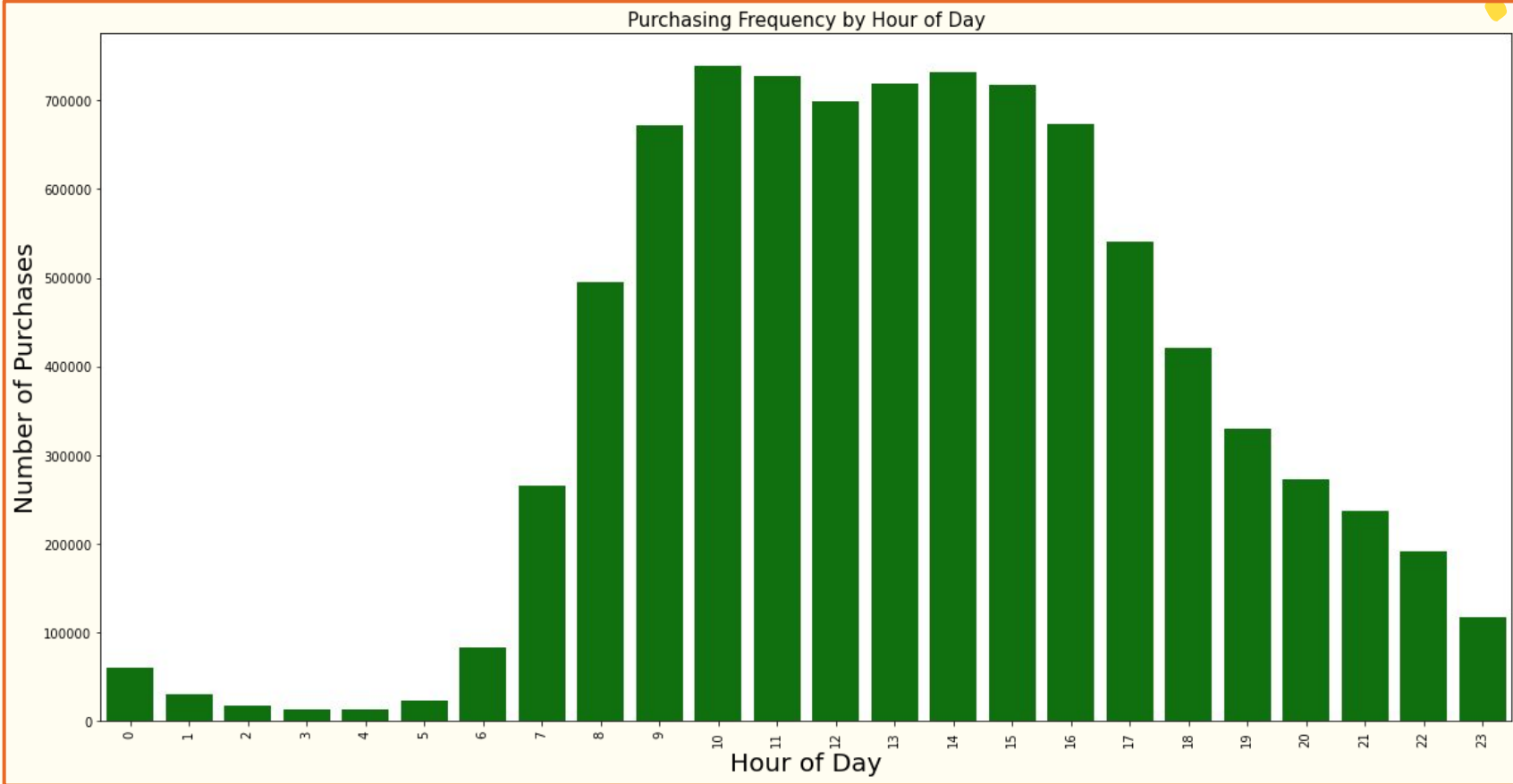
Reorder Percentage of Organic vs. Non-Organic Items

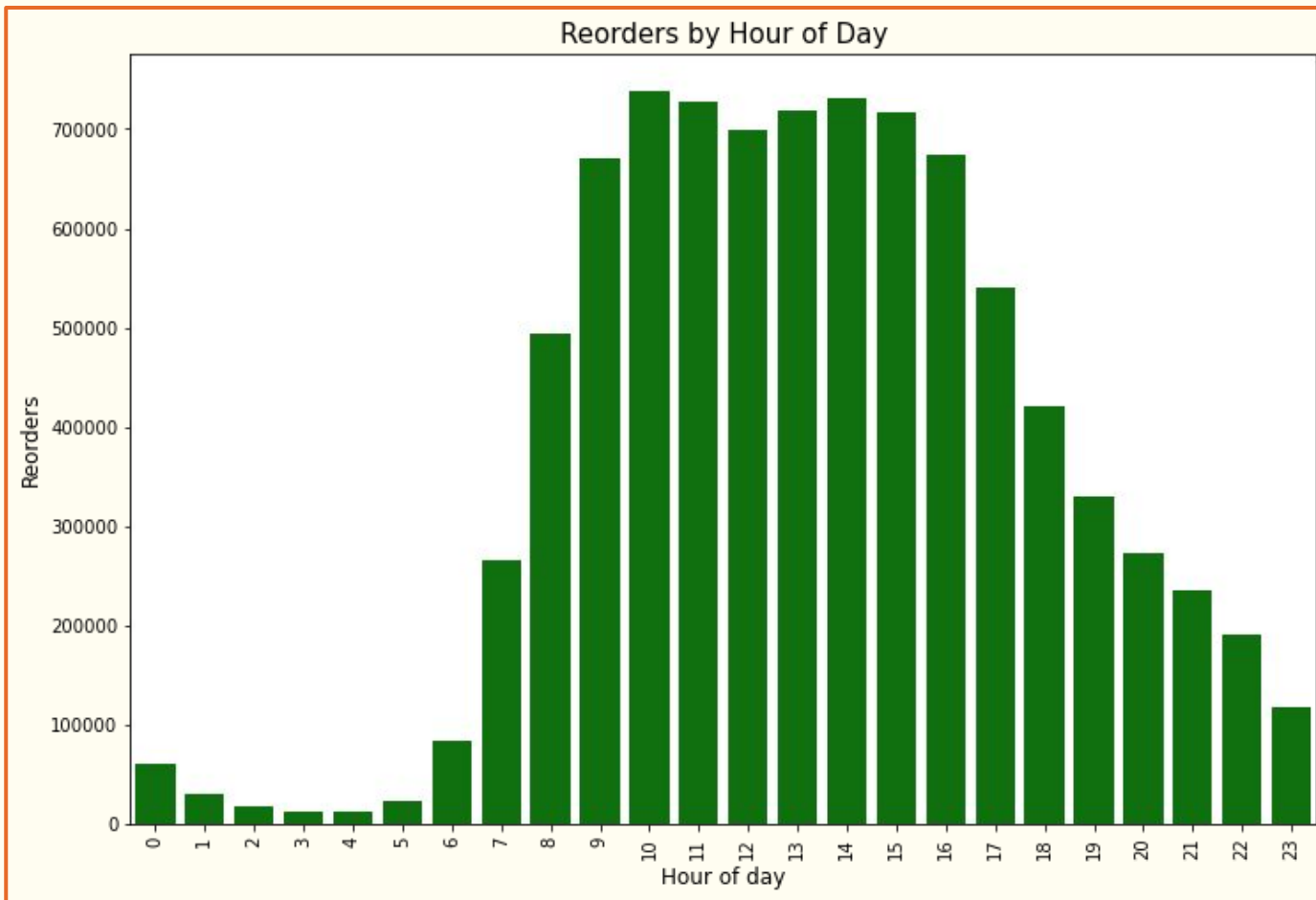


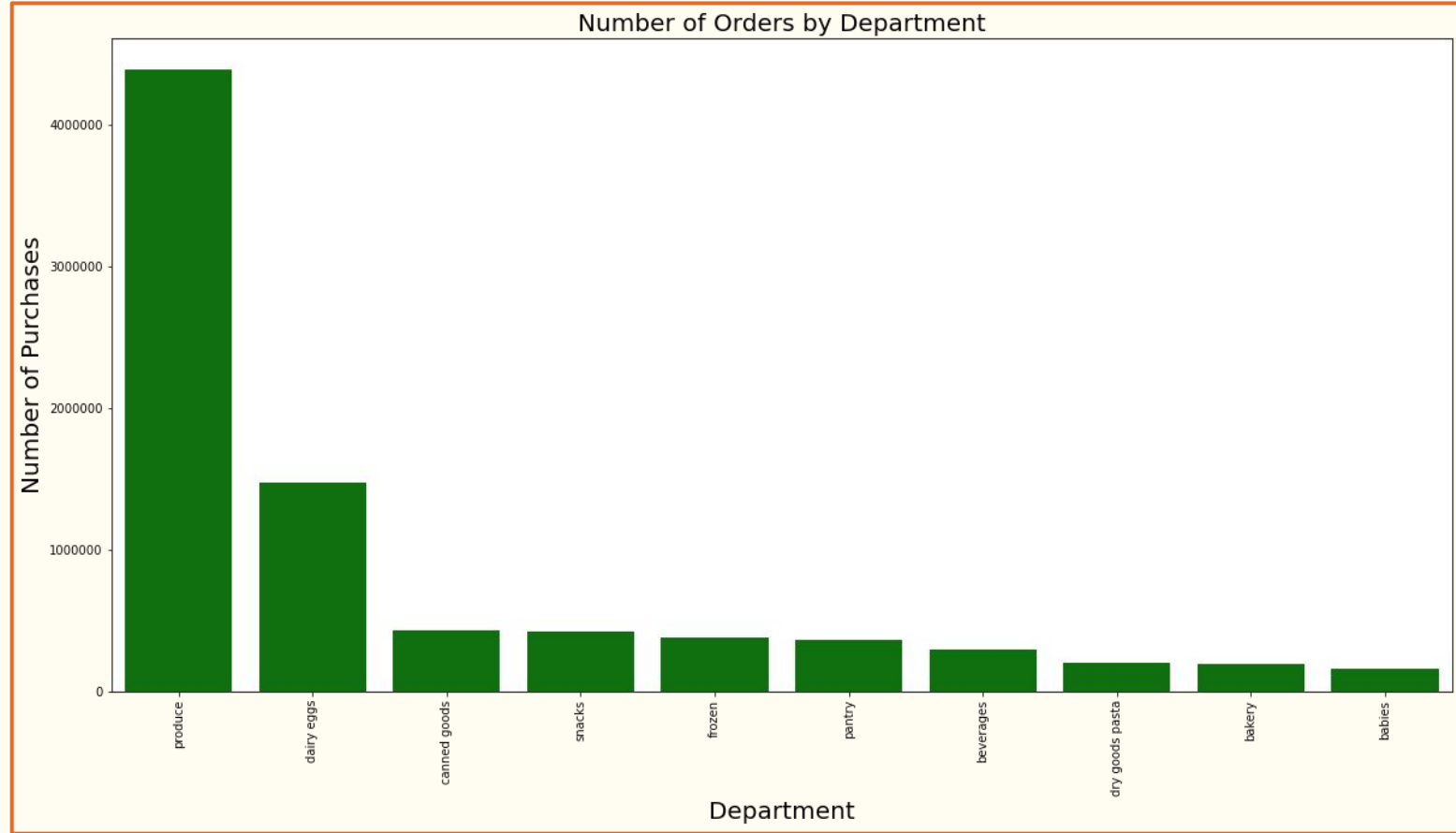


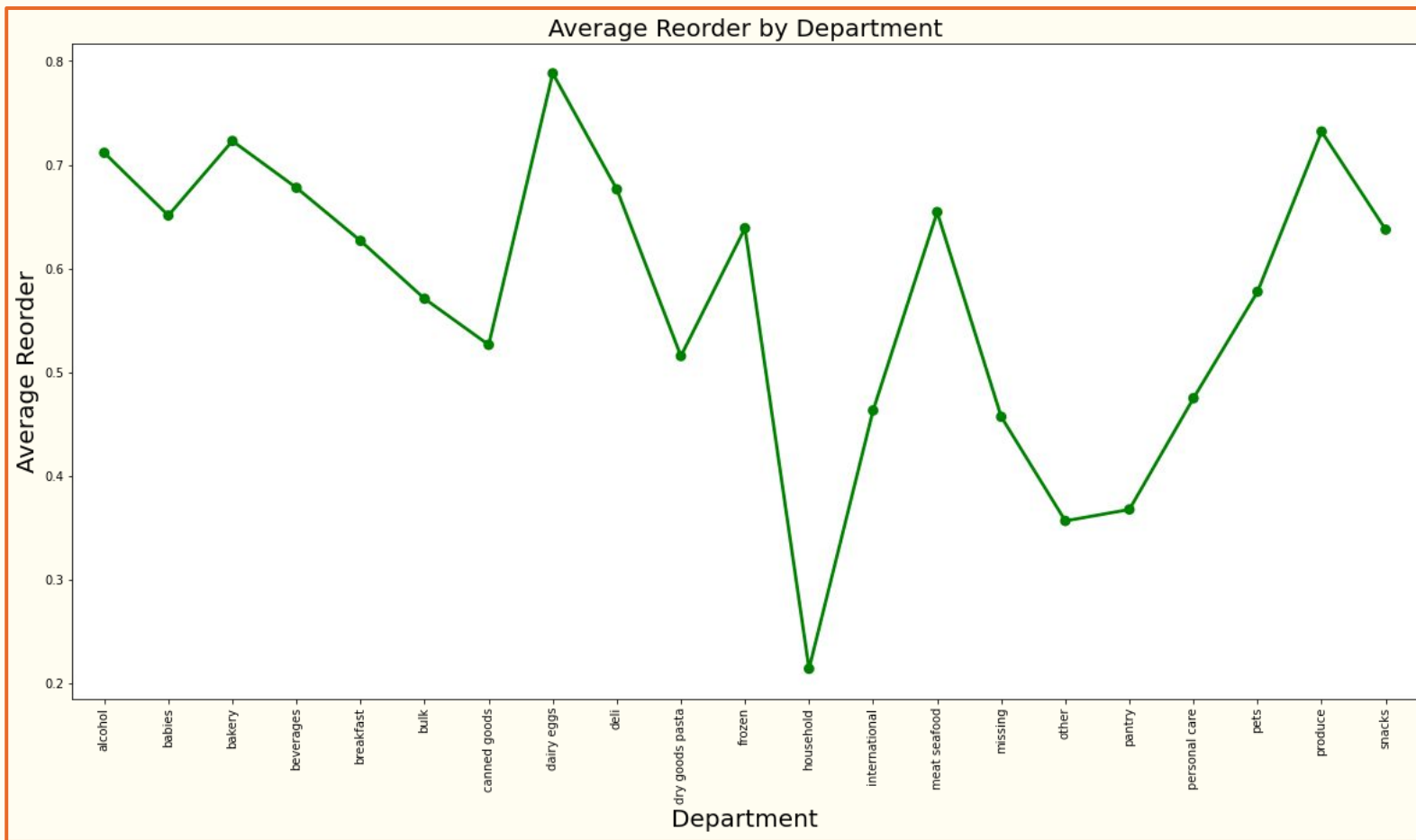












Orders by Aisle

