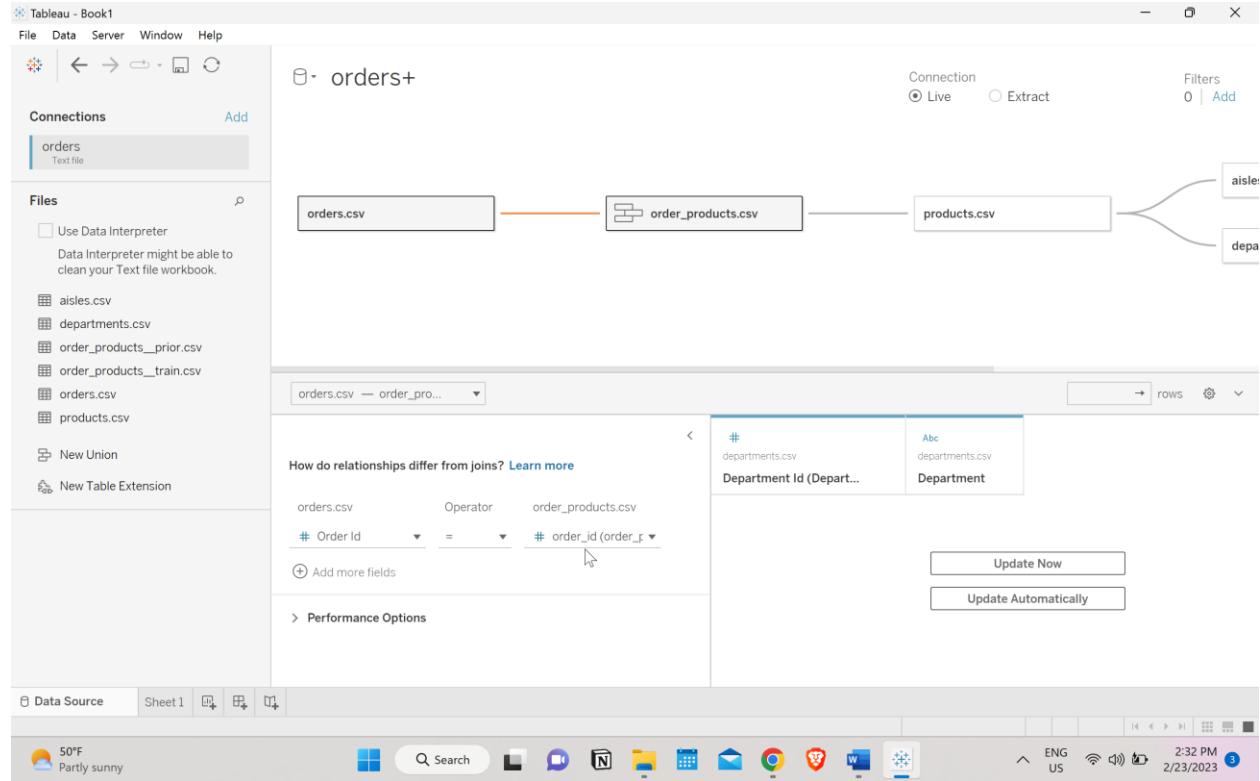
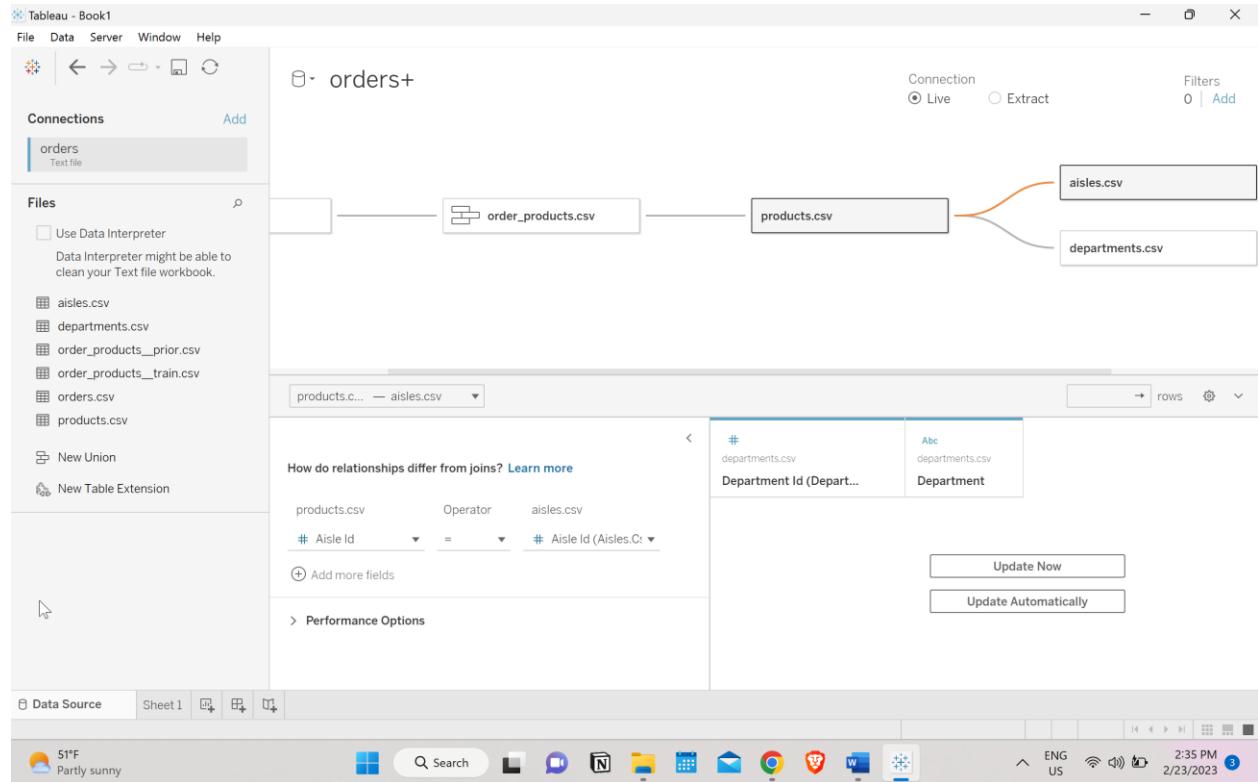
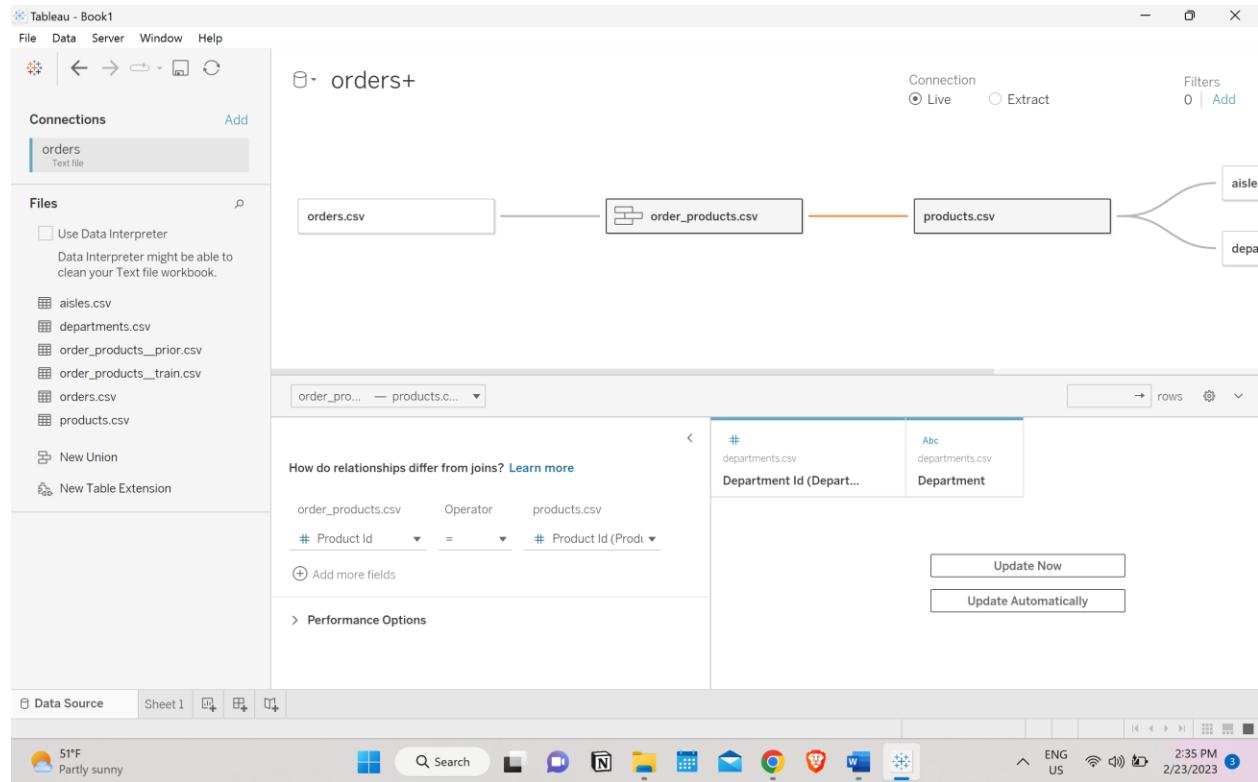


# Instacart Market Analysis

## Section 1



## Data Visualization



## Data Visualization

The screenshot shows the Tableau Data Source setup window. On the left, the 'Connections' pane lists 'orders' (Text file). The main area displays a data flow diagram for the 'orders+' connection. It starts with 'order\_products.csv' and 'products.csv' connected by a line, which then connects to 'aisles.csv' and 'departments.csv'. A tooltip for 'products.csv' indicates a relationship to 'departments.csv' with the text 'products.c... — departme...'. Below the diagram, a table preview shows columns from both 'products.csv' and 'departments.csv': 'Department Id (Depart...)' and 'Department'. A relationship editor at the bottom shows the condition '# Department Id' = '# Department Id (C' with operators like '+', '=', and '<'. Buttons for 'Update Now' and 'Update Automatically' are present. The bottom navigation bar includes 'Data Source', 'Sheet 1', and various icons. The system tray at the bottom right shows the date and time as 2:36 PM, 2/23/2023.

## SECTION 2

Answer 1. The primary groups and target audience for our reports are Company's decision-makers and key stakeholders.

- Sales and Marketing teams
- Supply chain and Operations Departments
- Finance Team
- Store/Inventory Managers
- Senior Leadership
- Product Managers and Tech team

Answer 2. The list of Executives that are the key decision maker in our target audience are

- Leadership:
  - CEO- Chief Executive Officer
  - CMO- Chief Marketing Officer
  - CFO- Chief Finance Officer
  - COO- Chief Operations Officer
  - Sales Head/ VP of sales and Sales Managers
  - Business Development Managers

Answer 3.

The members of the target audience have deep experience working with this data.

- **Sales Team:** This data is extremely important to sales teams for defining key success metrics and performance indicators. Therefore, they have good expertise in using this data.
- **Product Manager:** This information is essential to Product managers as it helps better organize the app feed, product search, and recommendation. Therefore, they have deep experience in this data.
- **Marketing Team:** The marketing team has good experience working with this data because it helps them understand user interests and plan their marketing campaigns.

Other members of the audience may not be as familiar with this data compared to the above group.

Answer 4.

The scope of our audience is narrow. The analysis that we have presented is based on the company's sales data. The primary goal is to analyze user buying patterns and sales trends to optimize the business and take the required steps to grow the business.

Answer 5.

## Data Visualization

The audience cares about the following points:

- Understanding customers: when they order the most, buying patterns, most sold products etc.
- Increasing sales and expanding the business.
- Understand which product segments are working and which are not, helping to better manage inventory and sales.

Answer 6

The audience needs to take the following actions based on our analysis:

- i. Weekends have more order volume compared to weekdays. The company can get more delivery partners and manage inventory, and stock the high-demand items so that the customers get what they need as quickly as possible.
- ii. Healthy Foods and Organic items are high in demand. Customers order a lot of Fruits and Vegetables. The company can partner with more companies/ farms that make organic food to expand its product line.
- iii. The marketing team can use our analysis to run specific campaigns and discounts during weekends or when the orders are less to nudge customers to buy more from the company. They can use our most selling product and advertise it so that new customers try these items.
- iv. Customer re-ordering pattern is very useful to the operations and inventory managing teams as it helps them optimize the supply chain and reduce any wastage. Since most orders are in 30 days period, the company can appropriately increase the package size and bundle items for discounts and offers.

Answer 7.

The stakes or the data that matters the most is of orders. As it is a business of online grocery shopping, understanding orders are very important and are the key to increasing revenue. The primary goal of any company is to increase users and revenue, thus increasing profits.

Answer 8.

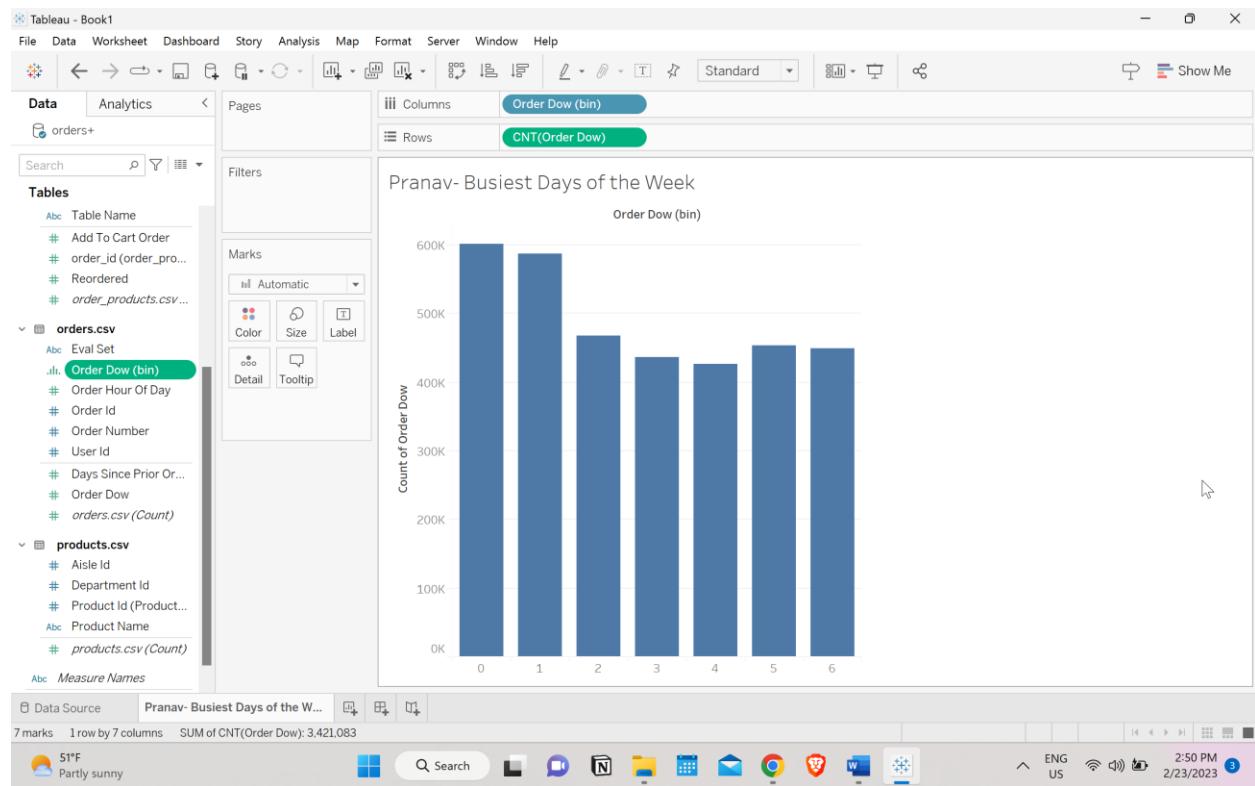
The big idea is to use this data to expand the business and **optimize** its operations, tech, and marketing channels to **minimize expenses by managing the inventory of products** and **increase profits** by understanding customers and their orders.

Increase recommendations and SEO(Order of products on the app or website) for best products and offer discounts for less popular.

## Data Visualization

### SECTION 3

a)

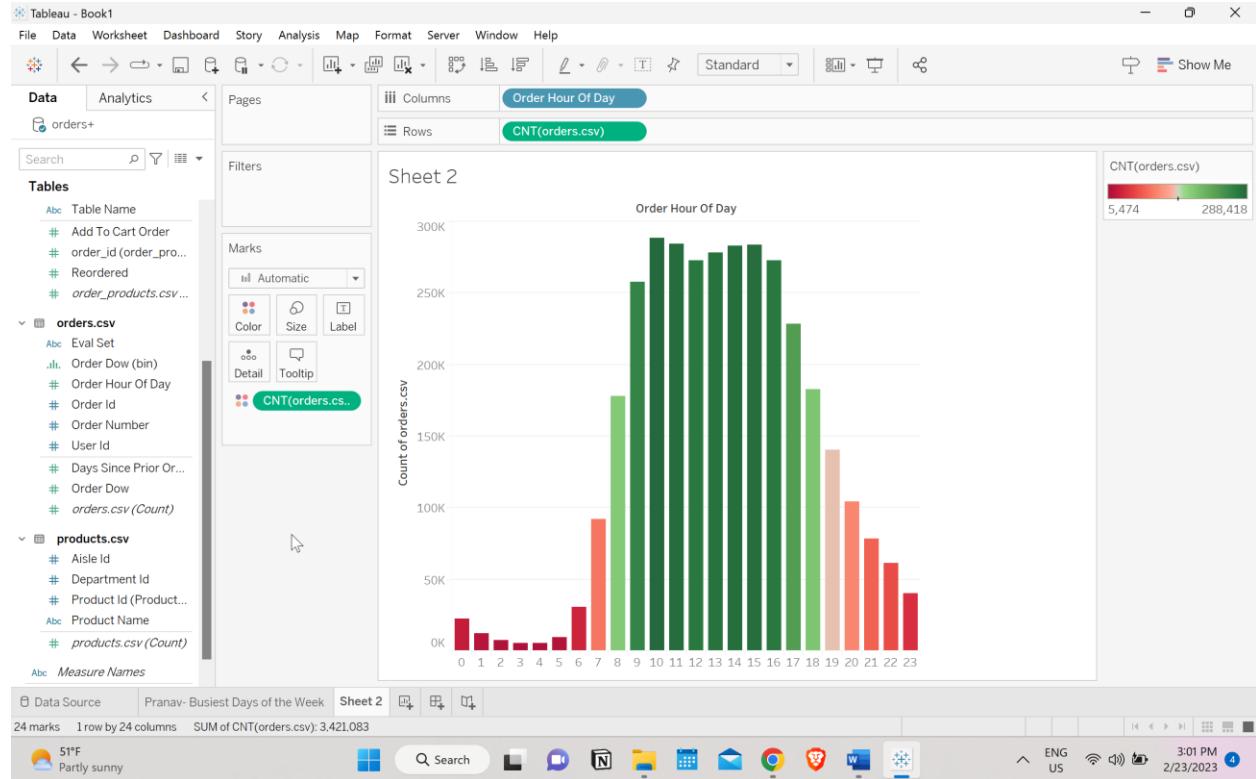


#### Answer to Question 1:

The two busiest days of the week are labeled as 0(Saturday) and 1(Sunday) in the above graph

## Data Visualization

b)



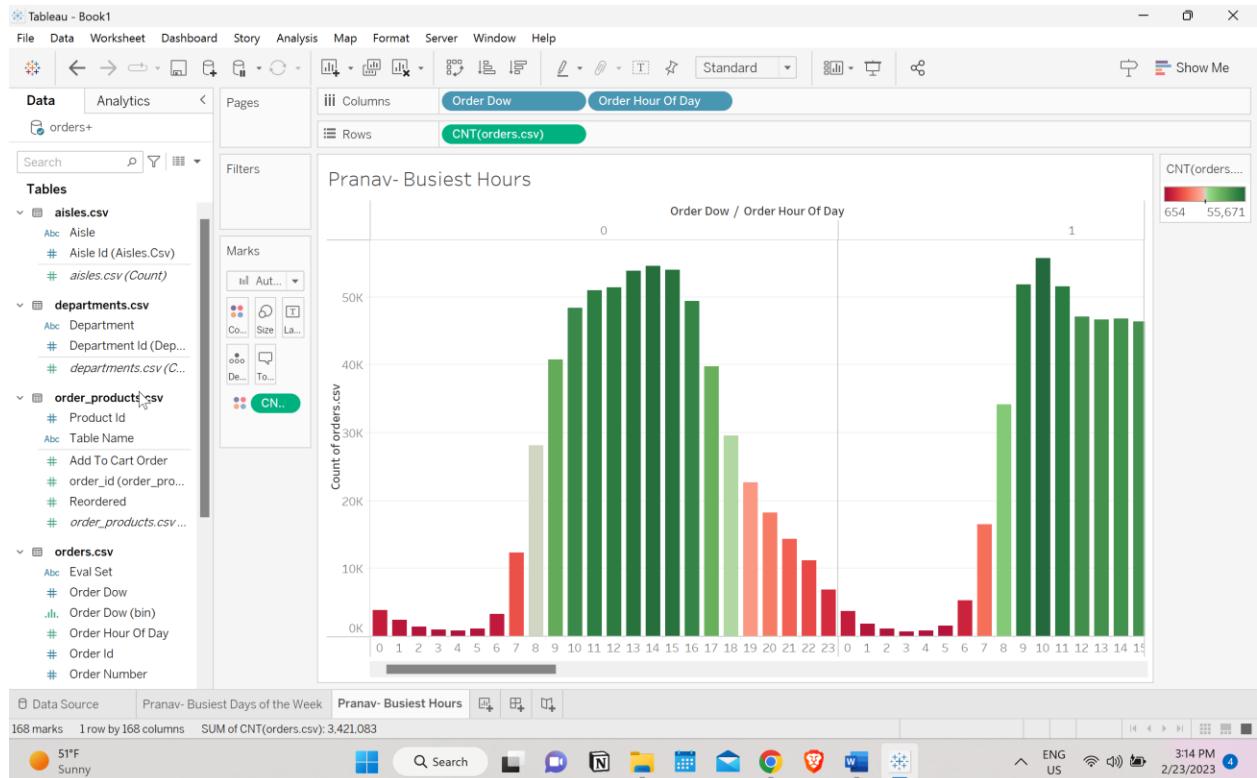
### Ans to Question 2:

The busiest 11 hours of the day are the ones that are:

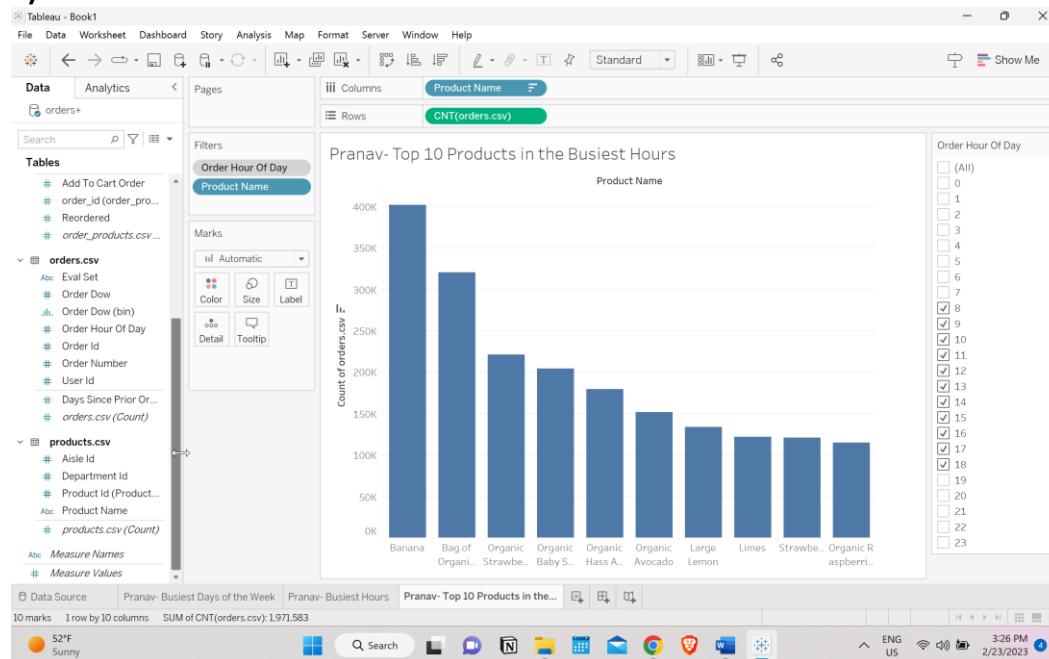
1. 10
2. 11
3. 15
4. 14
5. 13
6. 12
7. 16
8. 9
9. 17
10. 18
11. 8

They are marked in green in our Histogram, with the 10<sup>th</sup> hour being the busiest.

## Data Visualization



C)

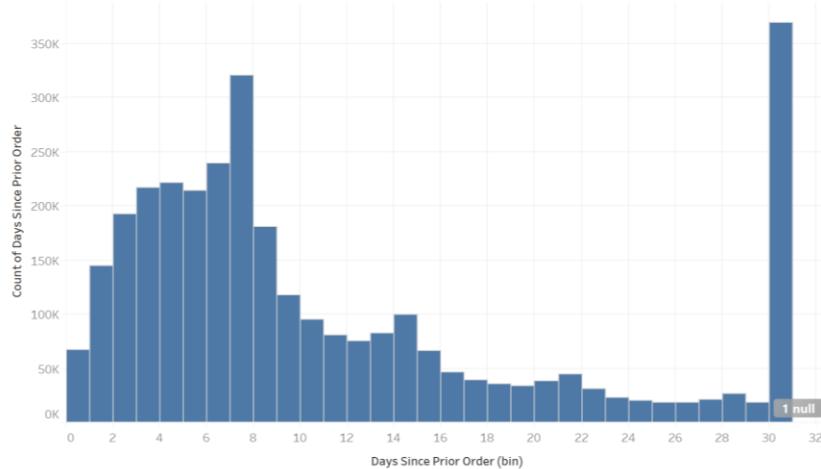


## Data Visualization

### Answer to Question 3:

The product is sold most often during the busiest hours- Banana.

d)



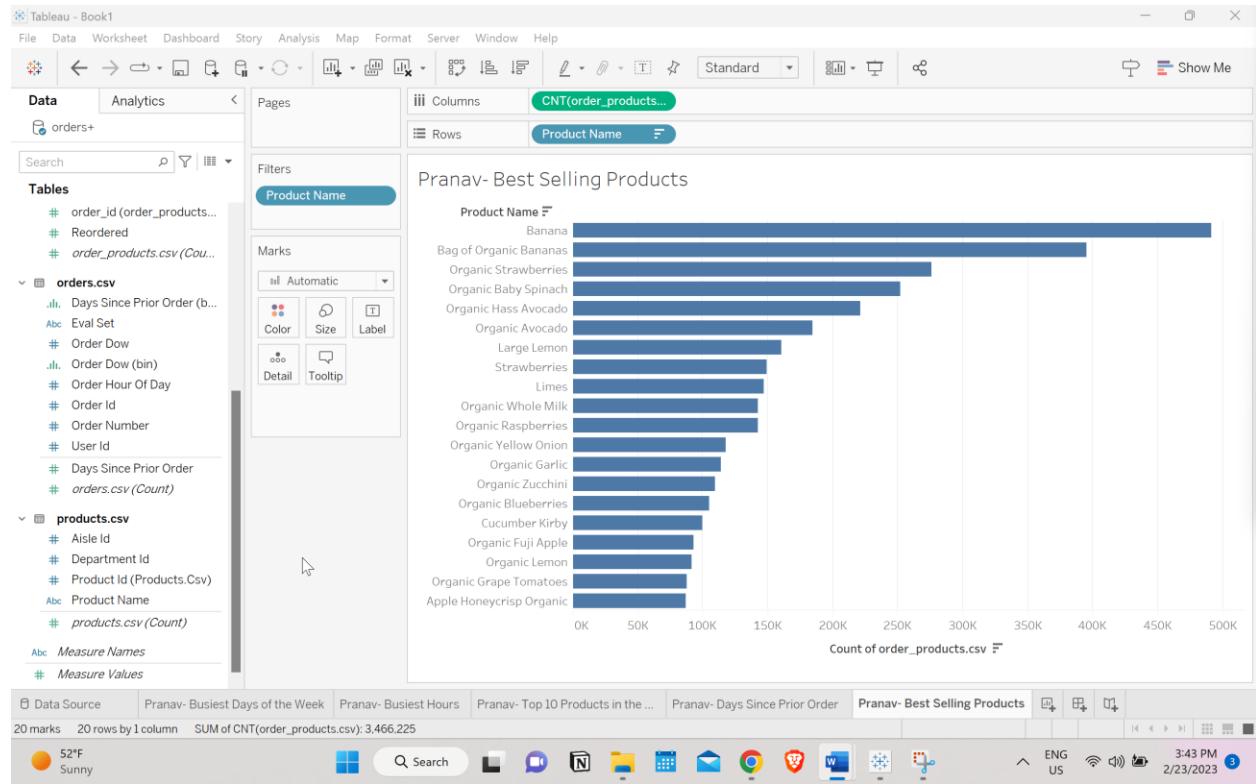
### Answer to Question 4:

Customers are most likely to order again in 30 days.

## 2. Product Analysis

a)

## Data Visualization

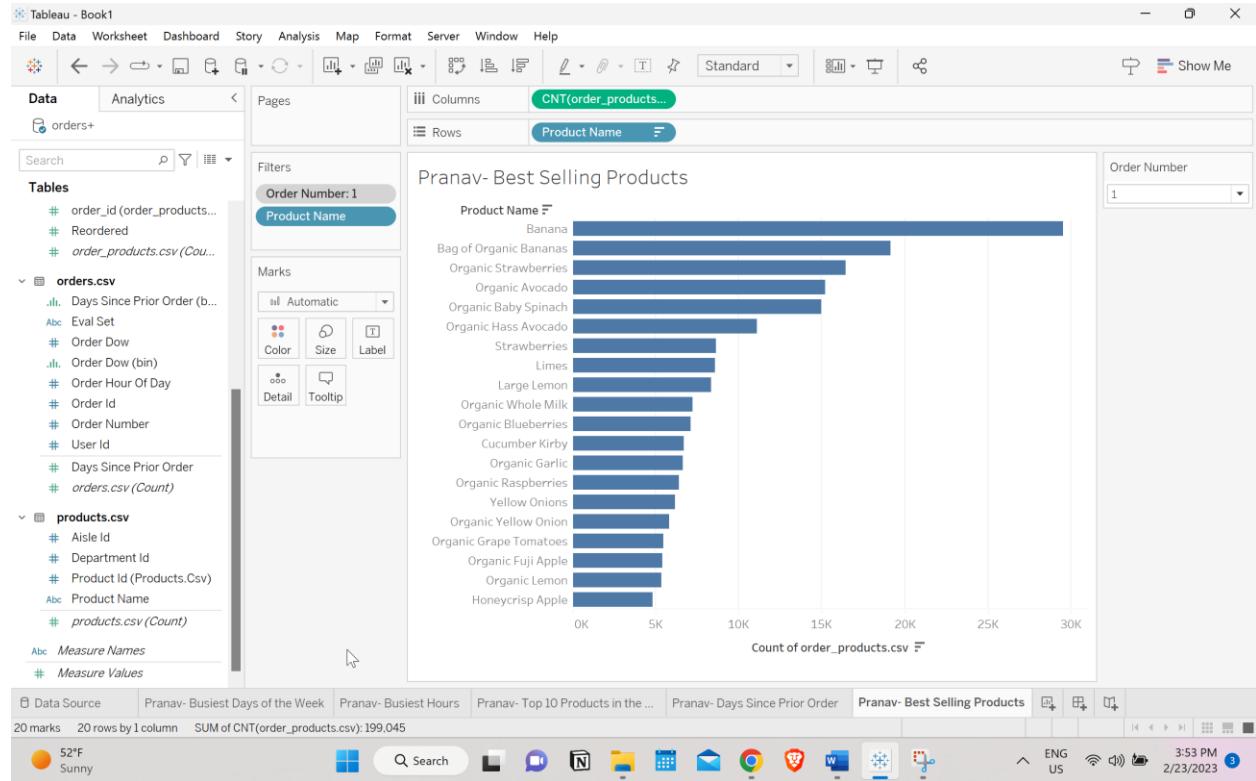


### Answer to Question 5:

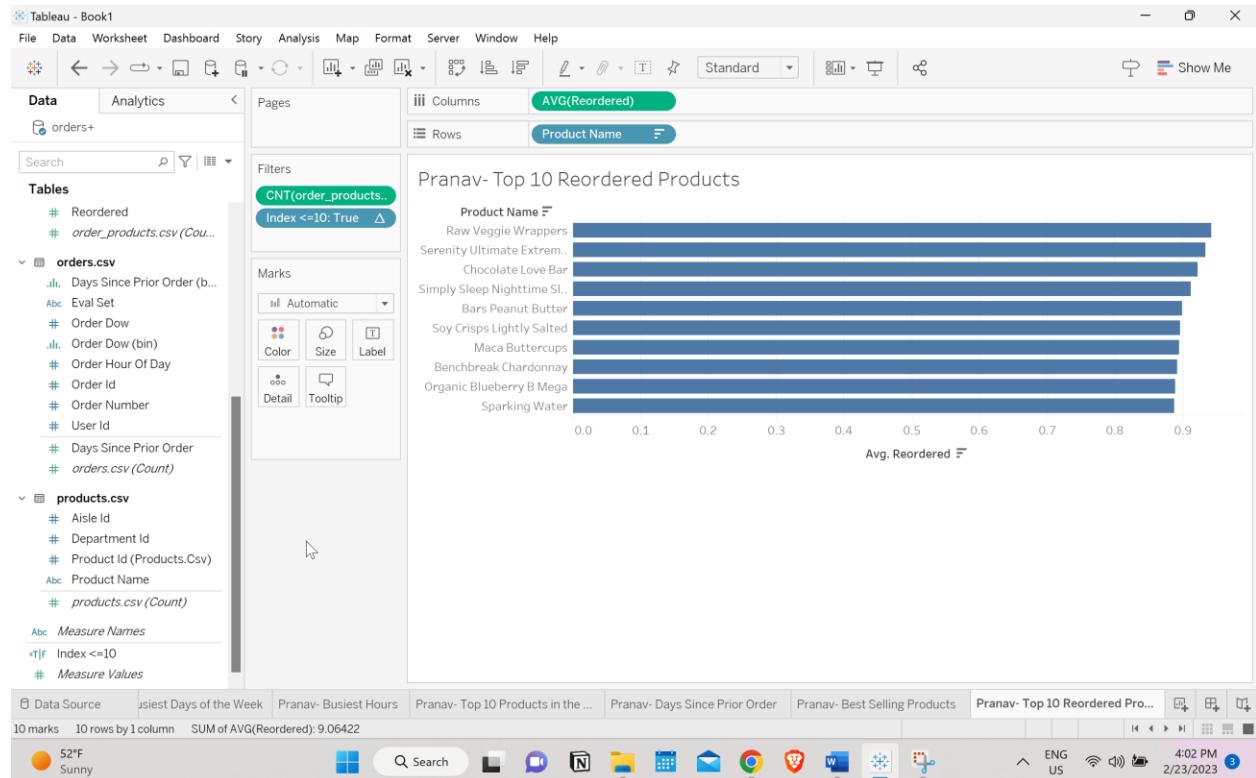
Top 3 bestselling products: **Bananas, Bag of organic bananas, Organic strawberries**

## Data Visualization

b)



## Data Visualization

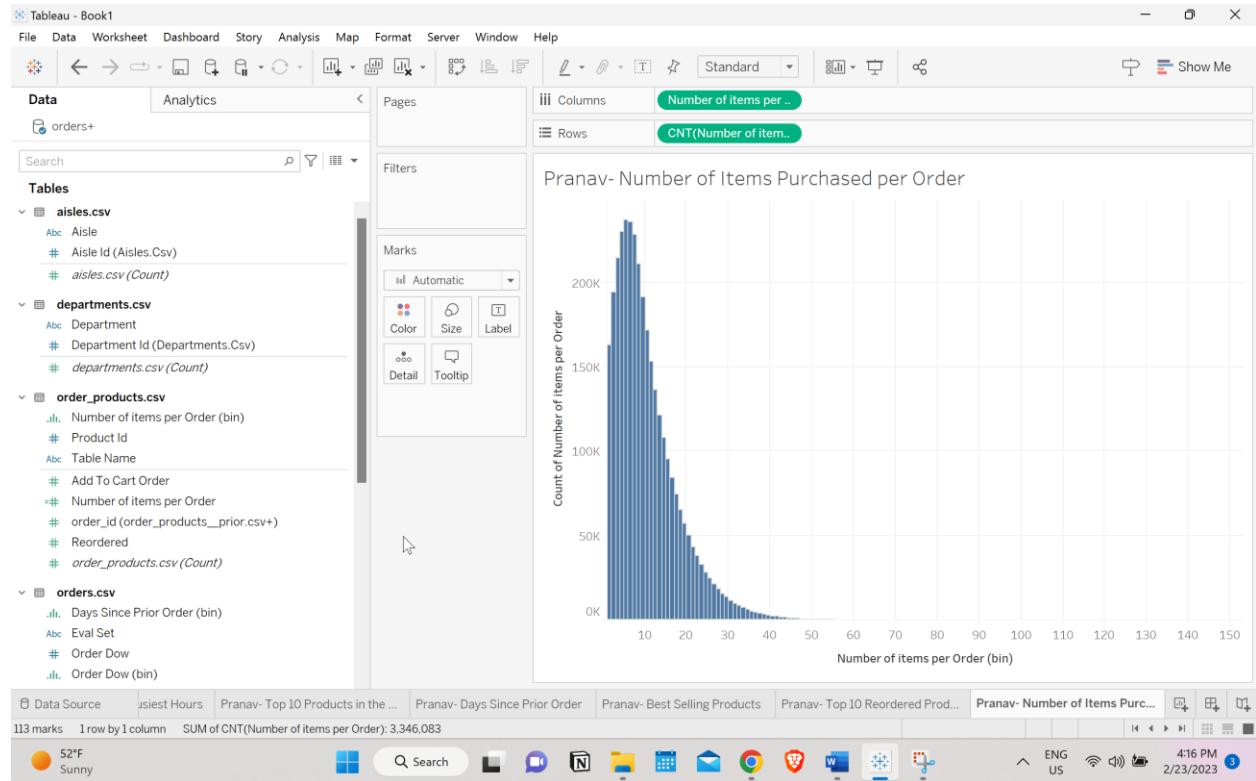


**Answer to Question 6: Most Reordered product is Raw Veggie Wrappers**

**The probability of reordering it is 0.94203 (94.203%)**

## Data Visualization

d)

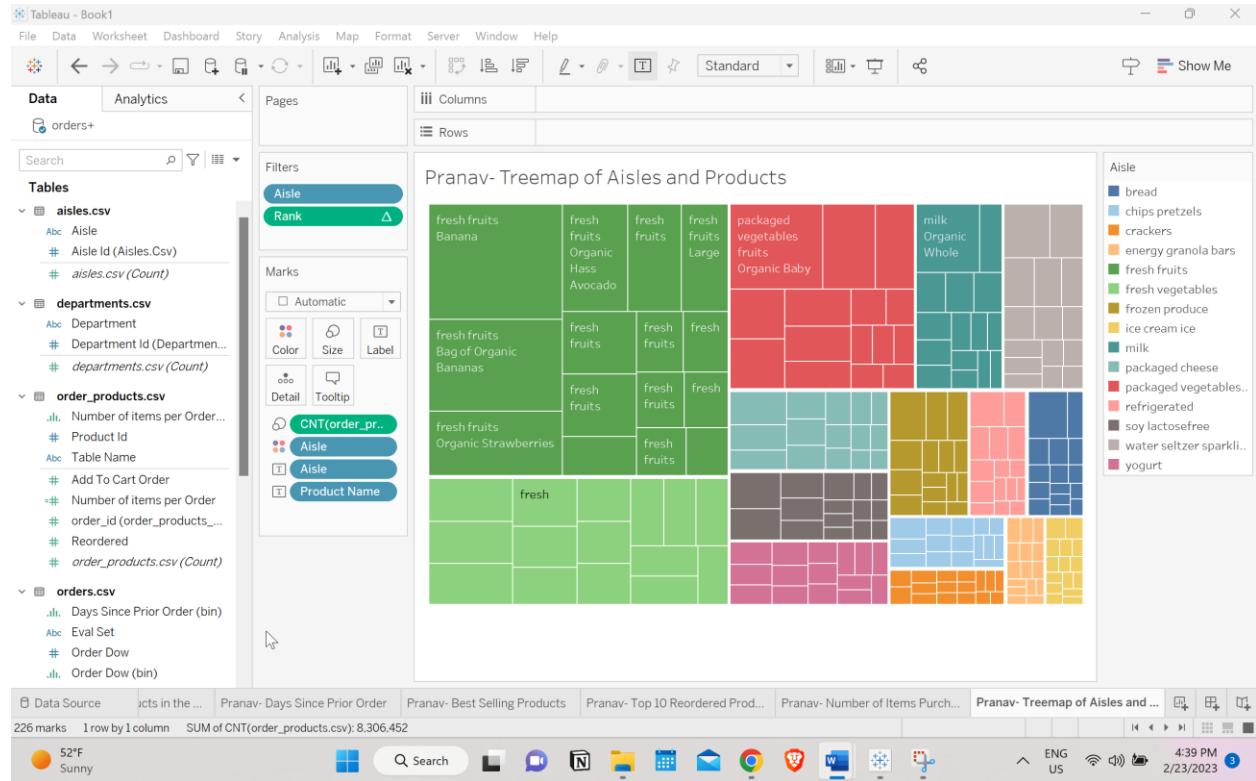


**Answer to Question 7:** Customers most often order 5 items.

## Data Visualization

### 3. Category Analysis

a)



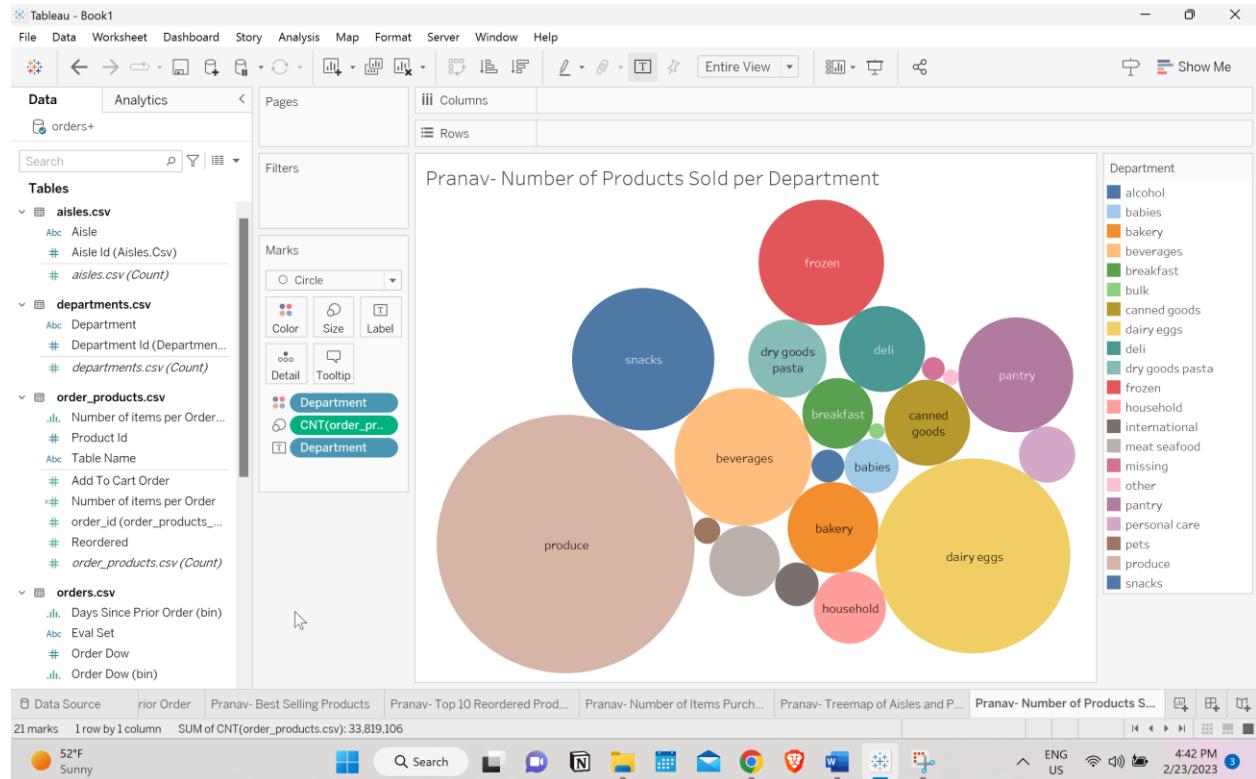
#### Answer to Question 8:

Top 3 aisles that customers mostly order are:

1. fresh fruits
2. fresh vegetables
3. packaged vegetables fruits

## Data Visualization

b)



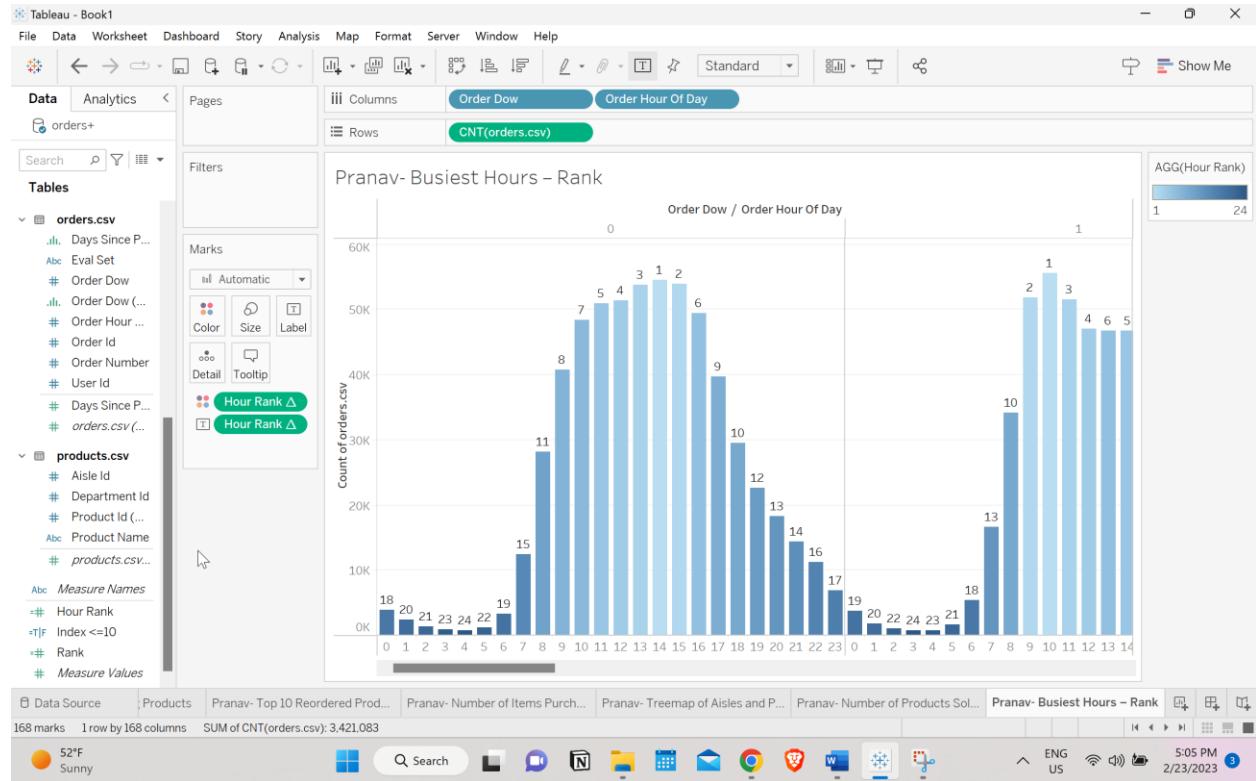
### Answer to Question 9:

Top 2 departments with the highest number of products sold:

Produce (9888378) and Dairy Eggs departments(5631067).

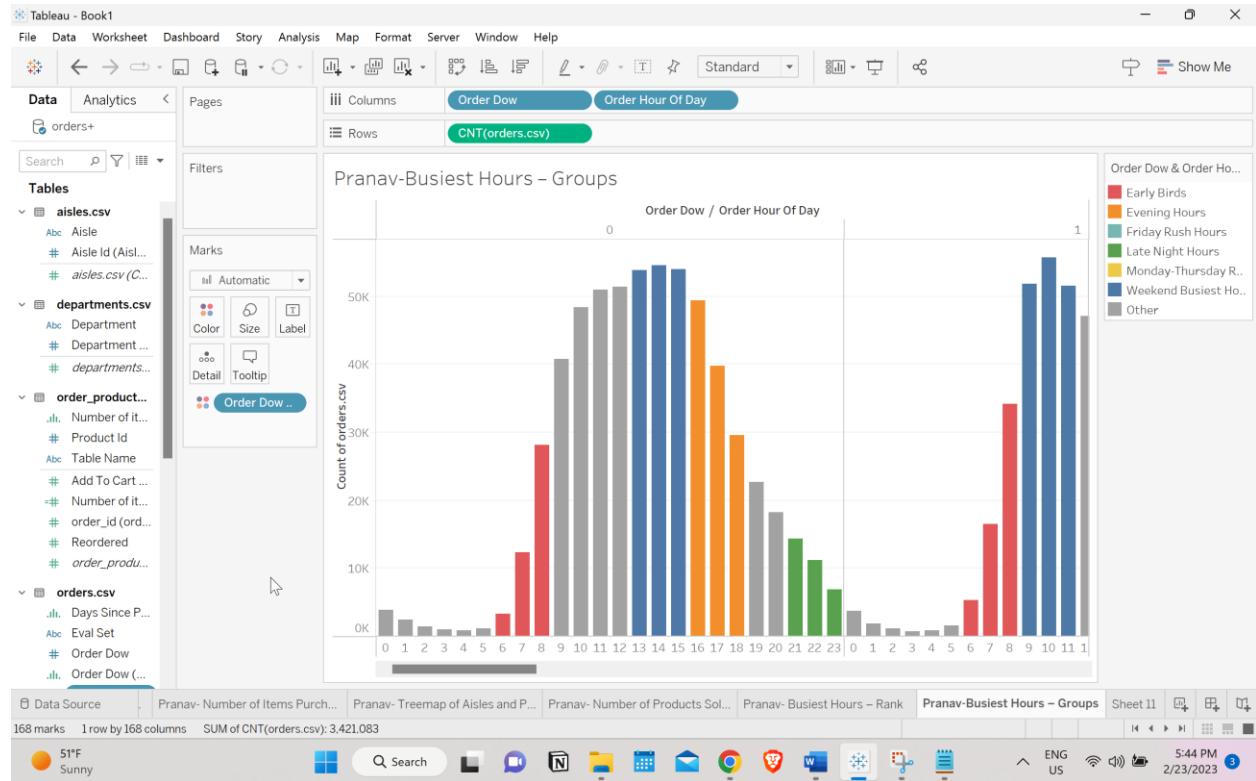
# Data Visualization

## 5. Top Products



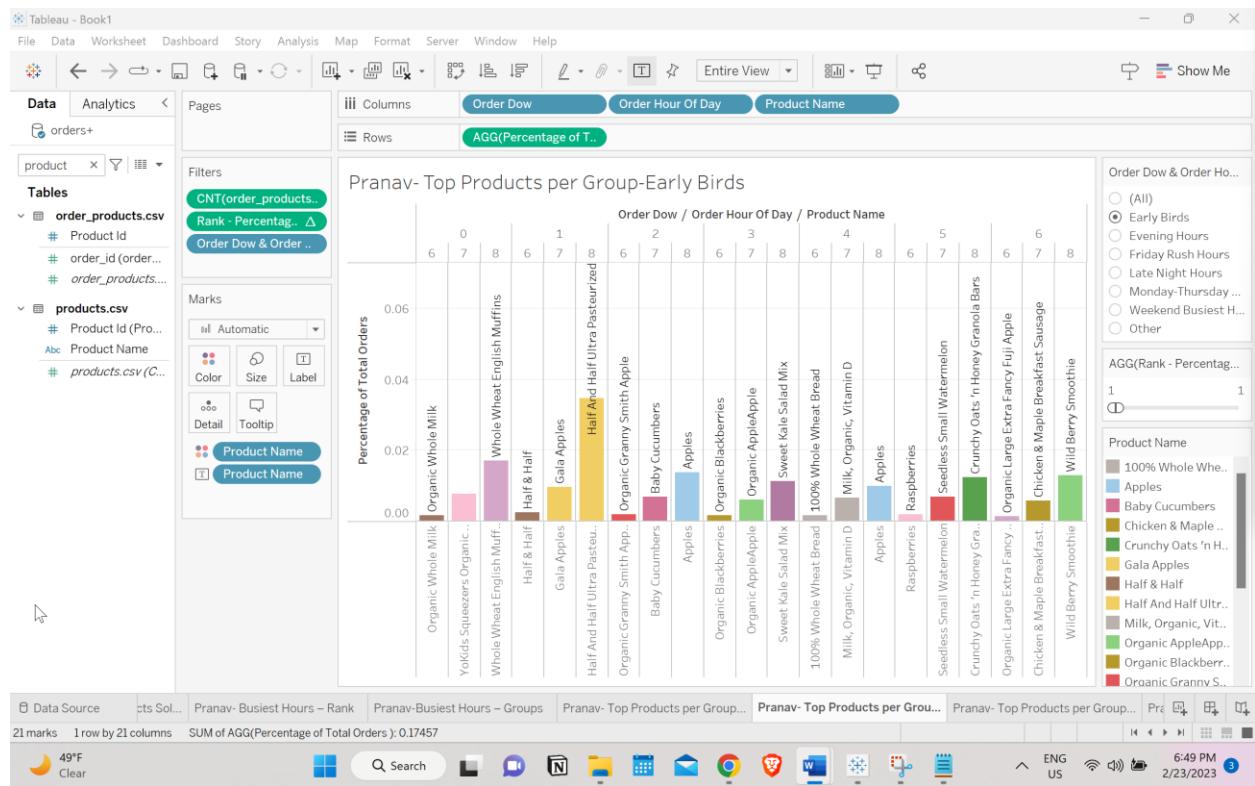
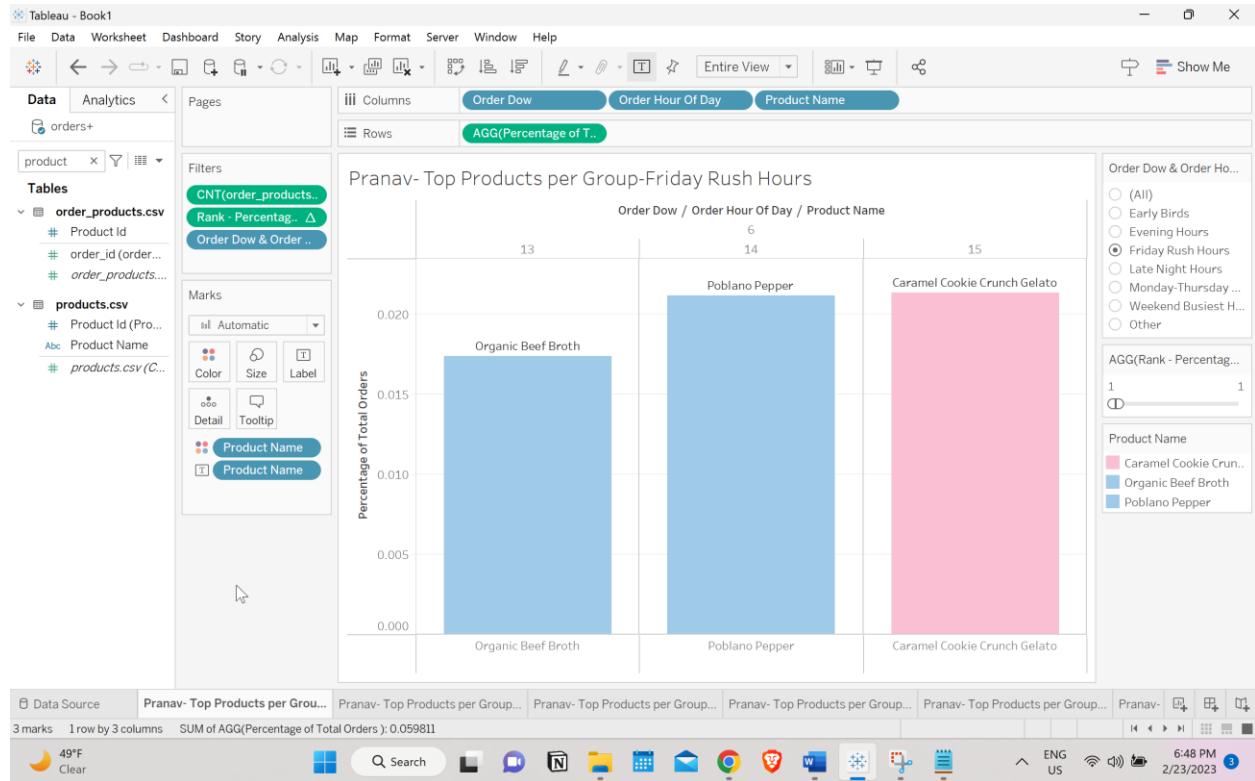
## Data Visualization

b)

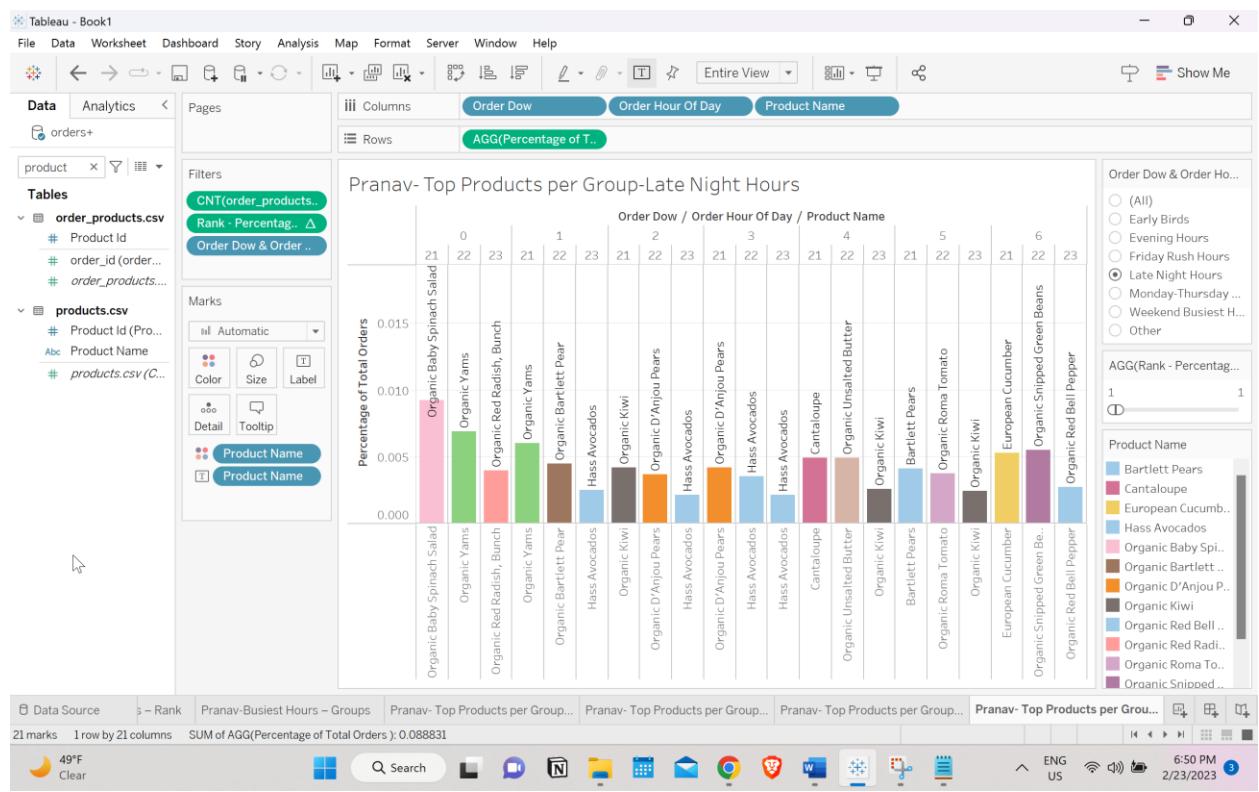
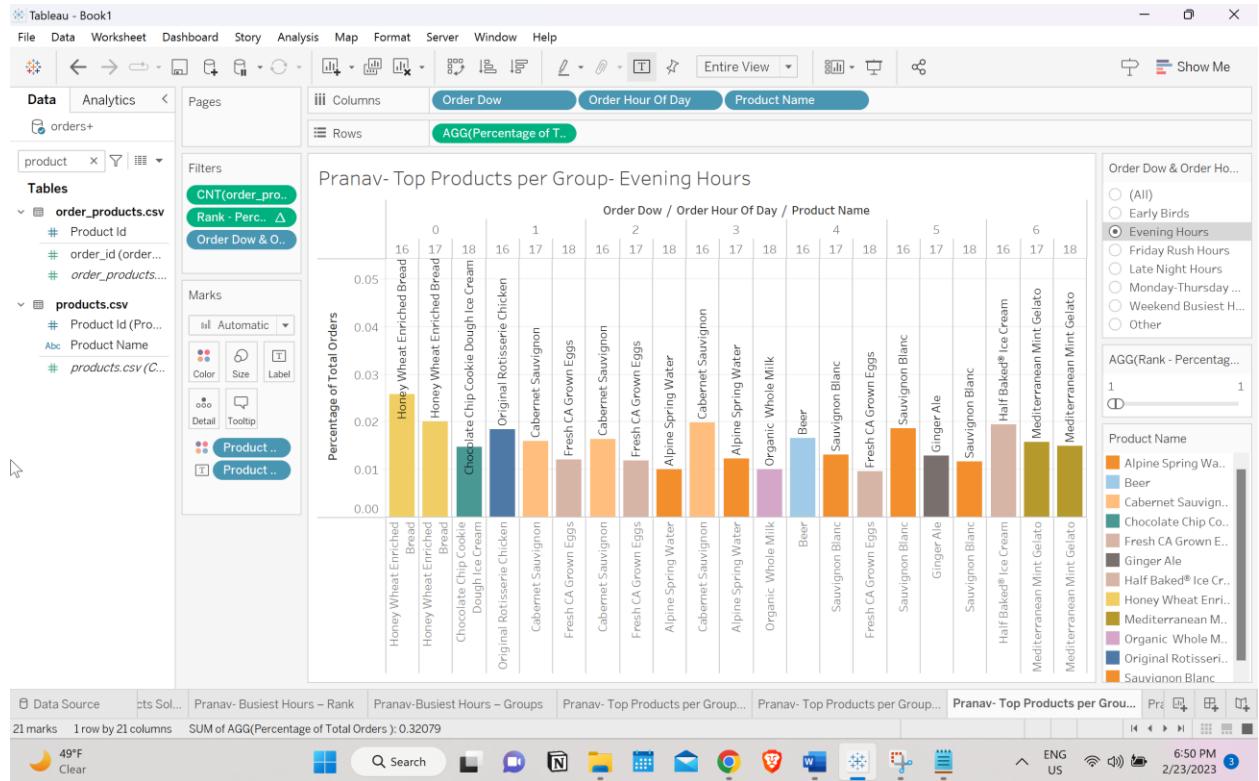


## Data Visualization

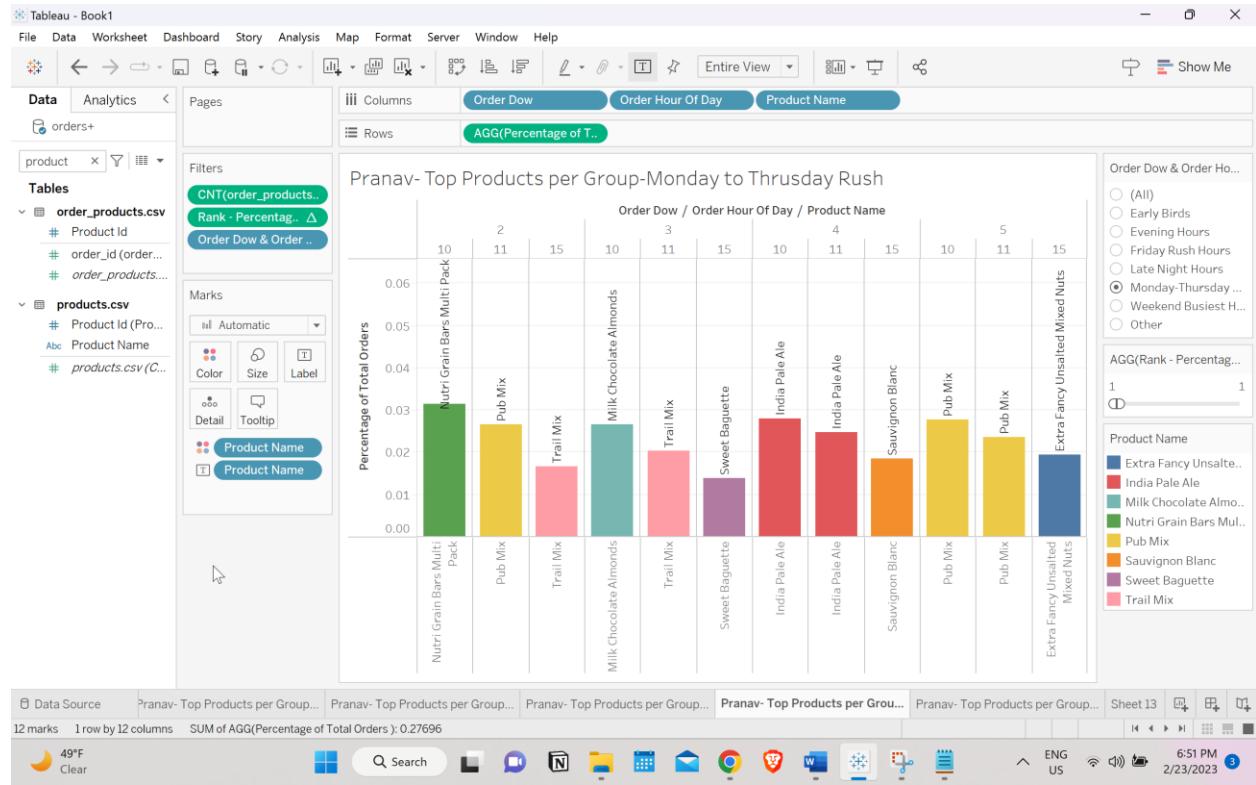
c)



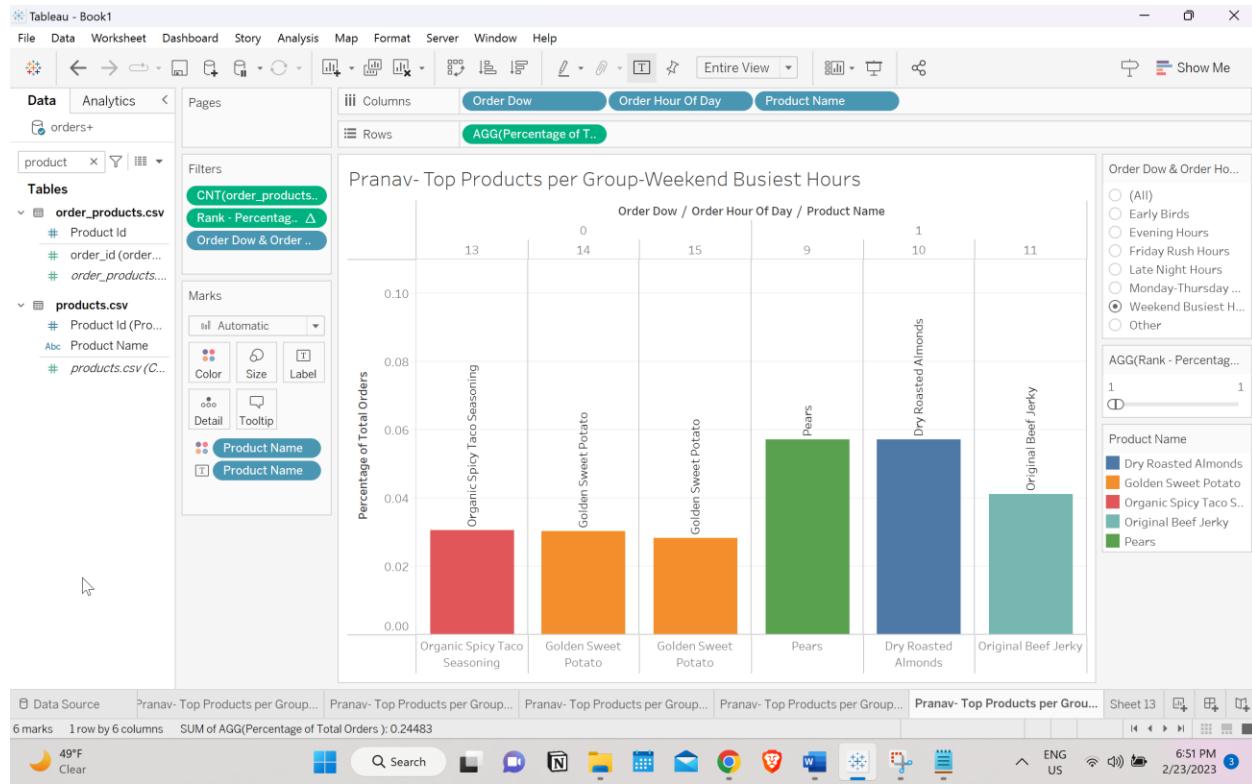
## Data Visualization



## Data Visualization



## Data Visualization



## Section 4:

From the worksheets, we can infer the following observations:

**Busiest Hours:** 9 to 17 are the busiest hours around the week. During the weekend, these receive even more orders compared to weekdays.

Sunday Mornings during hour 10 are the busiest and have the highest order count. We can infer that people complete most of their grocery shopping during this time of the week. As Sundays are weekly, people restock their food for the coming week.

Since the order volume is high during the morning, we can notice that they wish to complete their grocery shopping early.

**Busiest Day of the Week:** The busiest day of the week is Saturday (0) followed by Sunday(1). We can infer that most working-class people that get Saturday and Sunday off order during this period as they wish to buy groceries for the week so that they don't need to take out time during the working day to shop for groceries. There is a small difference between Sunday and Saturday orders, but we can observe a decline in orders starting Monday.

**Days since prior order:** We can clearly understand the customer's order pattern by looking at the histogram for Days since the prior order. Most customers shop for groceries lasting for an entire month or a week. People plan for the entire month and buy large volume of groceries so that they don't need

to shop every few days. We can also say that people buy perishable items every week and items with longer shelf life once every month.

**Number of items purchased:** Maximum number of orders has 5 to 6 products per order. We can see that customers usually order 4 to 7 items, with 6 being the maximum. The histogram is left-skewed and people ordering fewer items is much higher. There is a rise in no. of items from one to five and then we can see a decline. The above data is very useful for managing the company's supply chain and gives a fair idea for delivery partners on how many items they need to carry and deliver.

**Best Selling Products:** This chart shows us the most bought product at Instacart. Bananas are the most ordered items, followed by a bag of organic bananas. The third most sought-after product is strawberries. Overall, we can see that the best-selling products at Instacart are mostly Fruits and Vegetables. This chart is very helpful as we know customers love and stock these items in inventory.

**Treemap of Aisles and Products:** We have used this to categorize our best-selling products based on the aisle. Each colored block represents the Aisle, and internal blocks are the items. The size of the Green block[Fresh fruits] is the largest, depicting the most ordered category(aisle) and bananas being the most ordered items. The least sold aisle is Ice-cream and Milk and Cookies ice cream is the least sold item.

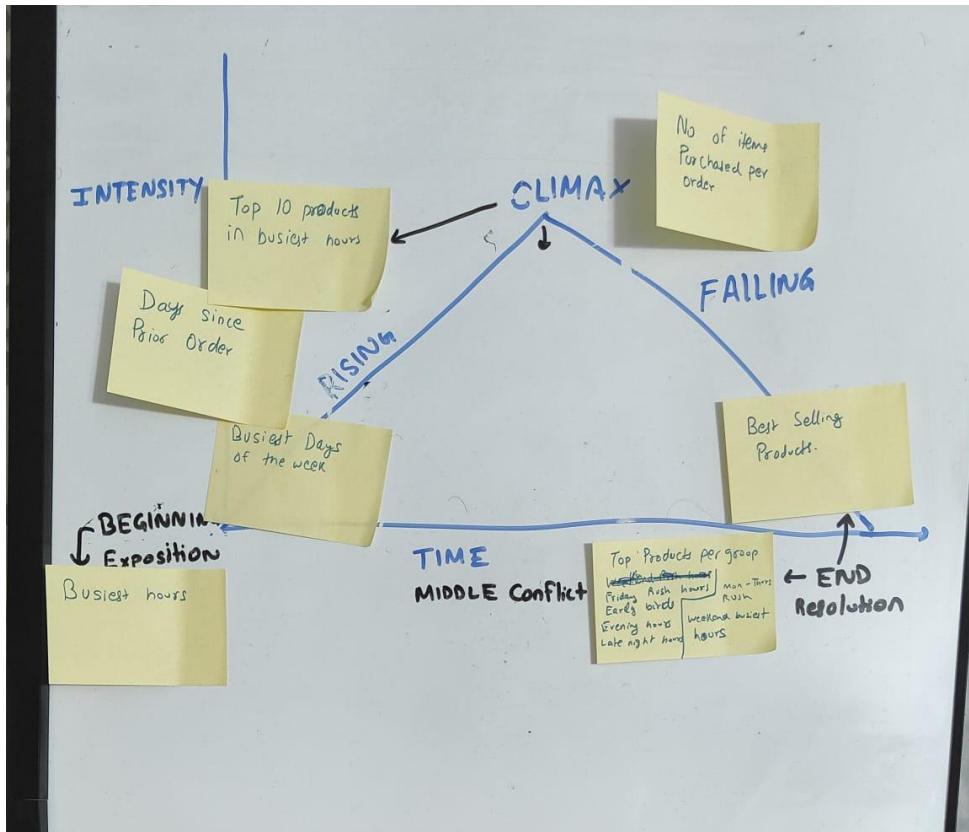
#### **Top Products per Group:**

- i. Early Birds: The early birds' group examines the orders made in the 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> hour of the day, that is, morning orders. Most ordered items during these hours is the Half, and half ultra pasteurized, followed by whole wheat English muffins.  
We can infer that early birds often order breakfast items.
- ii. Friday Rush Hour: The highest orders during Friday Hours are Caramel cookie crunch gelato and Poblano Pepper. Customers must order snacks like pepper or dessert like gelato on Friday, like a weekend cheat meal.
- iii. Evening Hours: The highest orders during Evening Hours are Honey wheat enriched bread and cabernet sauvignon, and we can infer that customer order items for dinner.
- iv. Night Hours: The top products during night hours are Organic Baby Spinach salad and Organic Yams. We can infer that customers are ordering late-night dinners.
- v. Weekend Busiest Hours: The top products during weekend hours Dry roasted almonds and Pears. Customers like having fruits and nuts, or they are stocking items for the week.
- vi. Monday- Thursday Rush Hours: The top products during Monday to Thursday Rush hours are Nutri Gains Bar Multipack, India pale Ale, and Pub mix. Customers order snacks and ready-made

## Data Visualization

food during weekday rush hours because they may not have time to cook food during busy work hours, and these handy items are suitable to satisfy their hunger.

### Section 5: Organizing Story Boarding with Storyboarding



#### Freytag's Pyramid

1. Busiest Hours – Beginning (Initiation)
2. Busiest Days of the Week – Rising Action
3. Treemap of Aisles and Products- Climax
4. Number of items purchased per order- Climax
5. Days Since Prior Order- Falling actions
6. Best-selling products- Resolution
7. Top products per group for all 6 - Resolutions

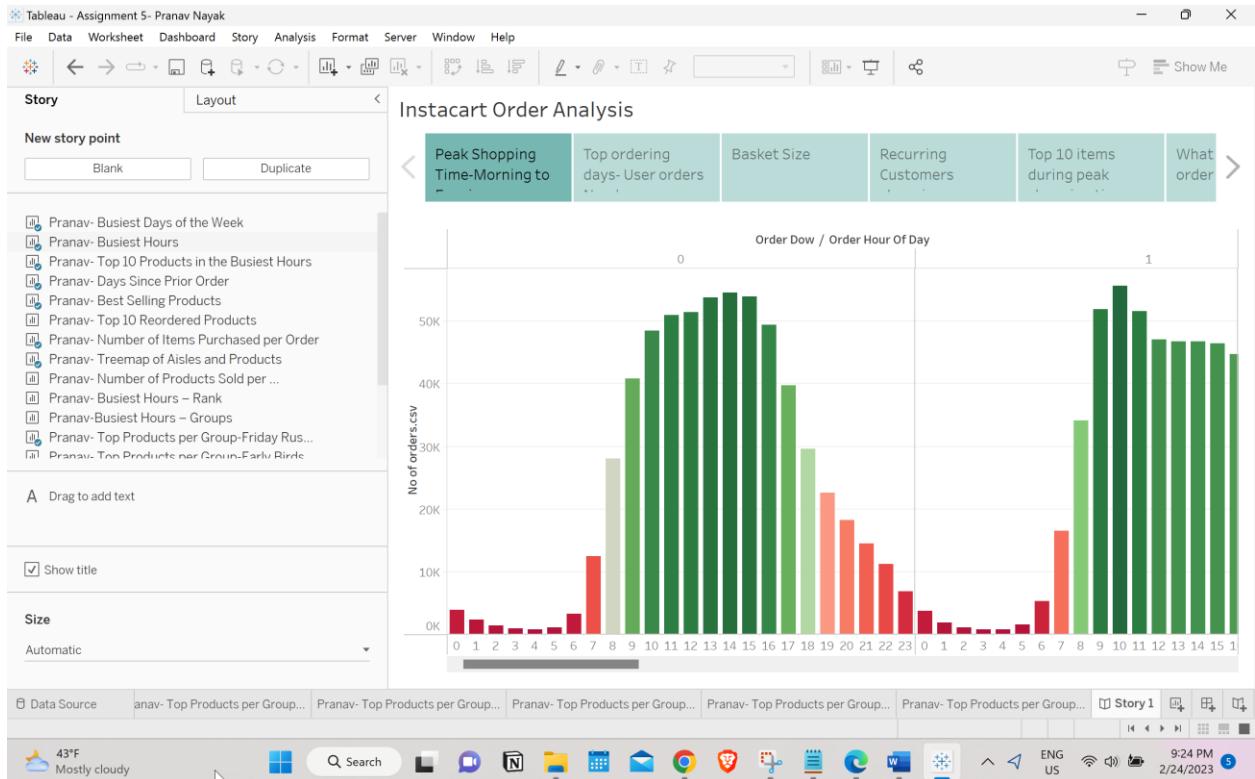
## Data Visualization

### Section 6:

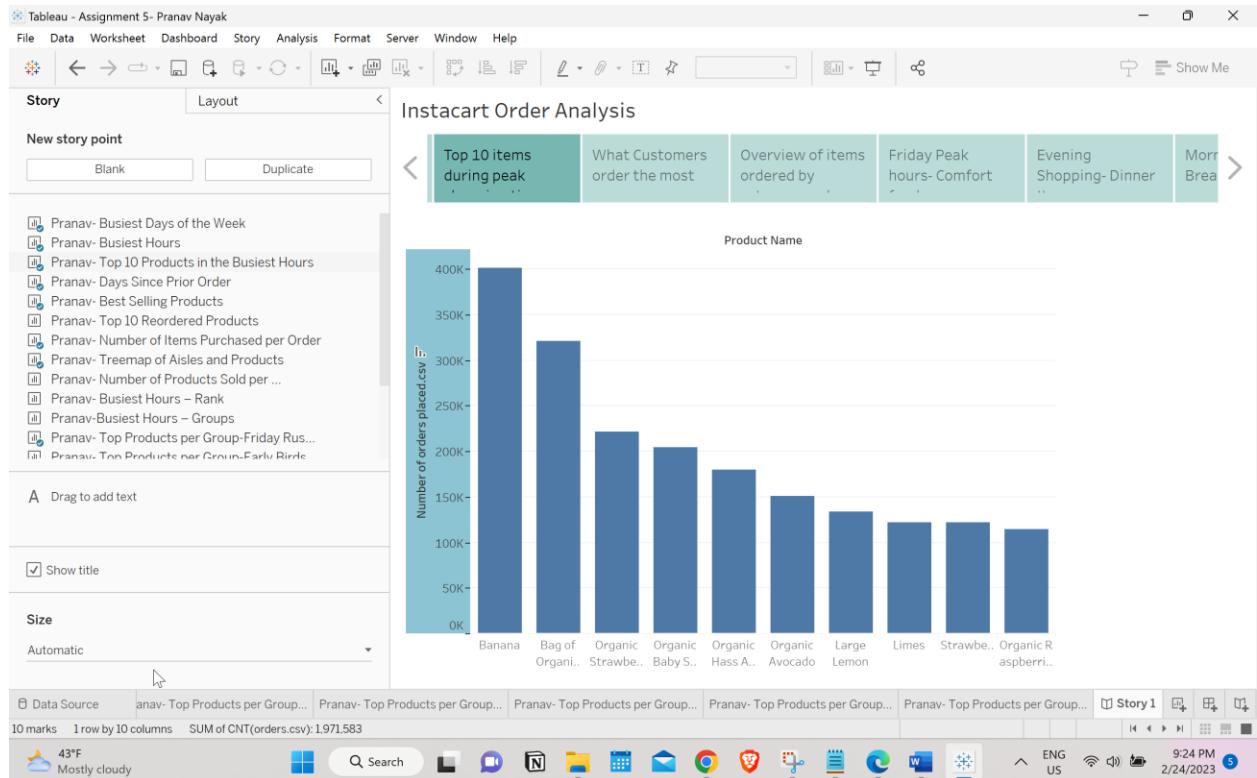
Rhetoric best suited for this story is: Logical

Captions for the Rhetoric are:

- Peak Shopping Time-Morning to Evening
- Top ordering days- User orders Number
- Recurring Customers shopping gap
- Top 10 items during peak shopping times
- What Customers order the most
- Overview of items ordered by category and volume
- Friday Peak hours- Comfort food
- Evening Shopping- Dinner Items
- Morning orders- Breakfast Items
- Late Nights healthy snacks.
- Weekday Peak time- Easy snacks
- Weekend Peak time- Grocery stocking
- Weekend Peak time- Grocery stocking

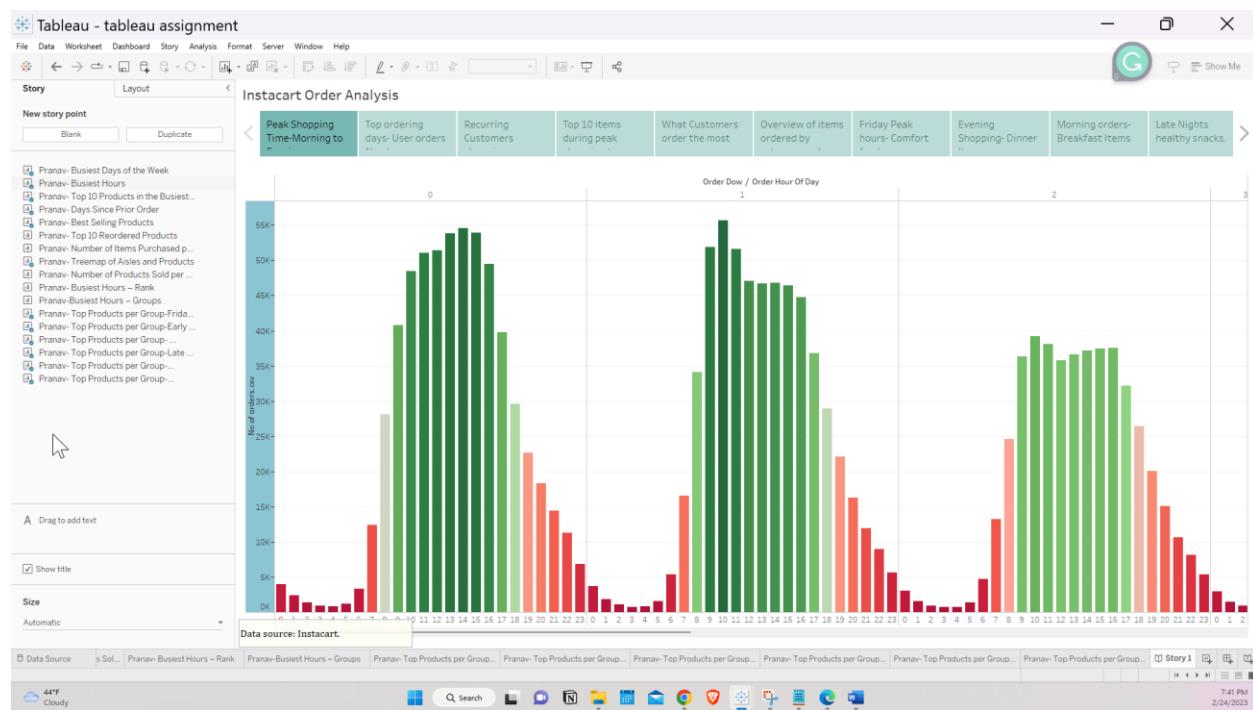
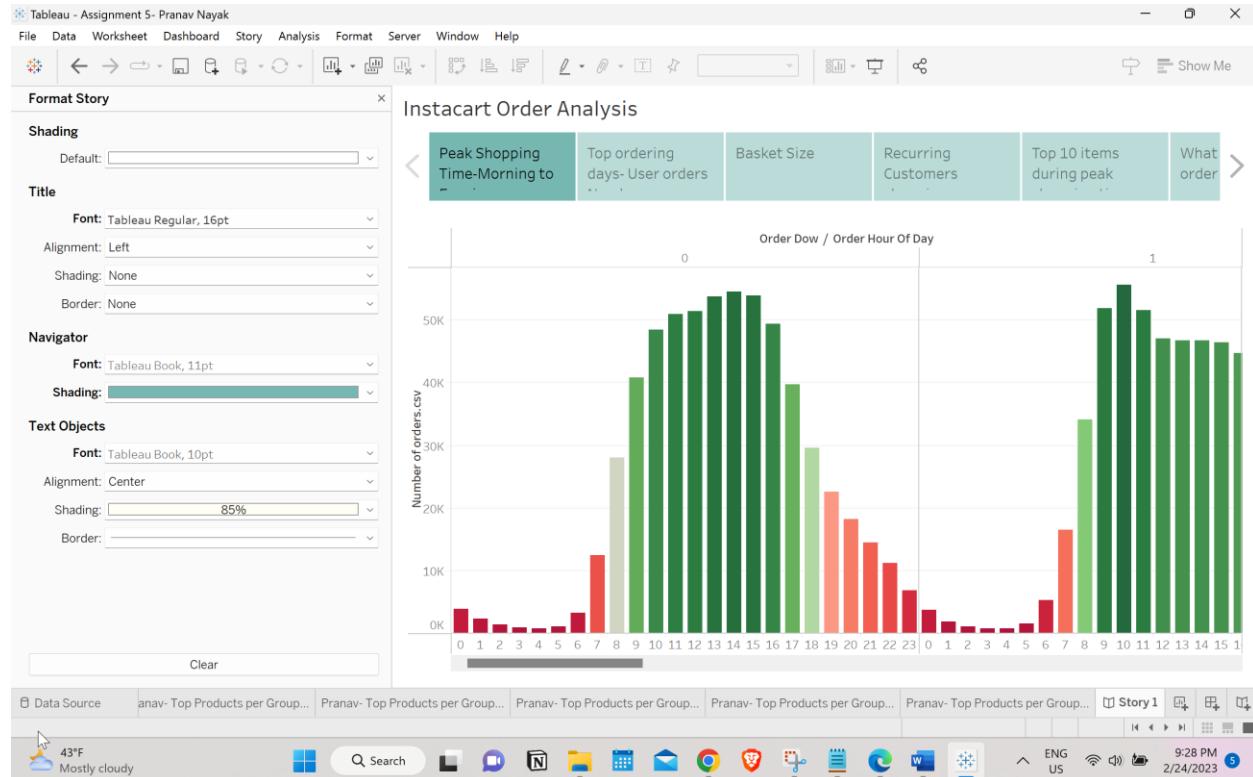


## Data Visualization

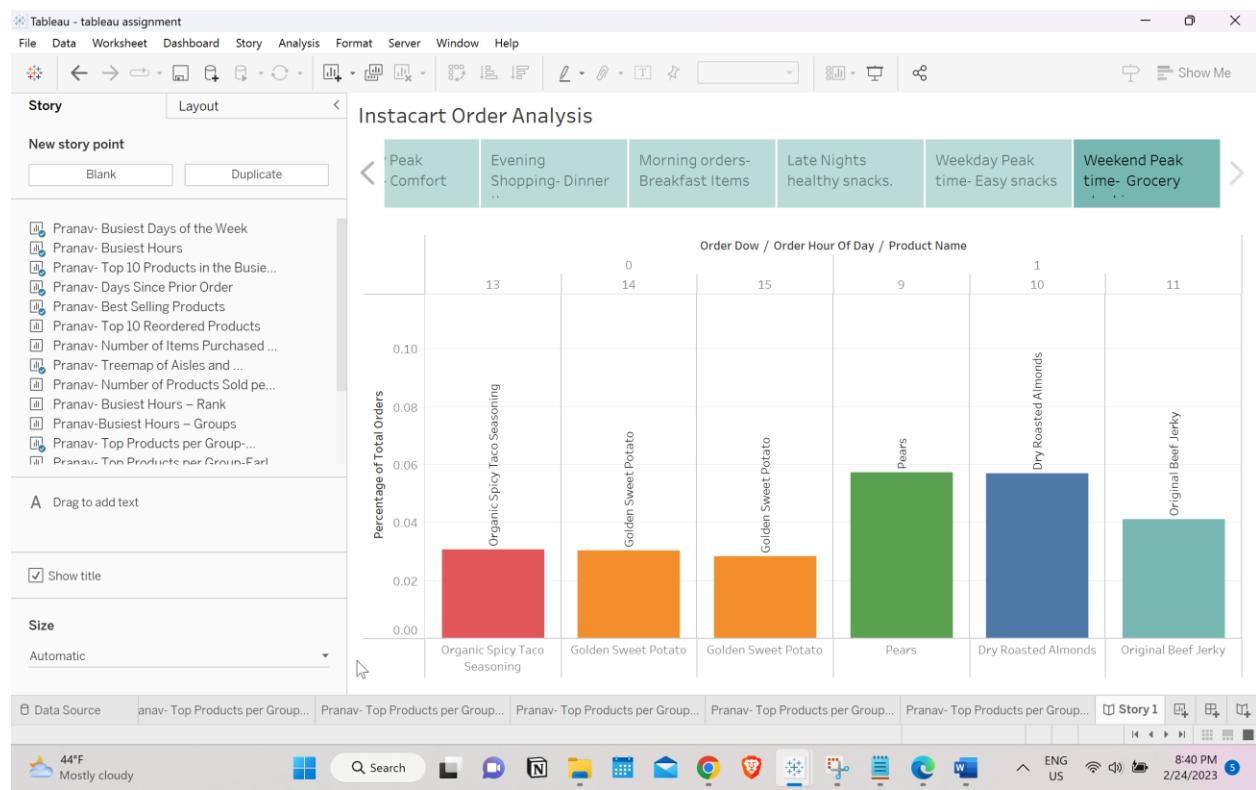
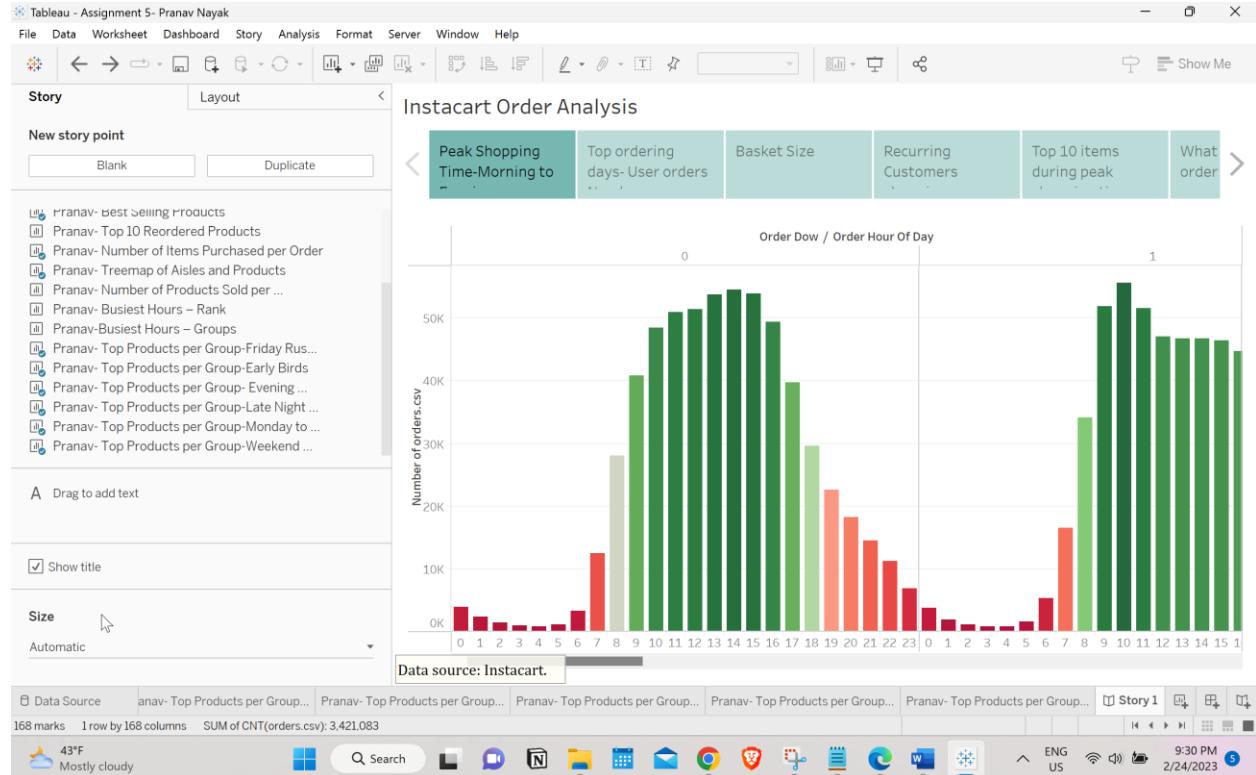


# Data Visualization

## Section 7



## Data Visualization



## Data Visualization