



## Visualisations

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Business Question
What is the general, overall spending?
Analysis
<p><b>Total Spending Per Customer</b> Minimum: 5.00 Mean: 1483.35 Max: 26,394.90</p> <p><b>Average Weekly Spending Per Customer</b> Minimum: 0.37 Mean: 54.89 Max: 2761.94</p> <p><b>Average Orders Per Week Per Customer</b> Minimum: 0.26 Mean: 0.71 Max: 42</p>
Recommendation

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Business Question
What are the busiest days of the week and hours of the day?
Analysis

The busiest days of the week for orders are Saturday and Sunday. There are much fewer orders during the week.

The busiest hours of the day are between 9.00-16.00. Orders grow until around 10.00, dip slightly at 12.00 (presumably when users have lunch), rise slightly again until 14.00 and begins to decline thereafter.

Essentially it demonstrates a bell curve, but with the expected peak truncated somewhat for lunch at 12-13.00.

There is no significant difference when filtering profiles, except for there are slightly fewer orders on a Sunday from the significant profiles.

See sections 8.1 and 8.2 of the script for more detail.

#### **Recommendation**

Advertise most heavily between the hours of 9.00-16.00, aiming mostly at the significant profiles (Families, Healthy Families and Professionals).

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#### **Business Question**

What types of customer profiles does Instacart have?

#### **Analysis**

Customers have been profiled as one of the following and so that no one customer has more than one profile type:

**Specialist profiles**

Health Families  
Grocery Enthusiasts  
Simple Pleasures  
Young Spender  
Frugal DIY

**Non-Specialist profiles**

Professional  
Family  
Budget  
Senior

The vast majority of customers can be profiled as Families, Healthy Families and Professionals. These profile were henceforth referred to as "significant profiles" in the analysis. The distribution of customer profiles across different regions is much the same and there are more of each in the South and less in the Northeast. This is not unusual and meets expectations, as it follows the general US population distribution by region.

See section 6.7 of the script for more details.

**Recommendation**

Prioritise marketing for departments and products that are popular with families, healthy families and professionals.

**Business Question**

Are there certain types of products that are more popular than others?

**Analysis**

The standout, best selling product departments are produce and dairy, followed by snacks and beverages. This indicates a general profile for Instacart customers of healthy shopping and eating, which correlates with the Healthy Families profile being one of the most significant profiles. The spending habits across regions are not different, that is each region has the same distribution of sales by department. Raw sales are different, but this is accounted for by differing amounts of customers per region, following the population distribution of the US. Of the 10 best selling products, 9 are produce (mostly fruit) and 1 is a dairy product.

See section 8.3 for more details.

#### **Recommendation**

invest more marketing budget into produce, dairy, snacks and beverages.

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#### **Business Question**

Customer behaviour: how frequently do customers return on average?

#### **Analysis**

As per the requirements of the project, all customers with fewer than 5 orders were excluded from the analysis.

There are two ways here to consider usage frequency.

By considering the number of orders that users make per week:

The mean number of orders made per week is 0.7.

There are very few users who make fewer orders than this and the number of users who make more orders than this gradually decline to about 1.7 orders per week.

By considering the number of weeks until users make their next order:

On average, users make their next order after 1.75 weeks and the majority of users make their next order within 1-2.5 weeks.

#### **Recommendation**

Provide incentive for more frequent returns, for example through a loyalty reward programme, where a customer gets a discount on their next order, if they make an order within a specified amount of time and above a certain price threshold.

#### **Business Question**

Customer behaviour: are there differences in ordering habits based on a customer's region?

#### **Analysis**

The pie charts on department sales show that there are no regional differences.

The pie charts show that proportionally the regional, average weekly spending and weekly number of orders are near identical. The t-tests confirm that they are not statistically, significantly different.

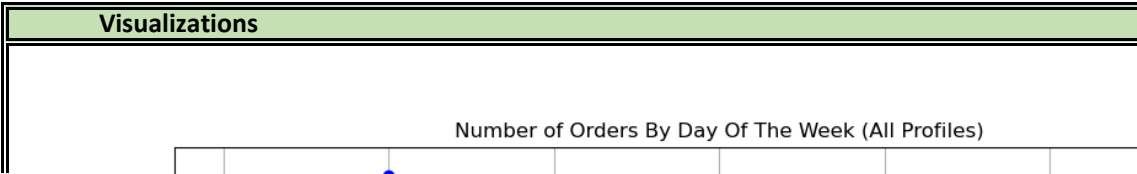
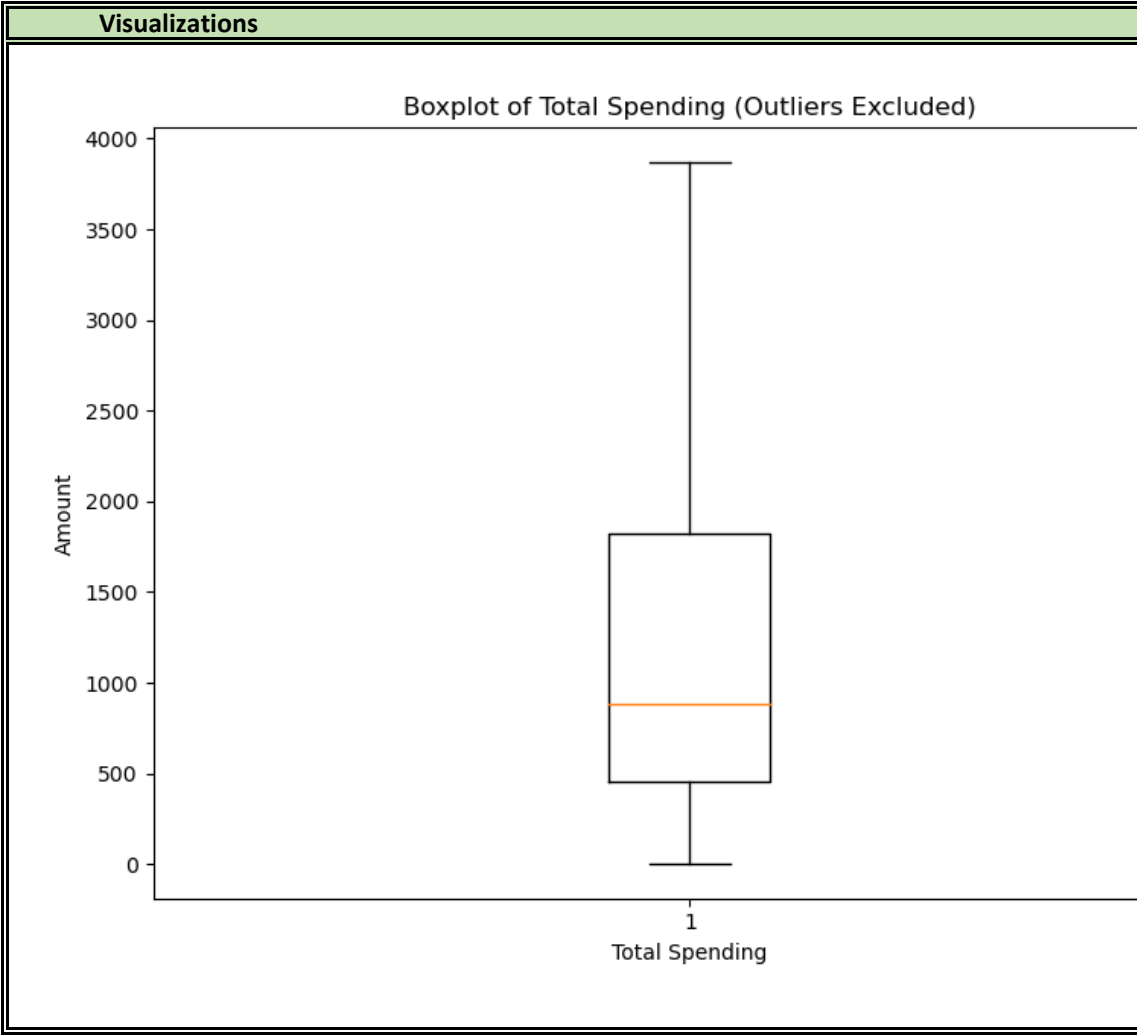
There is no significant regional difference in spending habits.

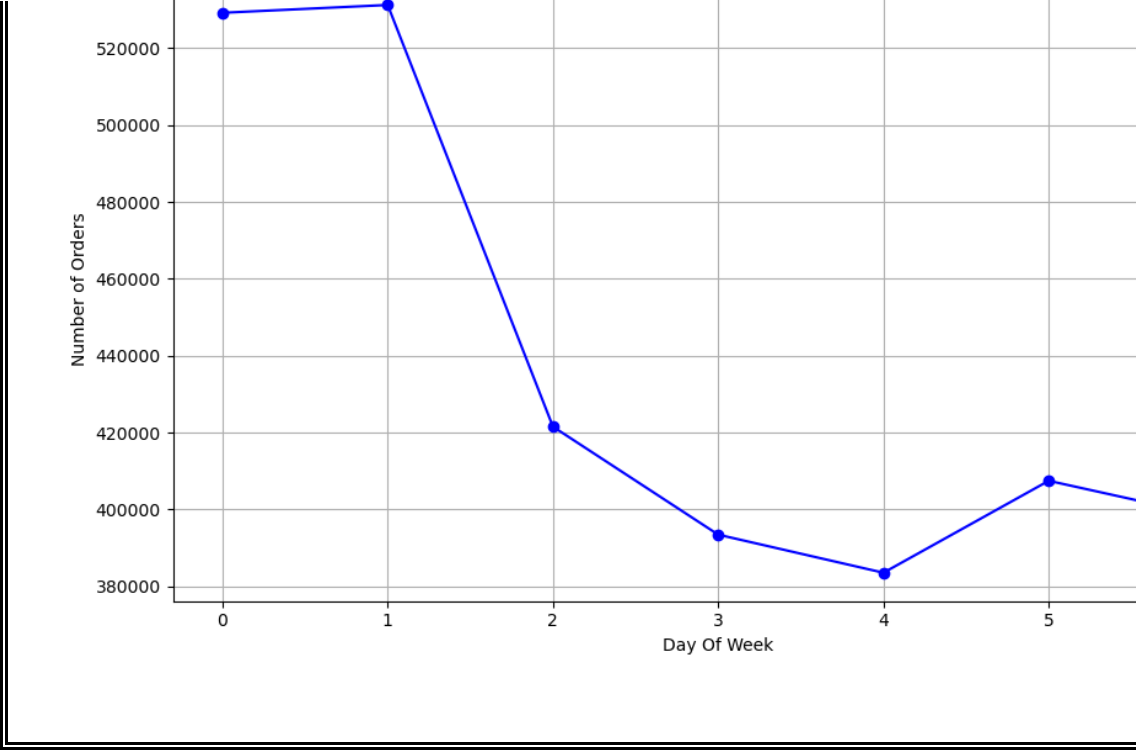
#### **Recommendation**

Take no action based on region alone.

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Business Question
Customer behaviour: are there differences in ordering habits based on a customer's age and family status?
Analysis
<p>Analysis on average number of orders per week and weekly spending by age group and whether the user has dependents showed that: there are no significant differences in spending habits age and family status. T-tests confirmed that the averages of each group were not statistically, significantly different.</p> <p>Age and family status has no effect on spending habits.</p> <p>See section 8.7 of the script for more details.</p>
Recommendation
Take no action based on age and family status alone.

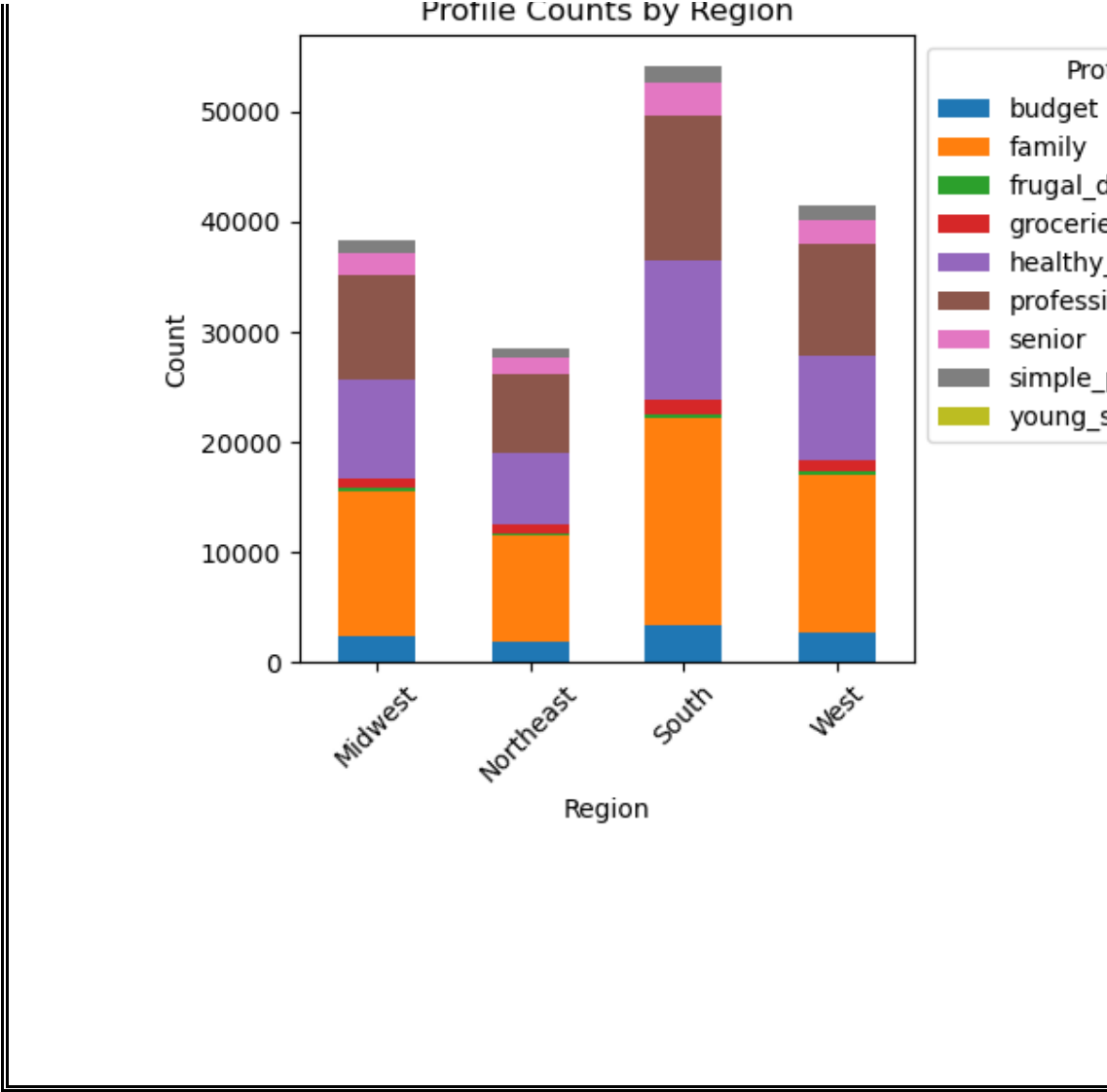




## Visualizations

Profile Counts by Region

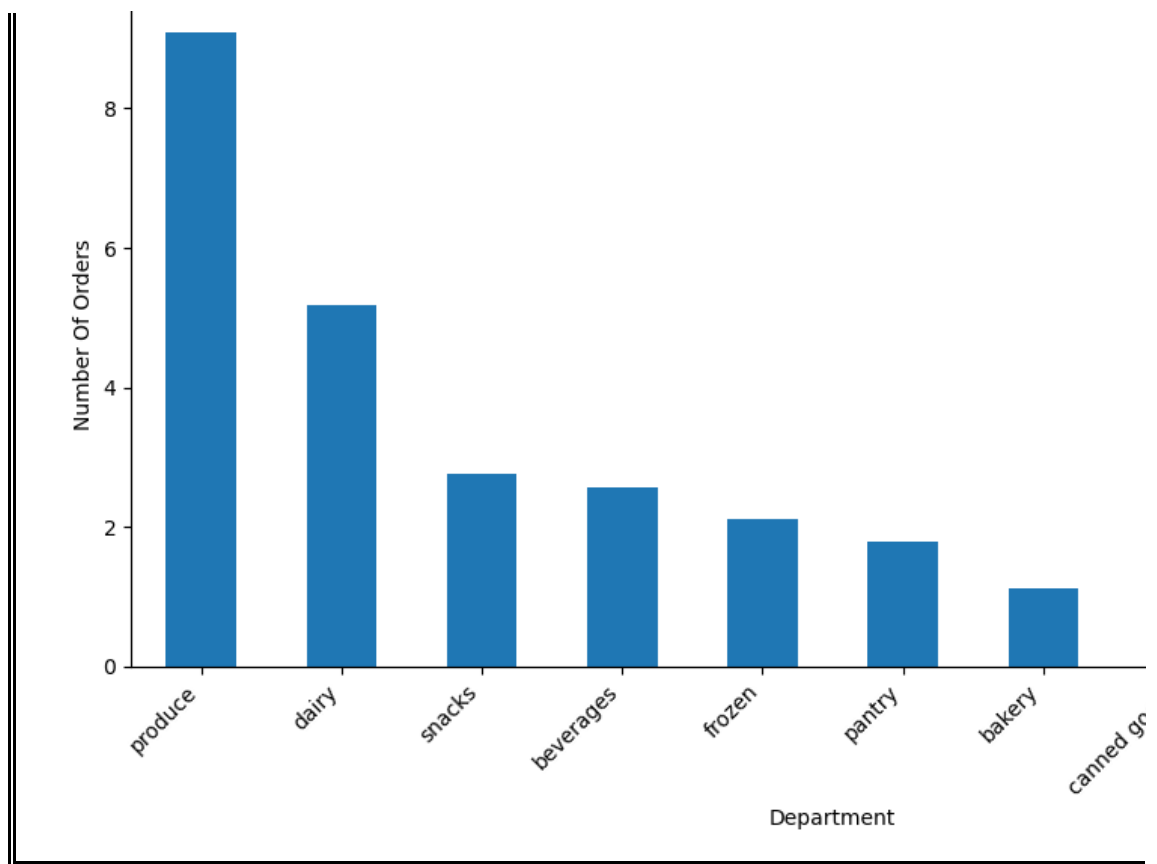




Visualizations

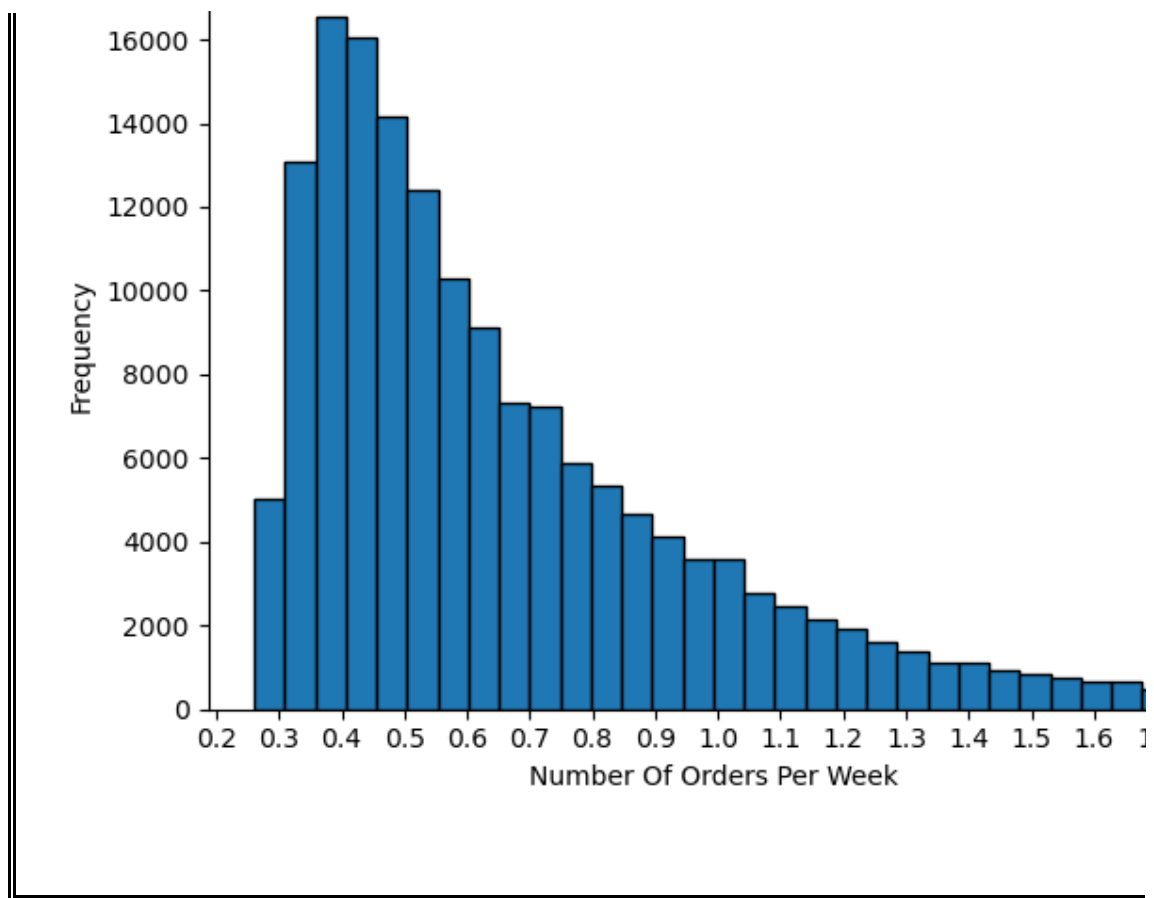
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Top 10 Best Selling Departments



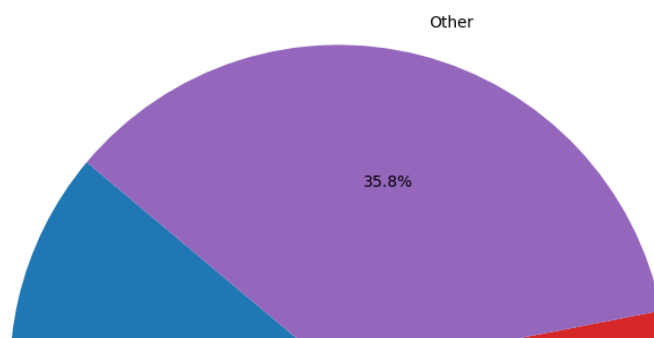
### Visualizations

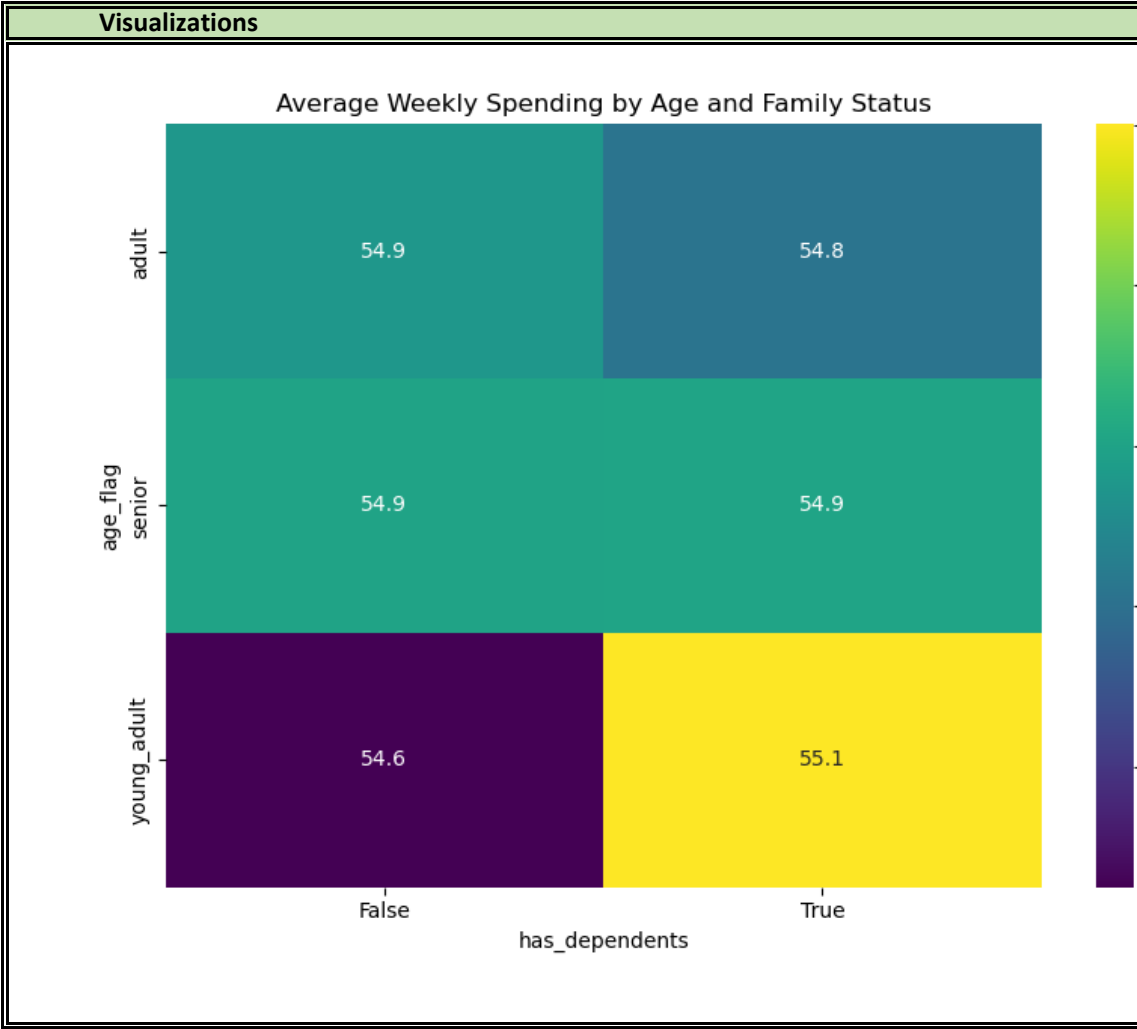
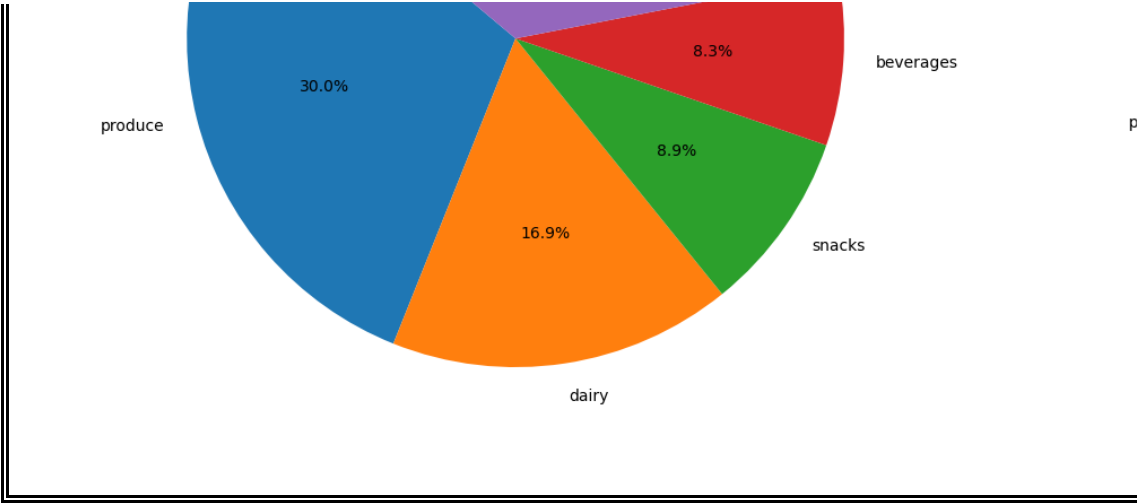
Distribution of Number Of Orders Per Week (Excluding Outliers)



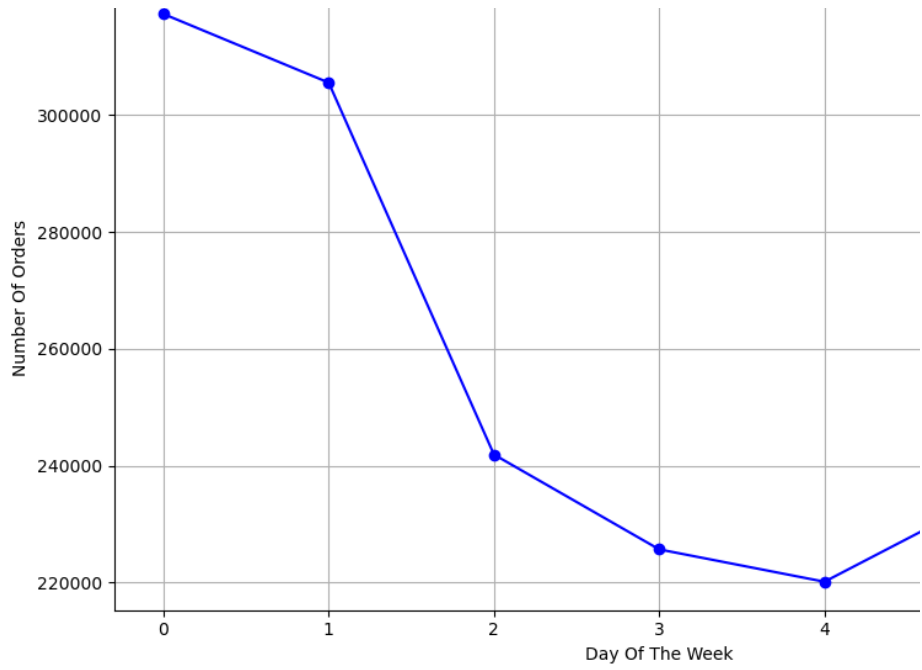
### Visualizations

Top 4 Best Selling Departments (Midwest)





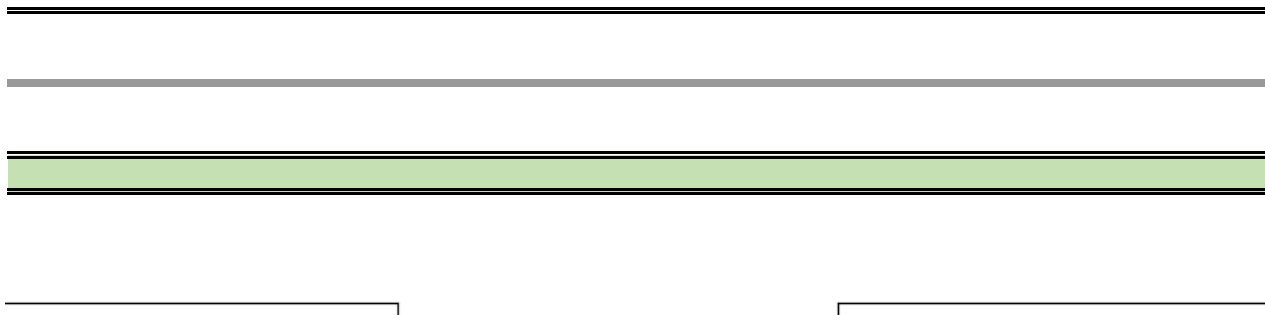


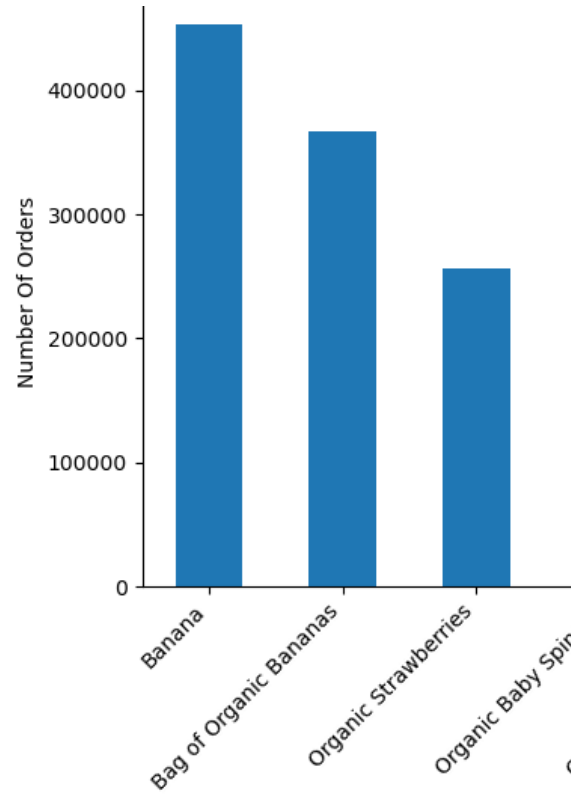


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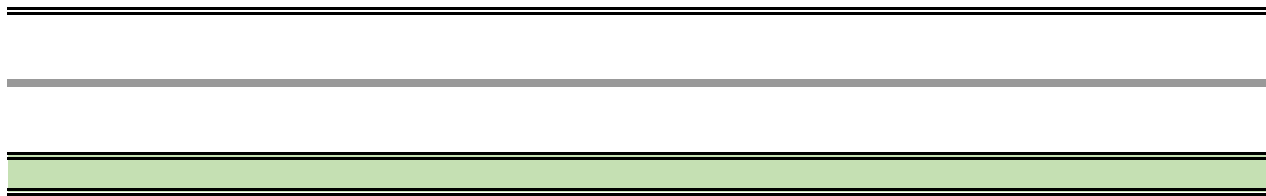
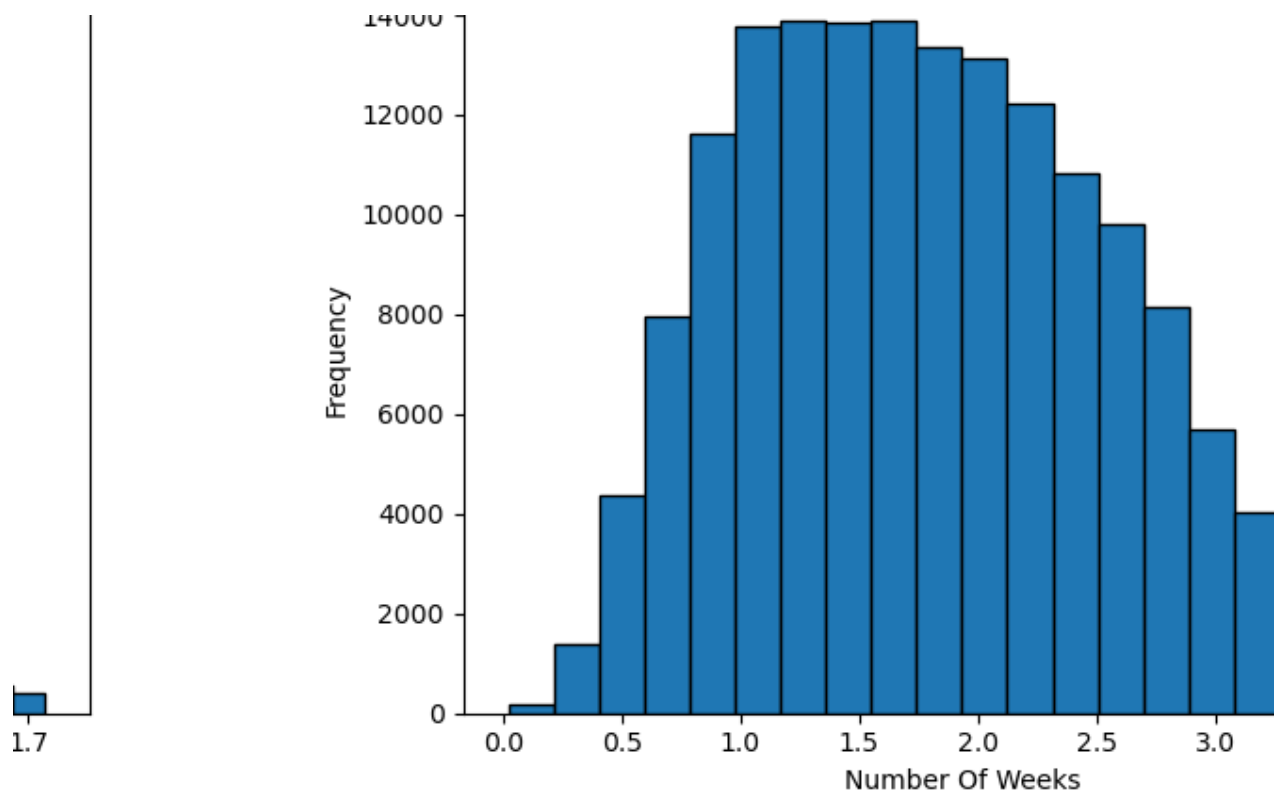
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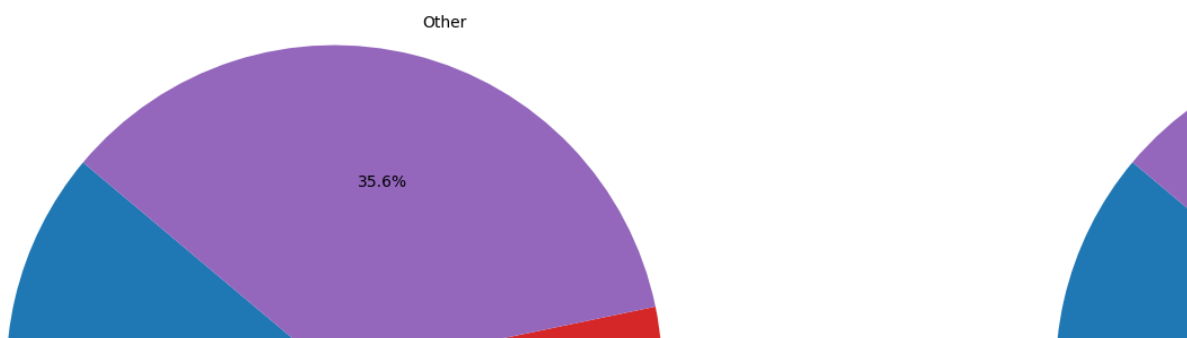


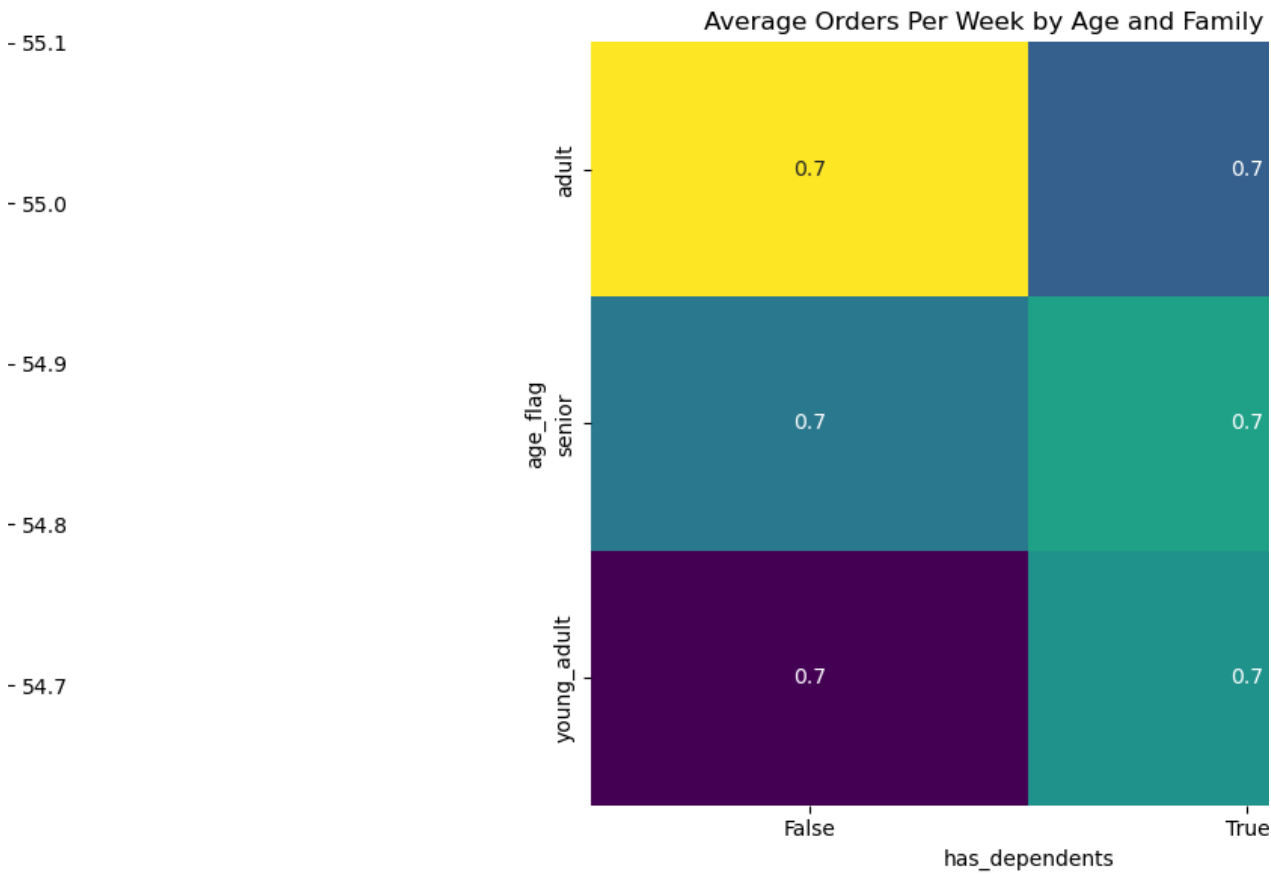
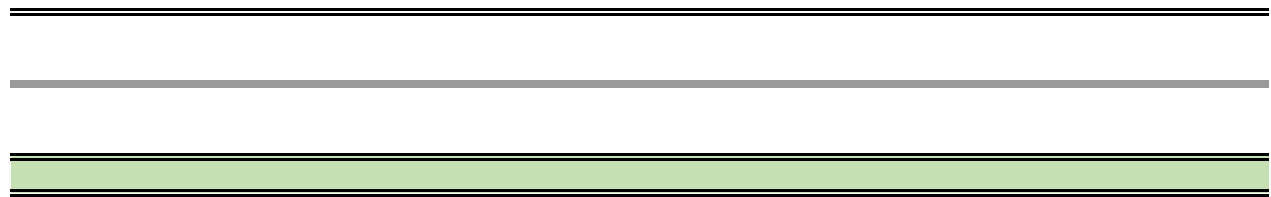
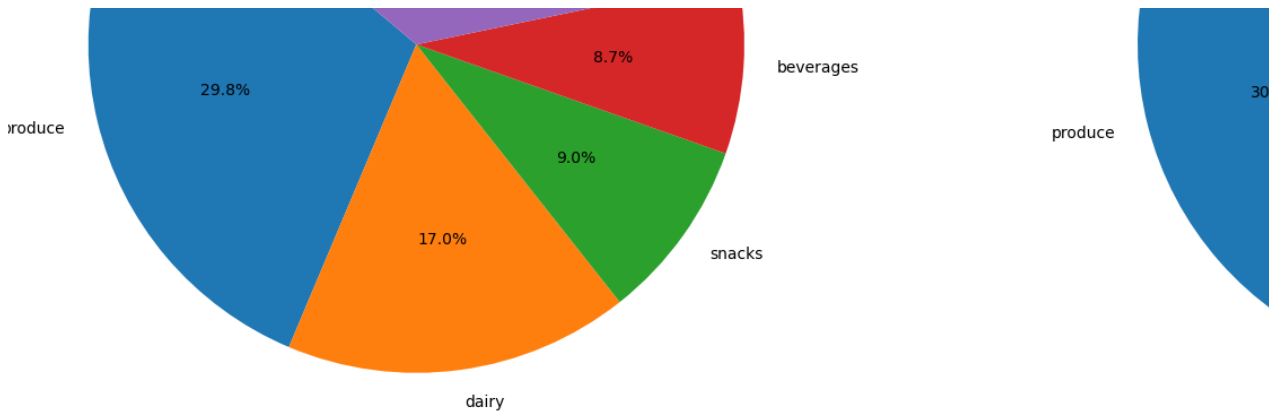
liers) Distribution Of Number Of Weeks Until Next Order (Exc

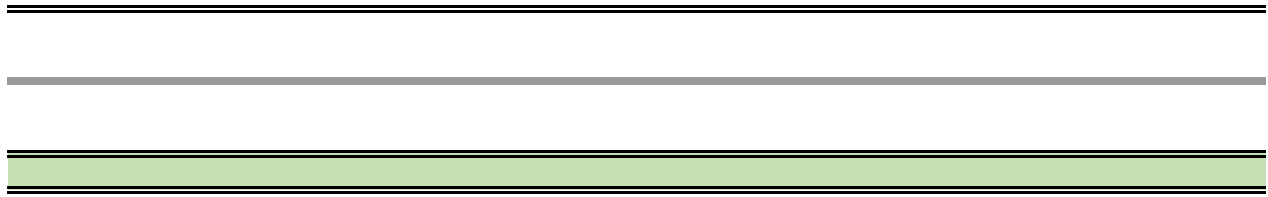




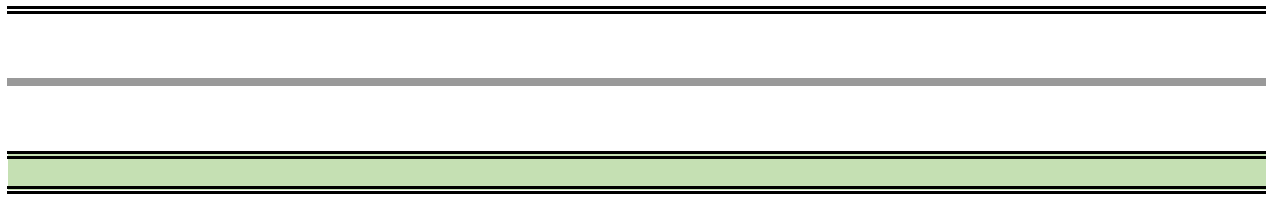
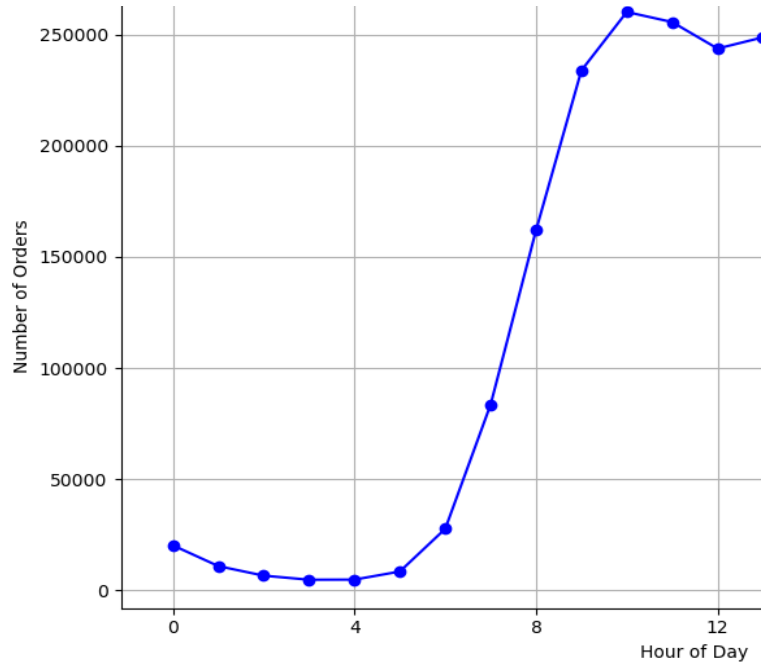
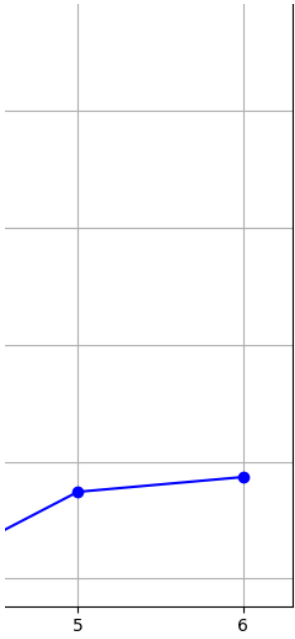
Top 4 Best Selling Departments (Northeast)

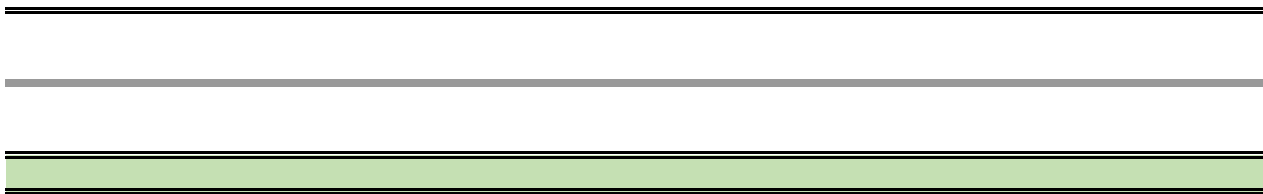
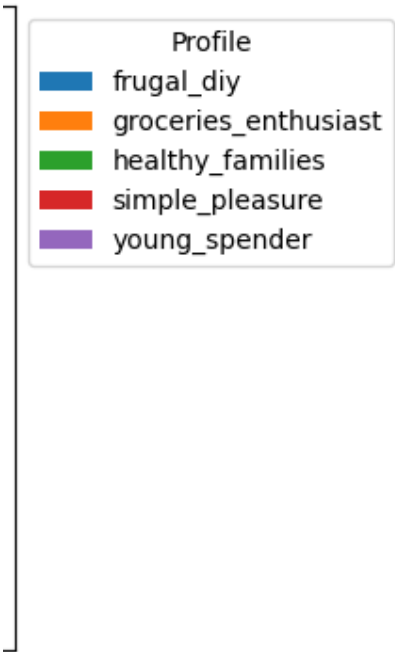




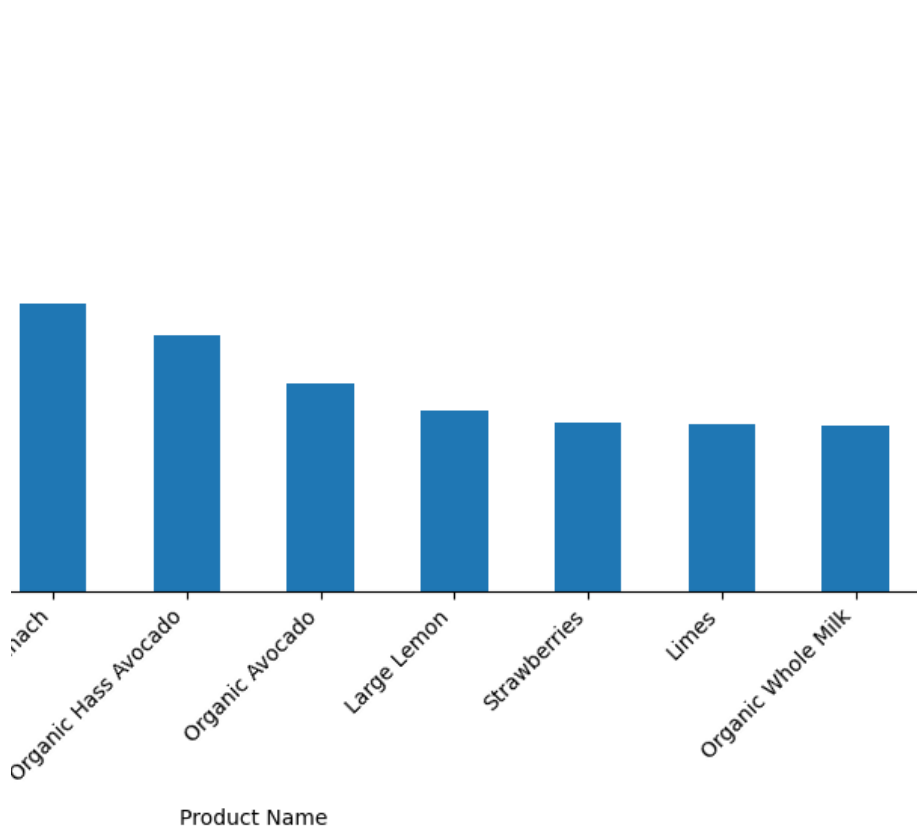



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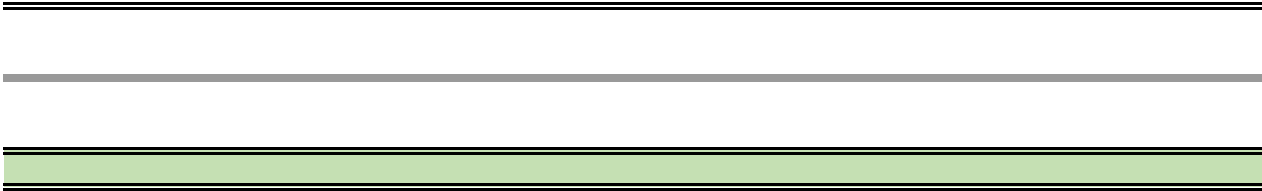
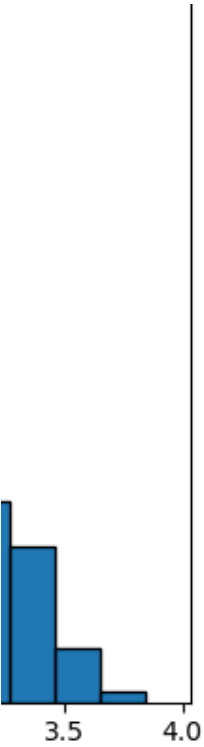


Top 10 Best Selling Products

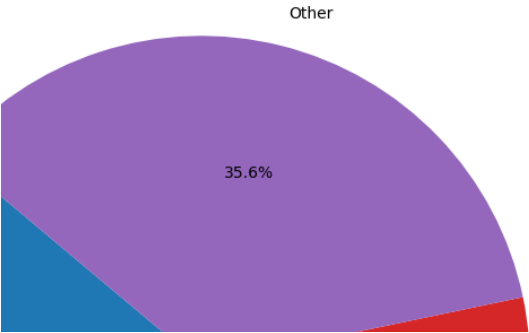



Including Outliers

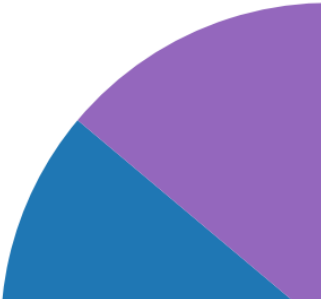


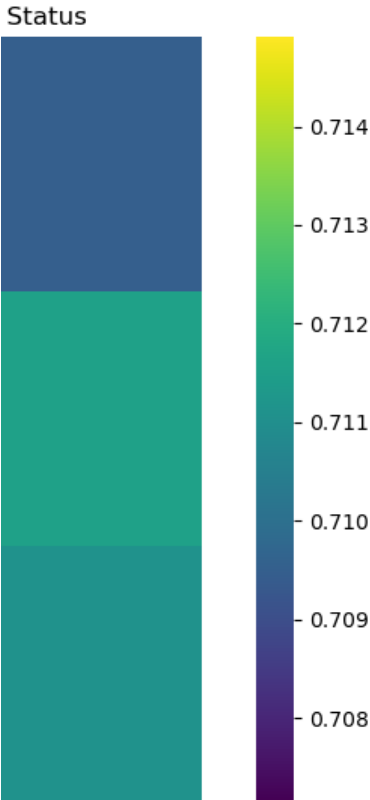
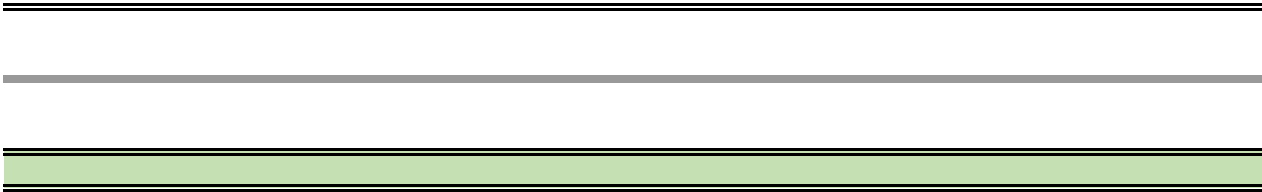
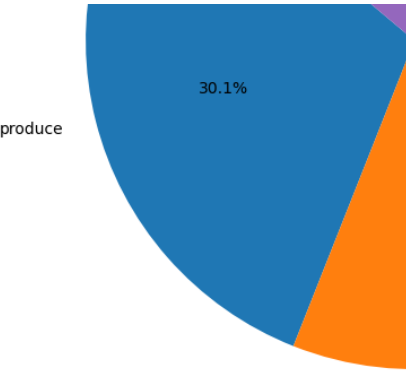
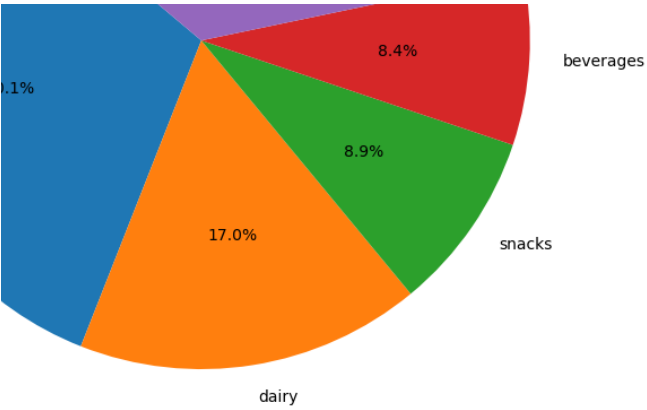


Top 4 Best Selling Departments (South)



Top 4 Best Selling







A boxplot showing the distribution of the number of children per family. The y-axis is labeled 'Number of children' and ranges from 0 to 10. The boxplot has a median line at 2, a box from 1 to 3, and whiskers extending from 0 to 4. There are no outliers.

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Weekly Orders

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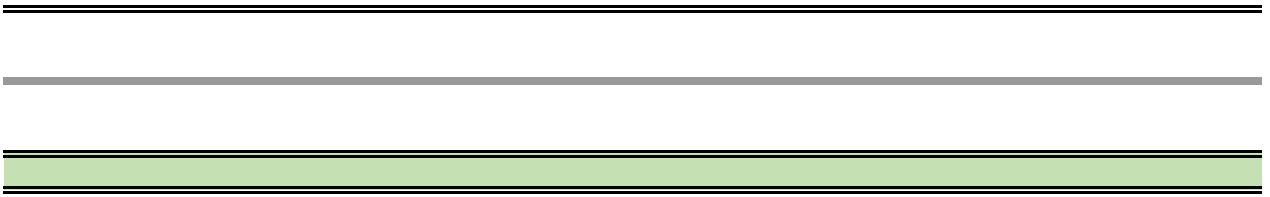


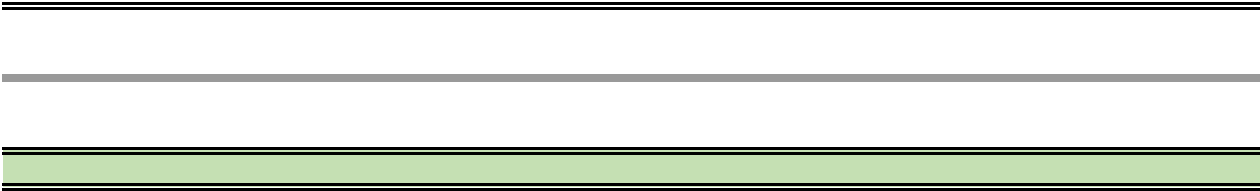
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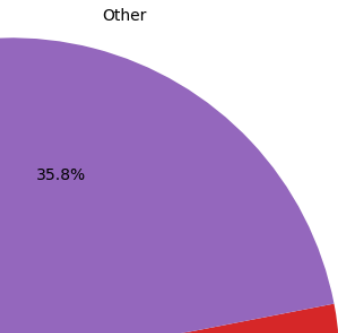
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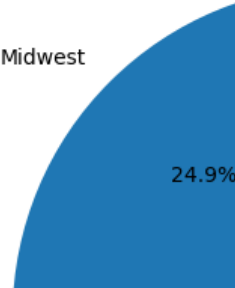


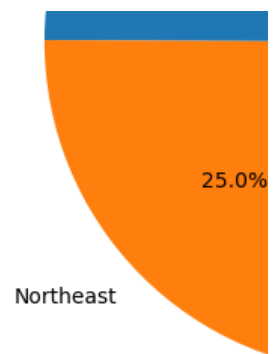
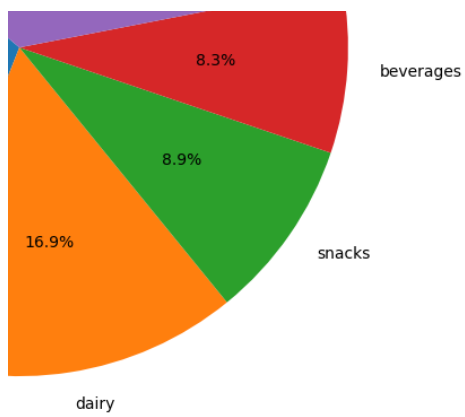


Departments (West)

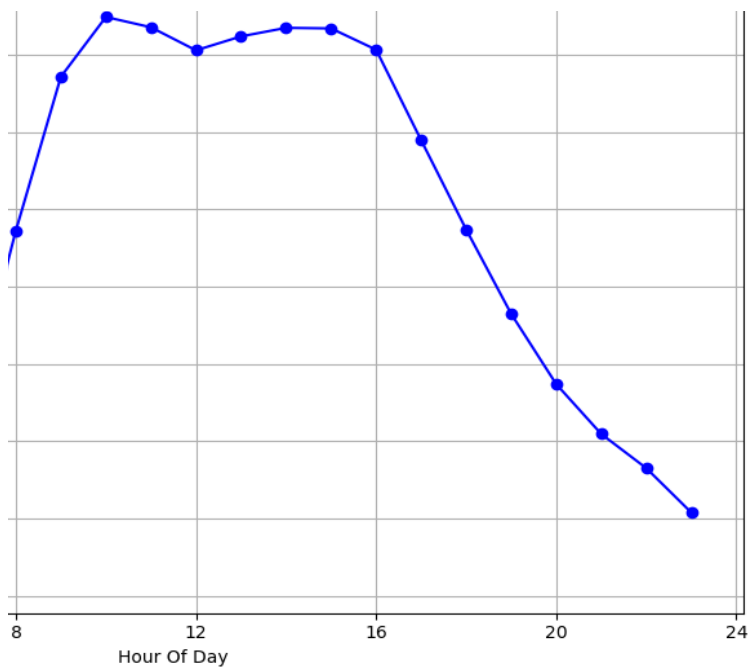


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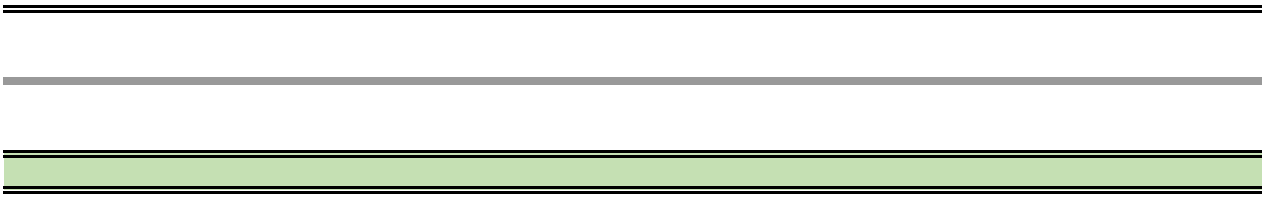
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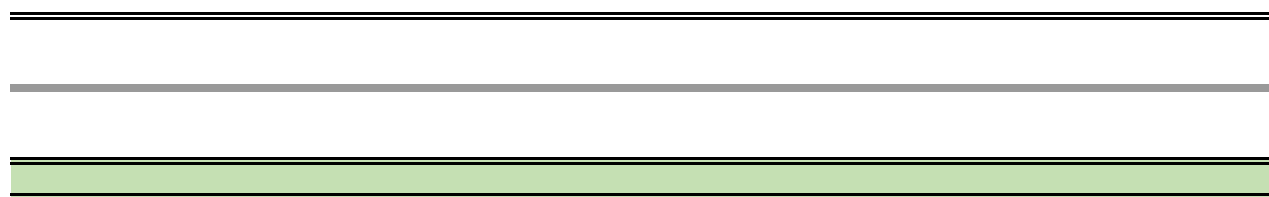
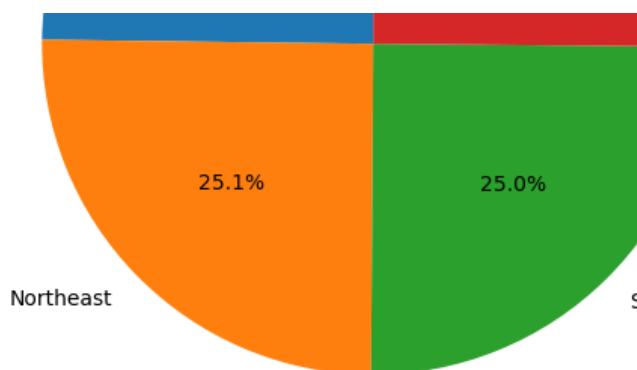
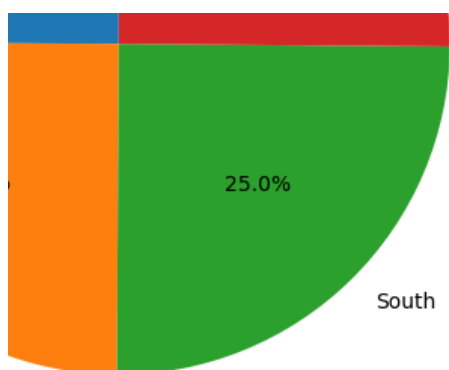
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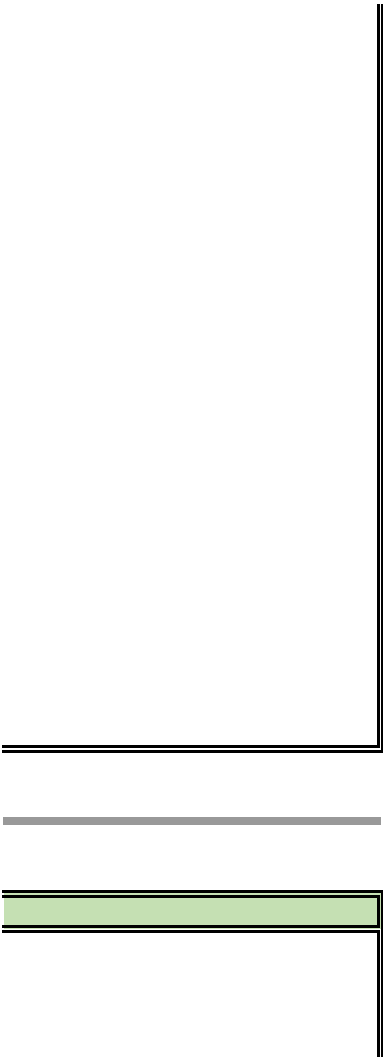
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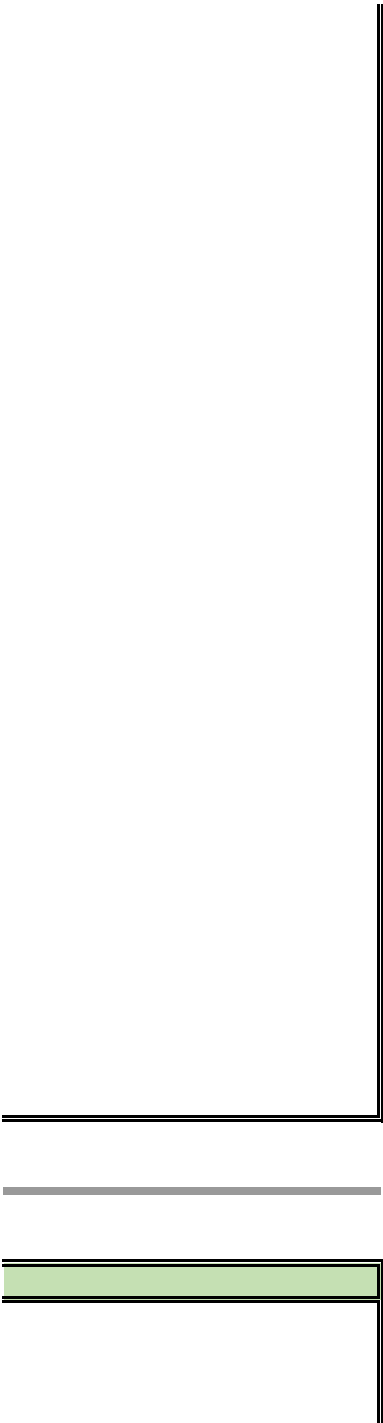
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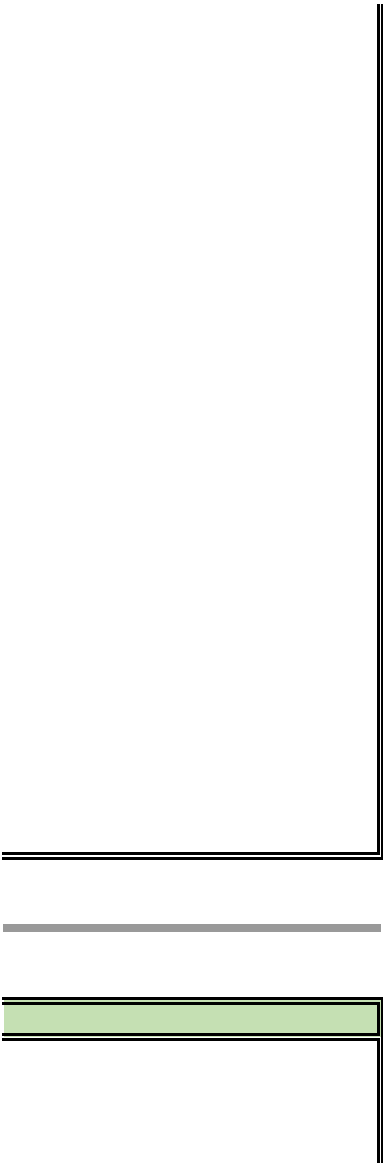
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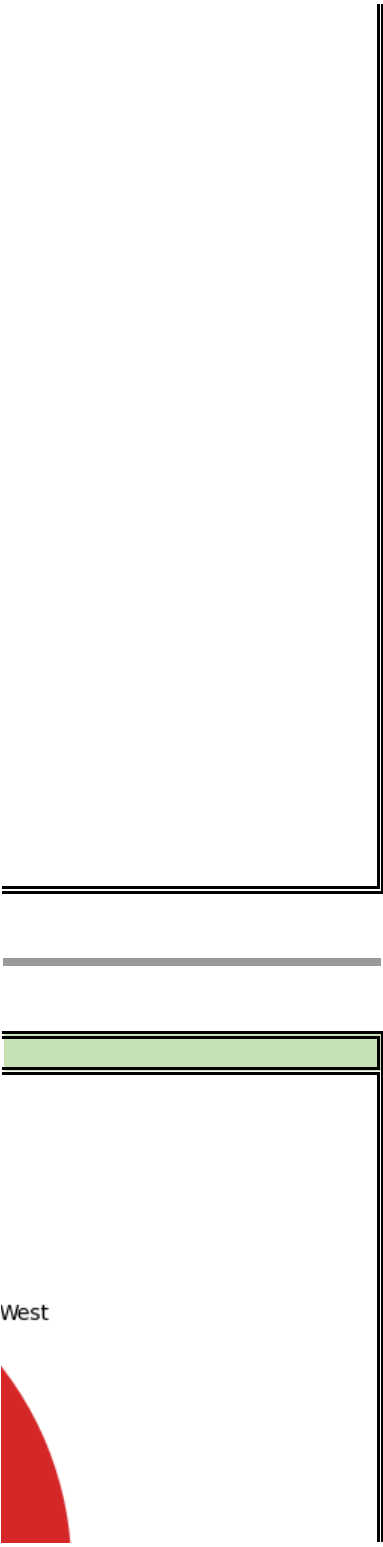
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South

