SALES PREDICTIONS

ANALYSIS AND RECOMMENDATIONS

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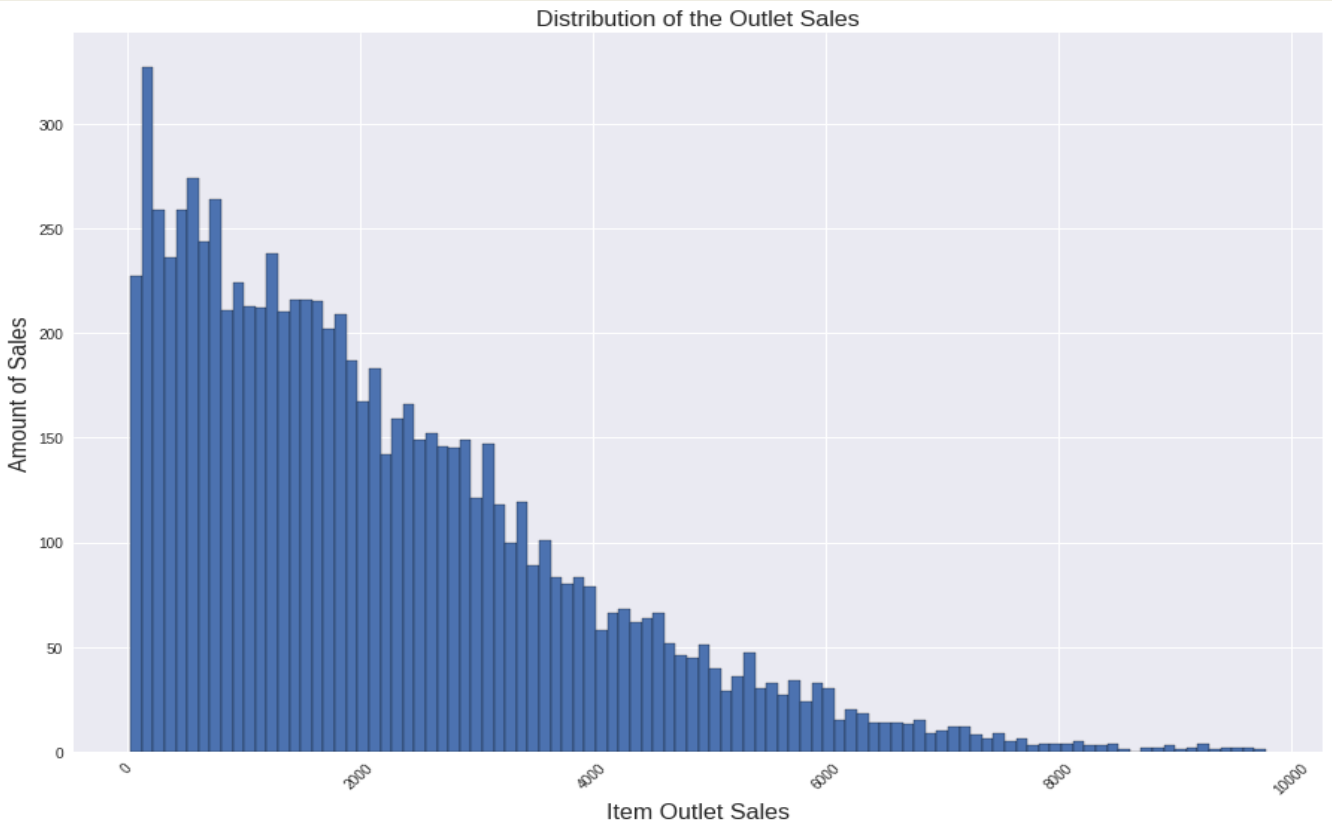
Sales Predictions

- Features of Products
  - *Type, Weight, Fat Content, Visibility, MRP*
- Features of Outlets
  - *Type, Establishment Year, Size, Location*
- Goal: Help retailers understand the impact of products and outlet features that increases sales

Variable Name	Description
Item_Identifier	Unique product ID
Item_Weight	Weight of product
Item_Fat_Content	Whether the product is low fat or regular
Item_Visibility	The percentage of total display area of all products in a store allocated to the particular product
Item_Type	The category to which the product belongs
Item_MRP	Maximum Retail Price (list price) of the product
Outlet_Identifier	Unique store ID
Outlet_Establishment_Year	The year in which store was established
Outlet_Size	The size of the store in terms of ground area covered
Outlet_Location_Type	The type of area in which the store is located
Outlet_Type	Whether the outlet is a grocery store or some sort of supermarket
Item_Outlet_Sales	Sales of the product in the particular store. This is the target variable to be predicted.

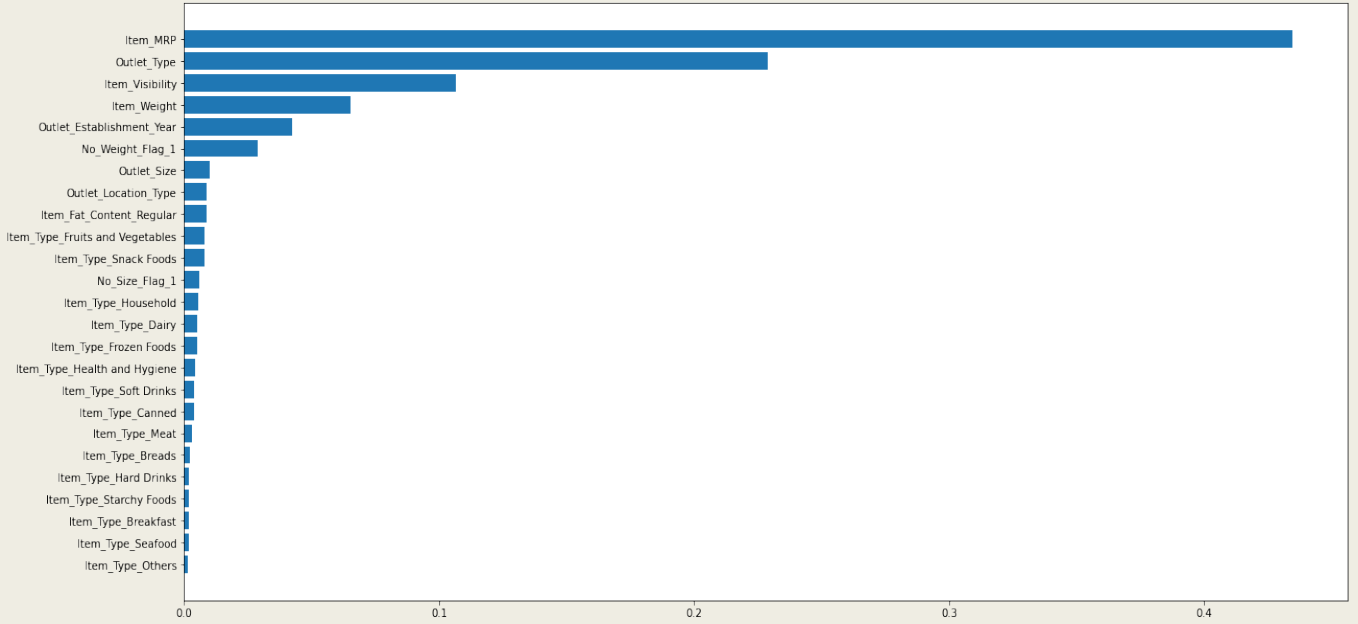
The distribution of Item Outlet Sales



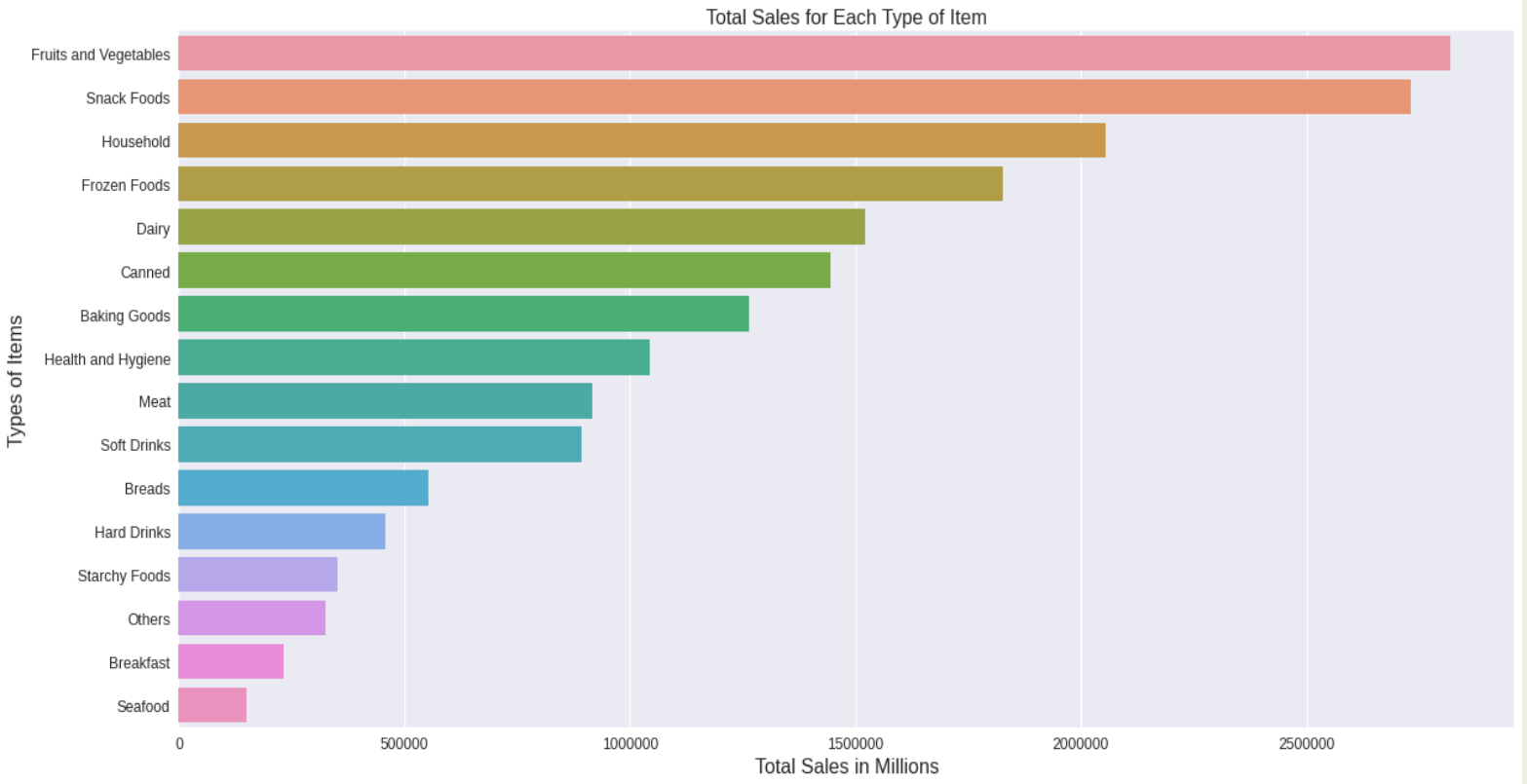
Insight: The price range for the amount of outlet sales being done. Higher bars in the really low price range are that most items being sold under $200.
Sales past the $6,000 range are seen as outliers.

Best Fit Machine Learning Model

- Random Forests
  - *MAE: 783.64*
    - Model is off on average of $784
  - *RMSE: 1114.43*
    - With outliers model is off by $1114

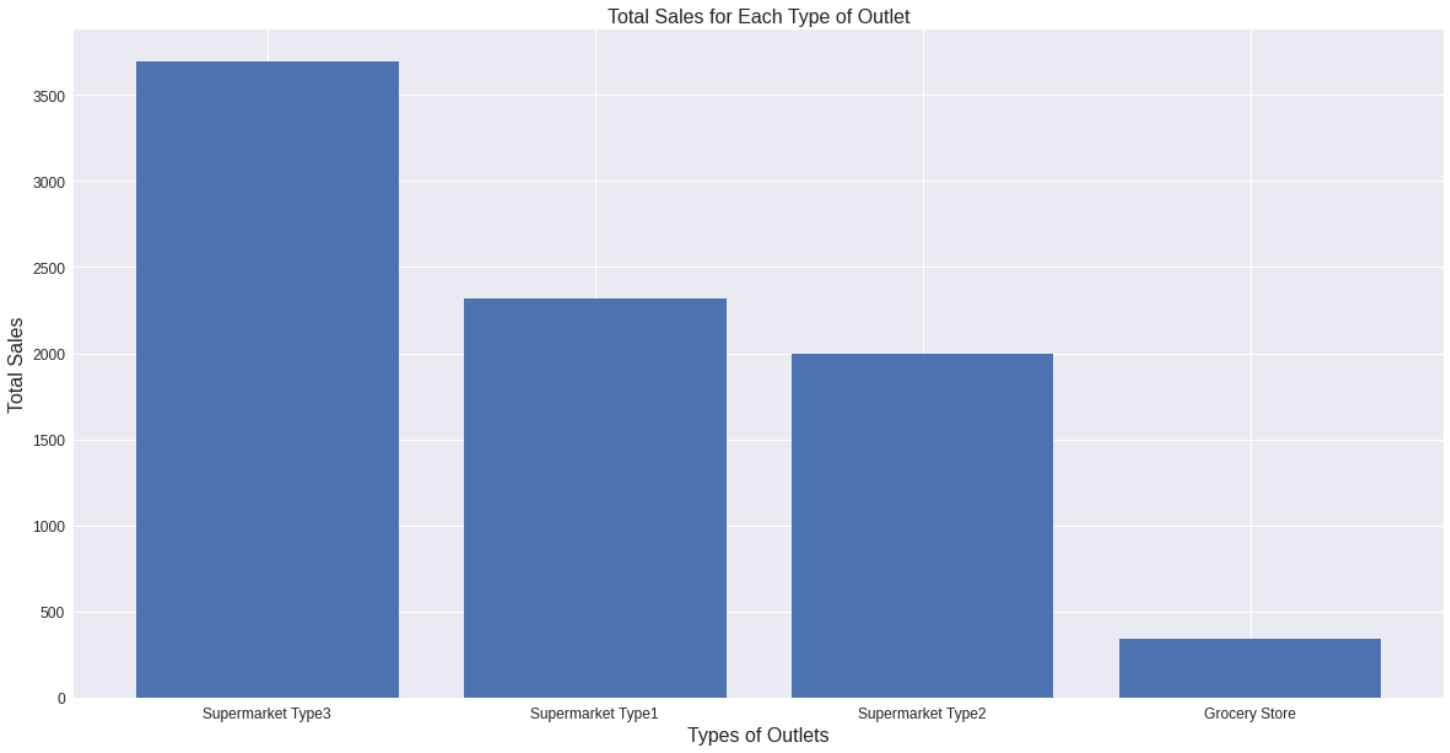


What are the total sales for each item type?



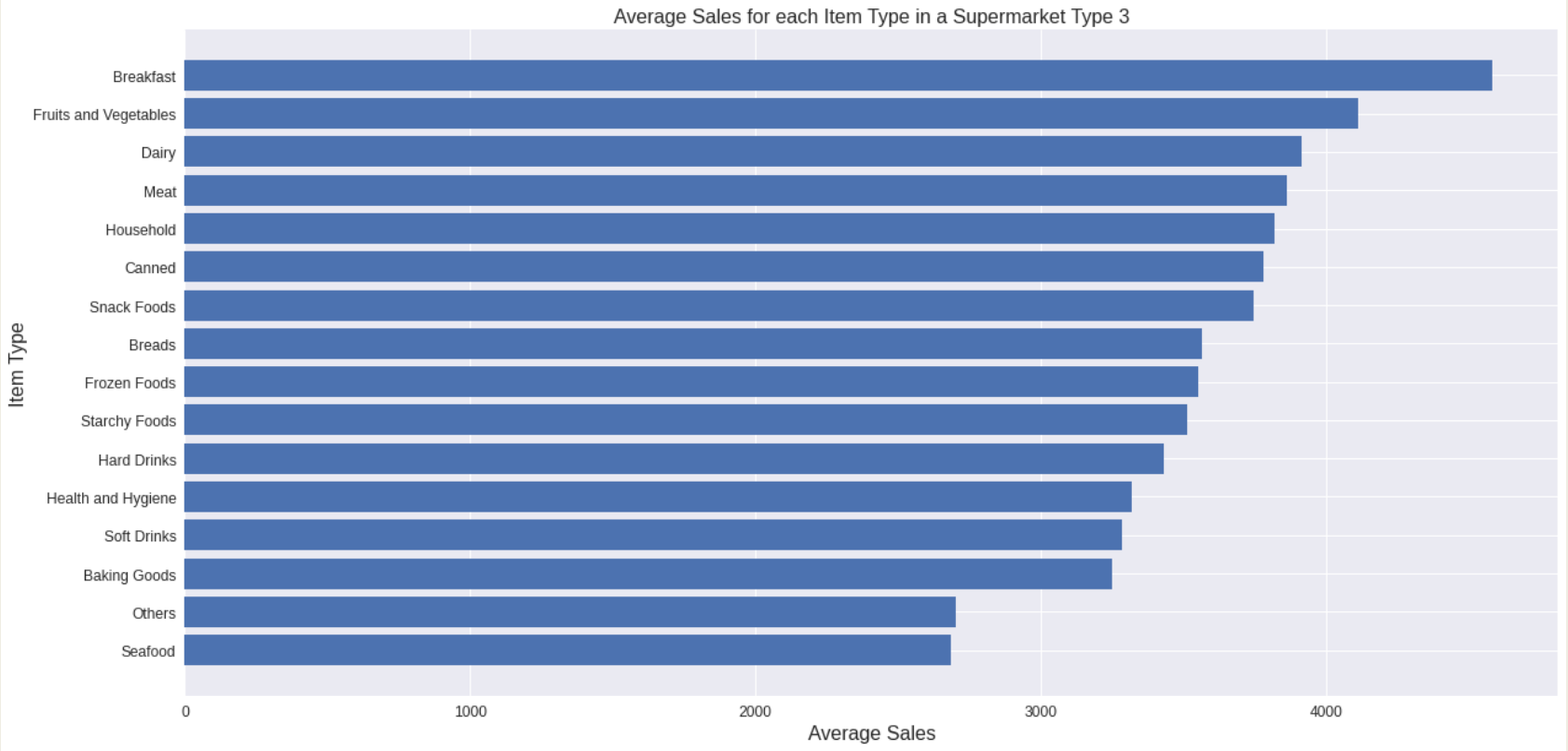
Insight: Fruits and Vegetables have the most sales coming in at over 2.5 million. Seafood has the least amount of sales at around one hundred thousand.

What is the average sales for each type of outlet?



Insight: On average each Supermarket Type3 makes a total sale of over 3500 which is the most of the 4 outlet types. Grocery Outlet Type makes less than 500 for each outlet.

What are the top 4 item type sales in Supermarket Type 3?



Insight: The top 4 highest sales of item types in Supermarket Type 3 are Breakfast, Fruits/Vegetables, Dairy, and Meat.

Recommendations

- Consider Grocery Stores over Supermarkets
  - *smaller scale, low overhead*
  - *items sell fairly quickly*
- Focus on produce items
  - *vegetables, fruits, dairy, meats, grains*
- You can never go wrong with selling produce!

THANK YOU

Collaborated on code with:
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