

MAVERIK[®]



SALES FORECAST

DataCrafters

Anukriti

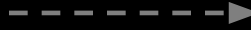
Krishna

Litzy

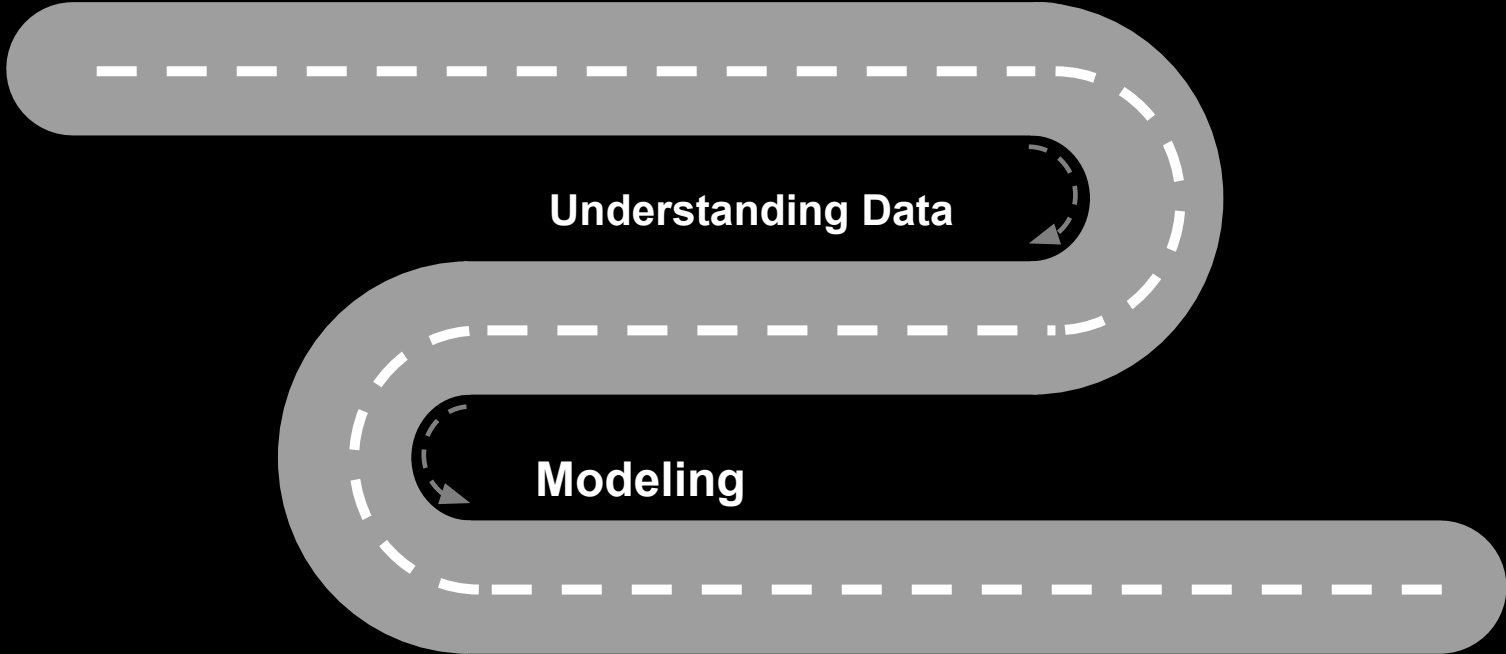
Shivi

Overview

Business Problem



Proposed Solution



Understanding Data

Modeling

Recommendations



Business Value

Business Problem

- Increase footprint by about 30 new stores next year
- Predict New Store's everyday sales
- Accurate forecast enhance financial planning
- Enhance Initial ROI accuracy



Target



Diesel



Food Sales



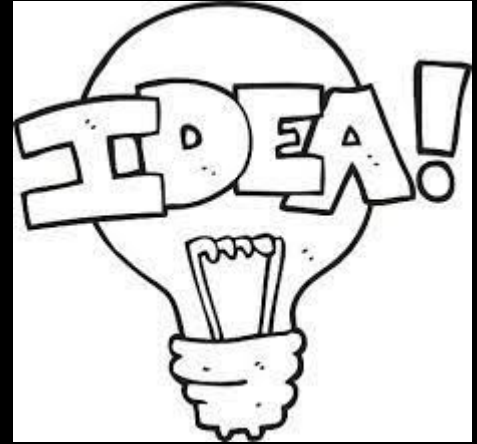
Inside Sales



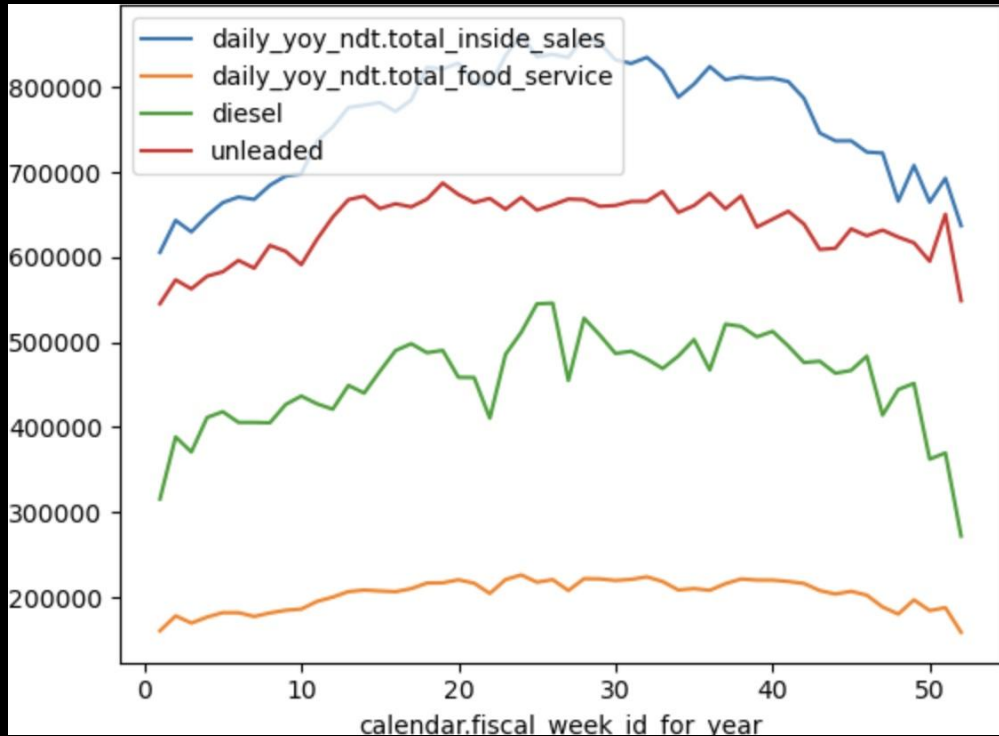
Unleaded

Proposed Solution

- Create robust predictive model: Time Series
- Forecast annual sales for upcoming year
- Suggest ways to enhance sales
- Identify influential variables for predictions

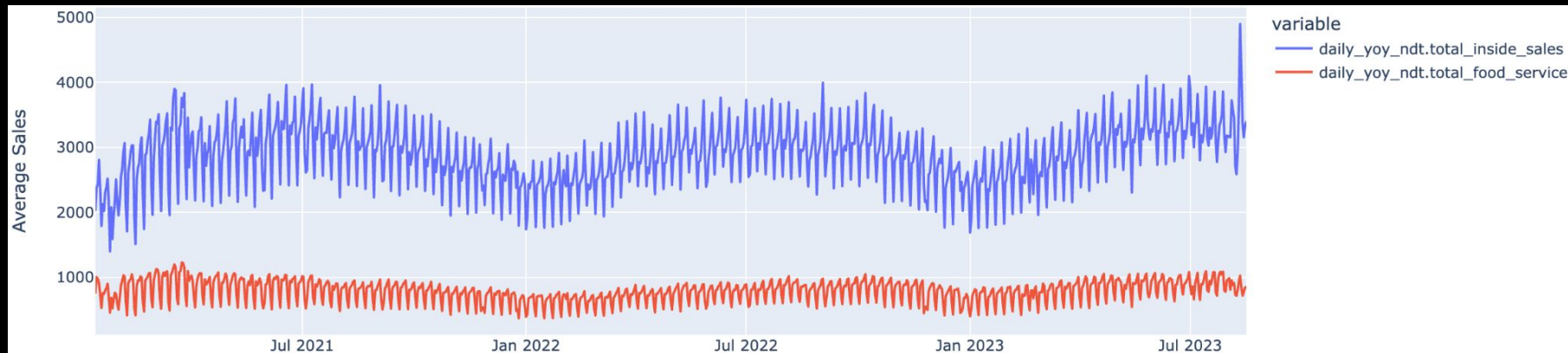


Understanding the Data

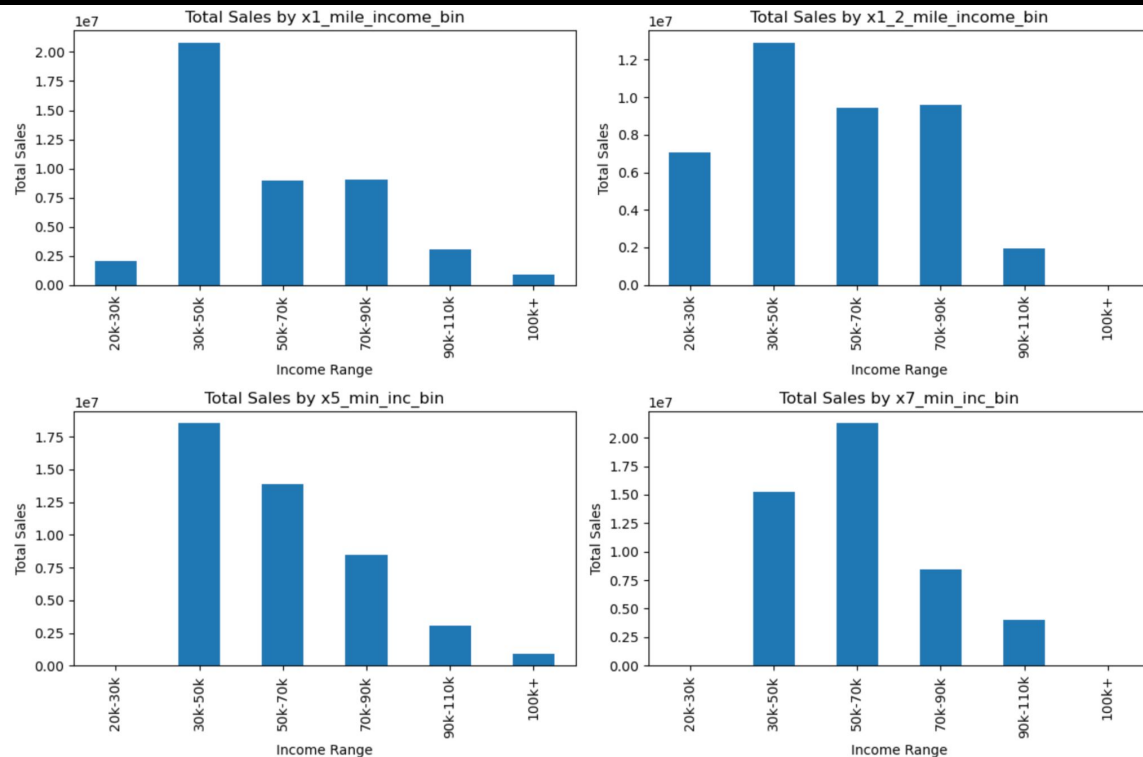


- Mid-year peak sales.
- Year-end sales decline.
- Maximum Revenue - Inside Sales
- Minimum Revenue - Food Sales

Average Sales Over Time

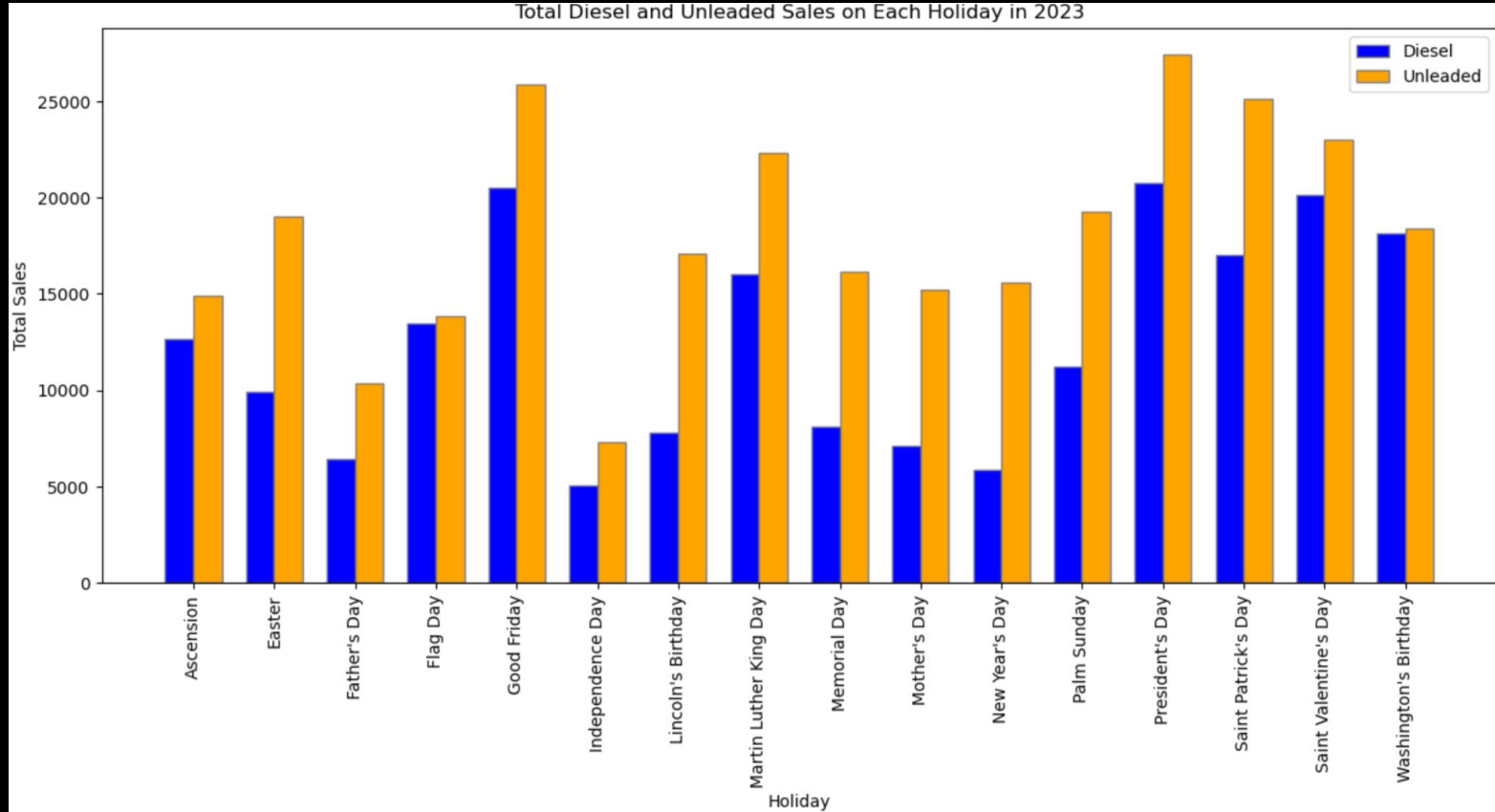


Total Store Sales by Income Type

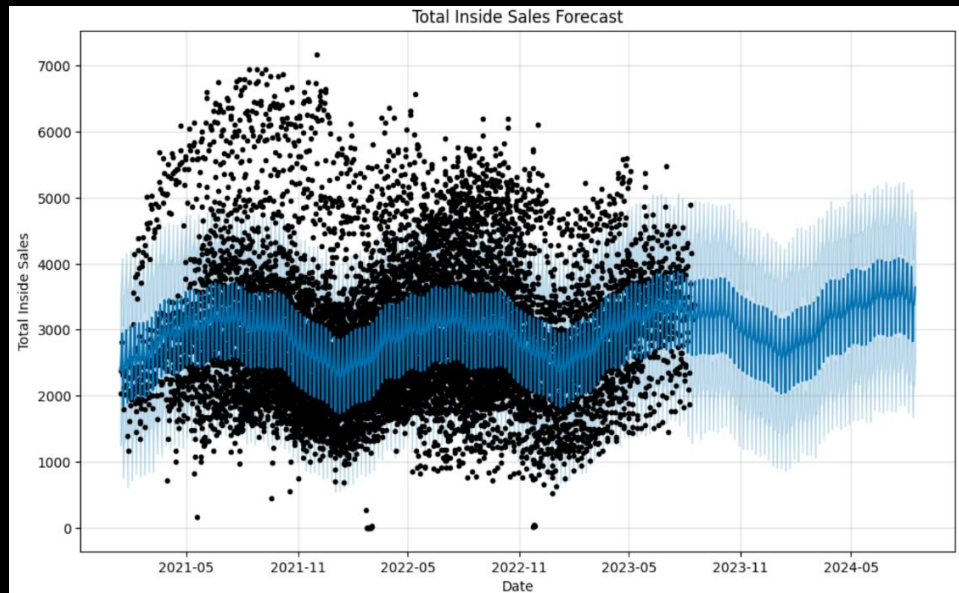


- \$30k-\$90k earners drive food and inside sales

Effect of Holidays on Diesel and Unleaded Sales

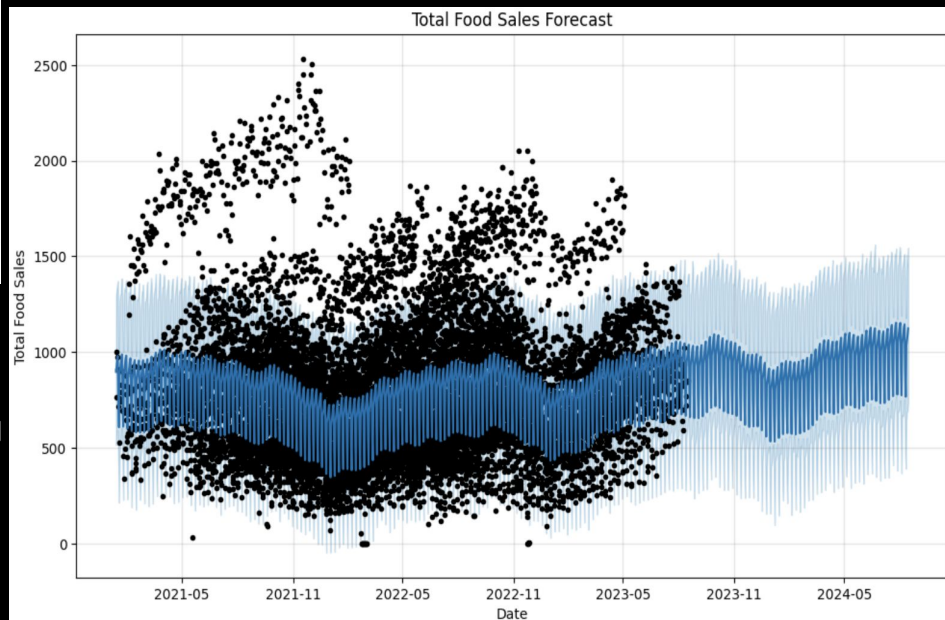


Model Building - Prophet

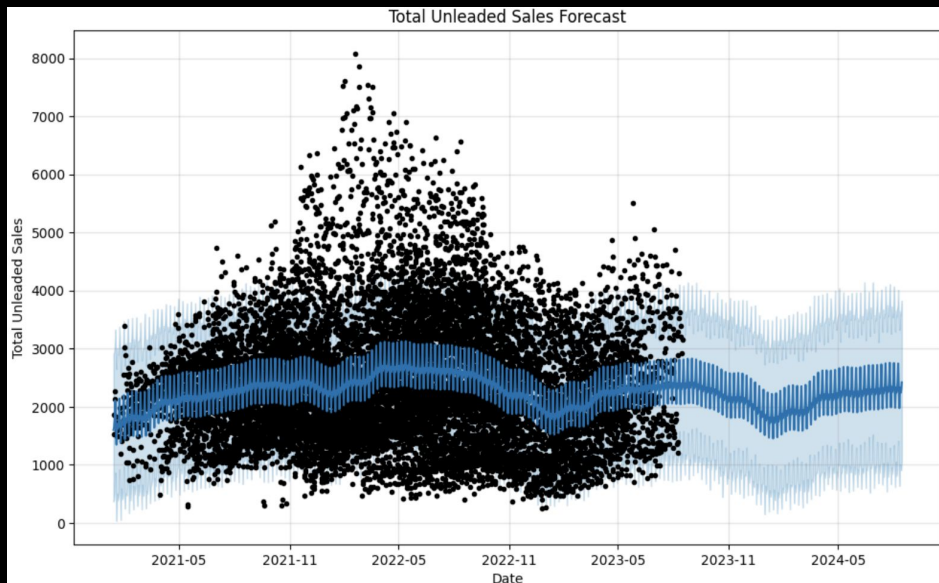


→ Inside Sales
RMSE: 1148.6

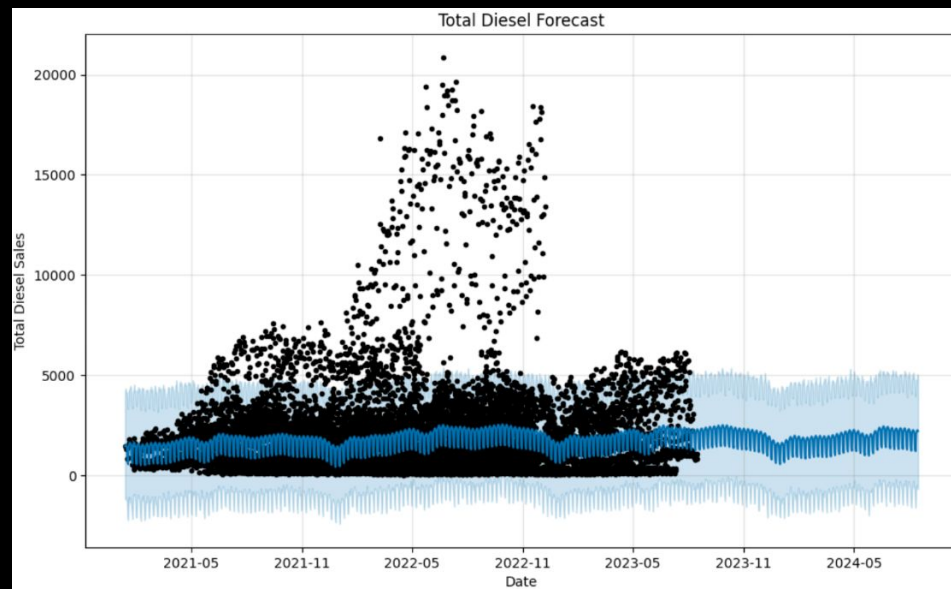
Food Sales
RMSE: 542 ←



Model Building - Prophet

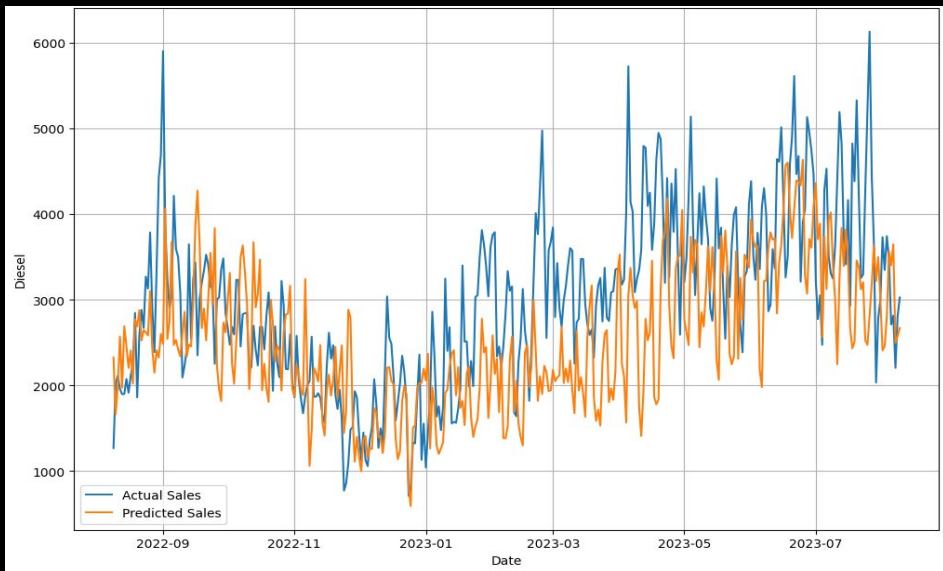


→ Unleaded
RMSE: 767



Diesel
RMSE: 5466.9

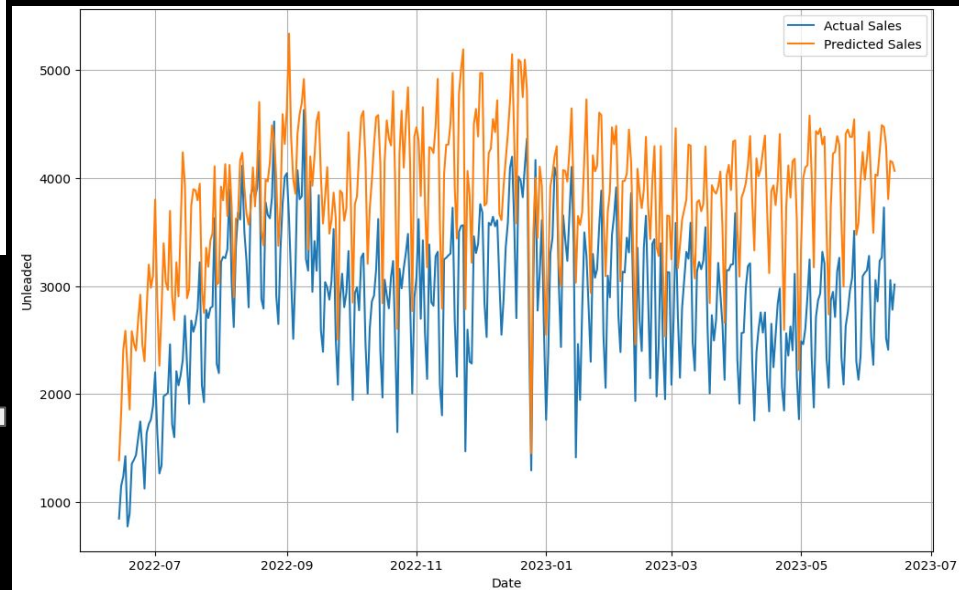
Model- XGBoost Split on Stores



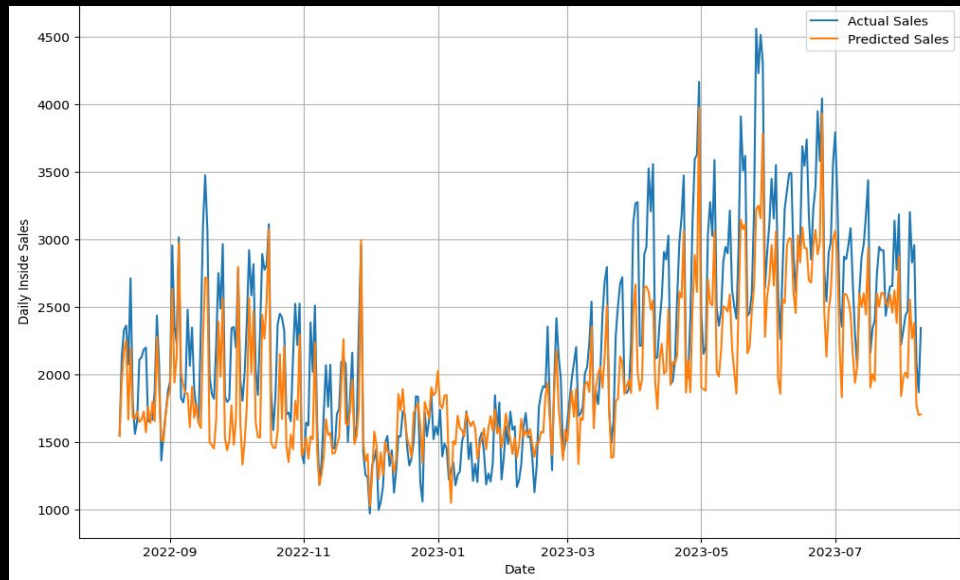
Diesel

Unit RMSE: 1030

Unleaded
Unit RMSE: 1056

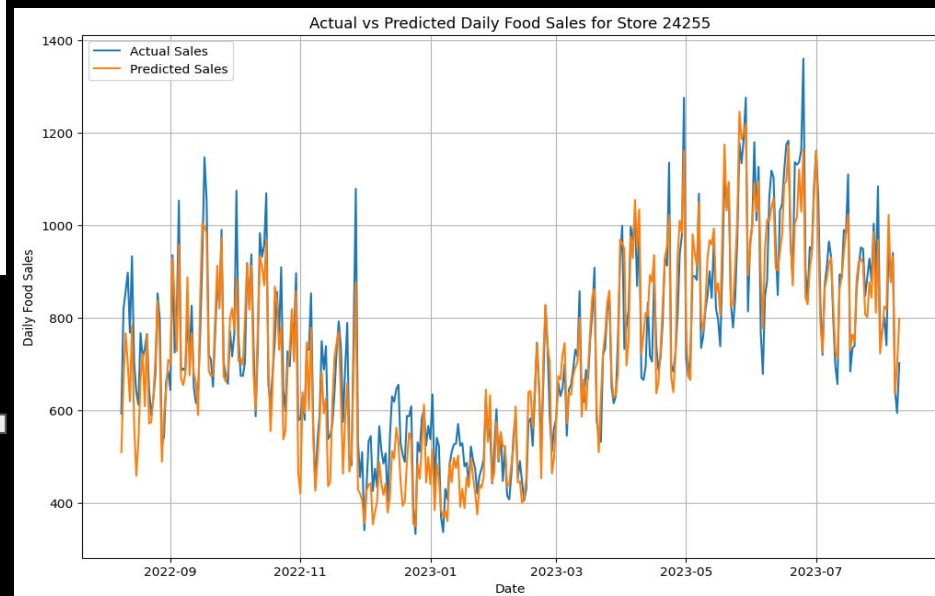


Model- XGBoost Split on Stores



➔ Inside Sales
Unit RMSE: 400.62

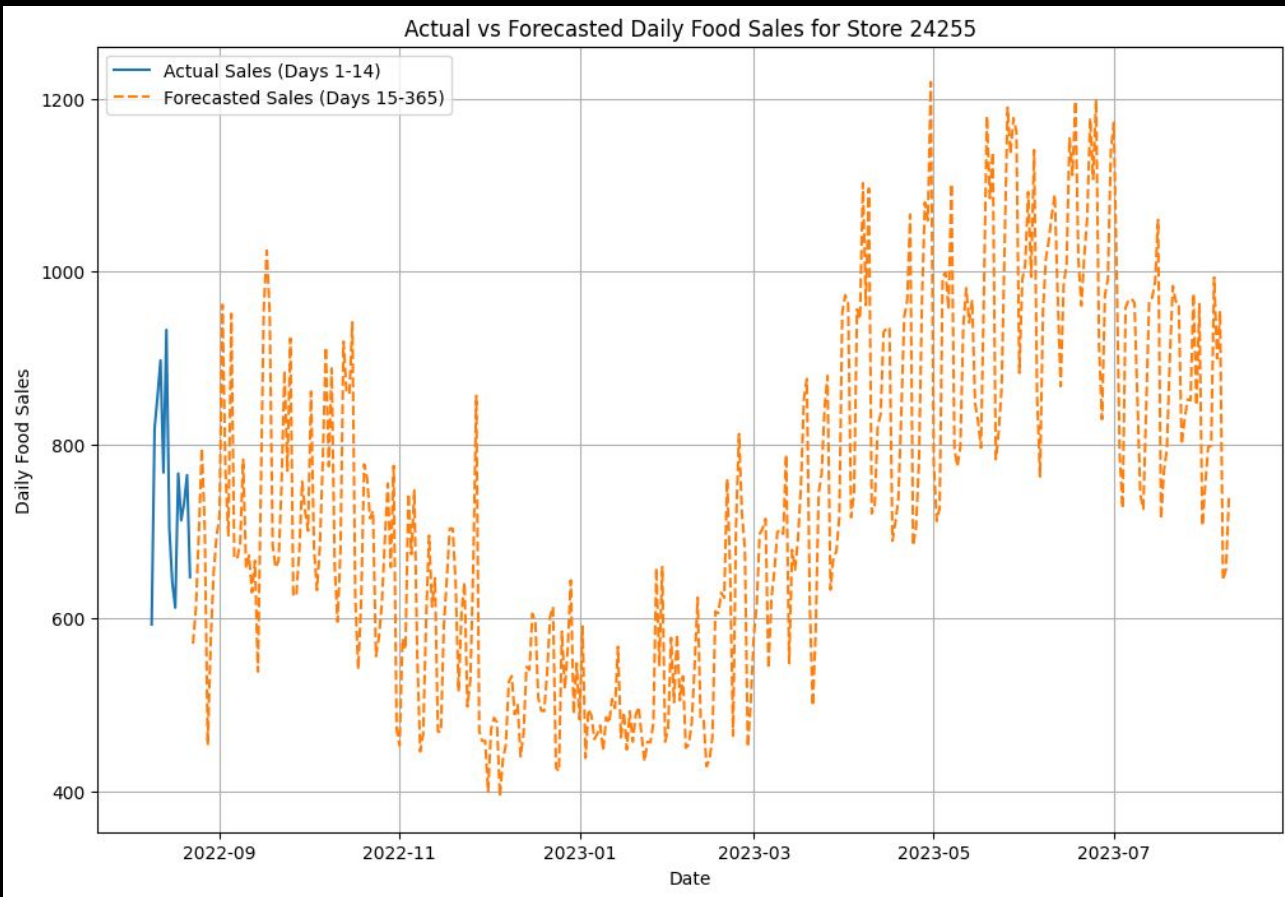
Food Sales
Unit RMSE: 102.62



Test Performance

Category	Sum of Actual	Sum of Predicted	Percentage Difference
Food Sales	270409.83	264980.19	-2.01%
Inside Sales	1094212.97	1139355.12	4.13%
Diesel	1097132.46	1035878.0	-5.58%
Unleaded	1046077.8	1174431.25	12.27%

Forecasts Based on Week's Data

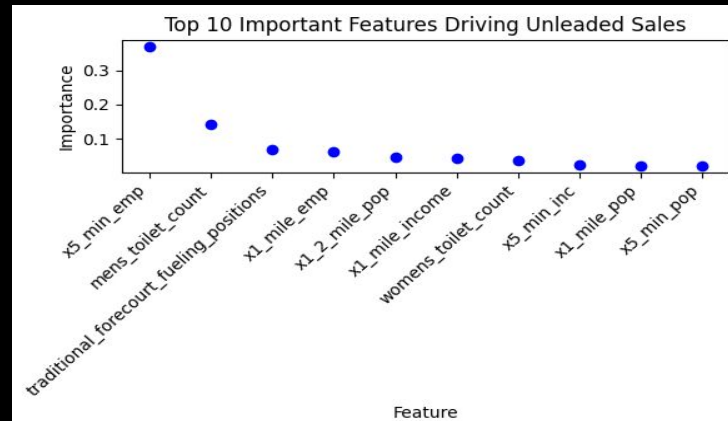
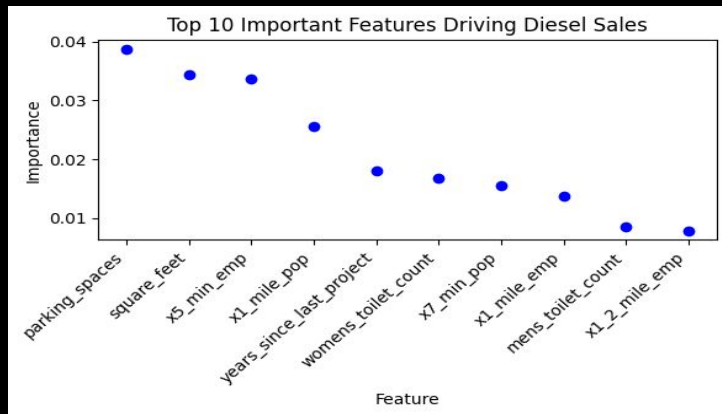
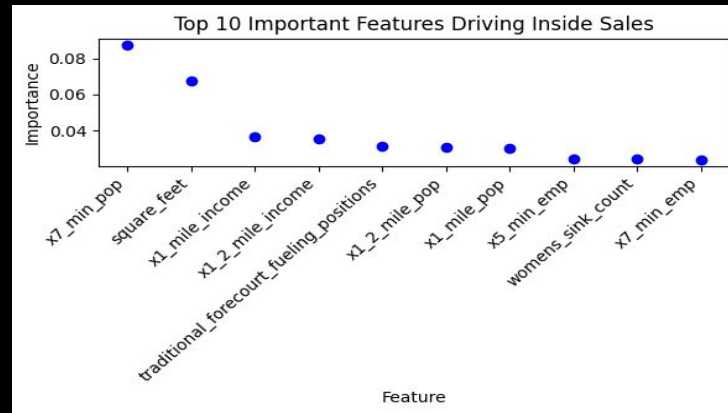
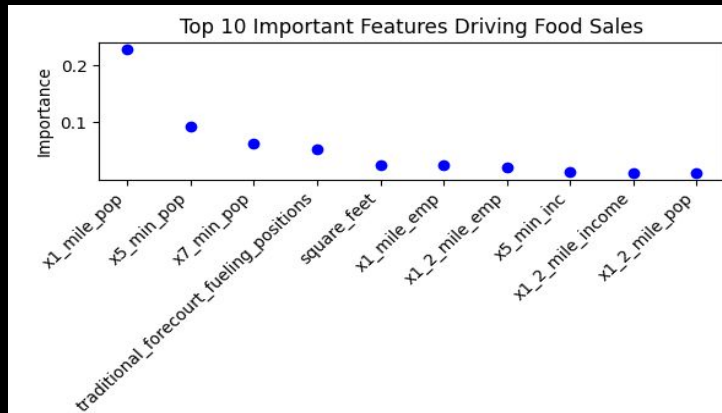


Compared 365 days forecasts
for all the targets based off 2, 3
weeks predictions

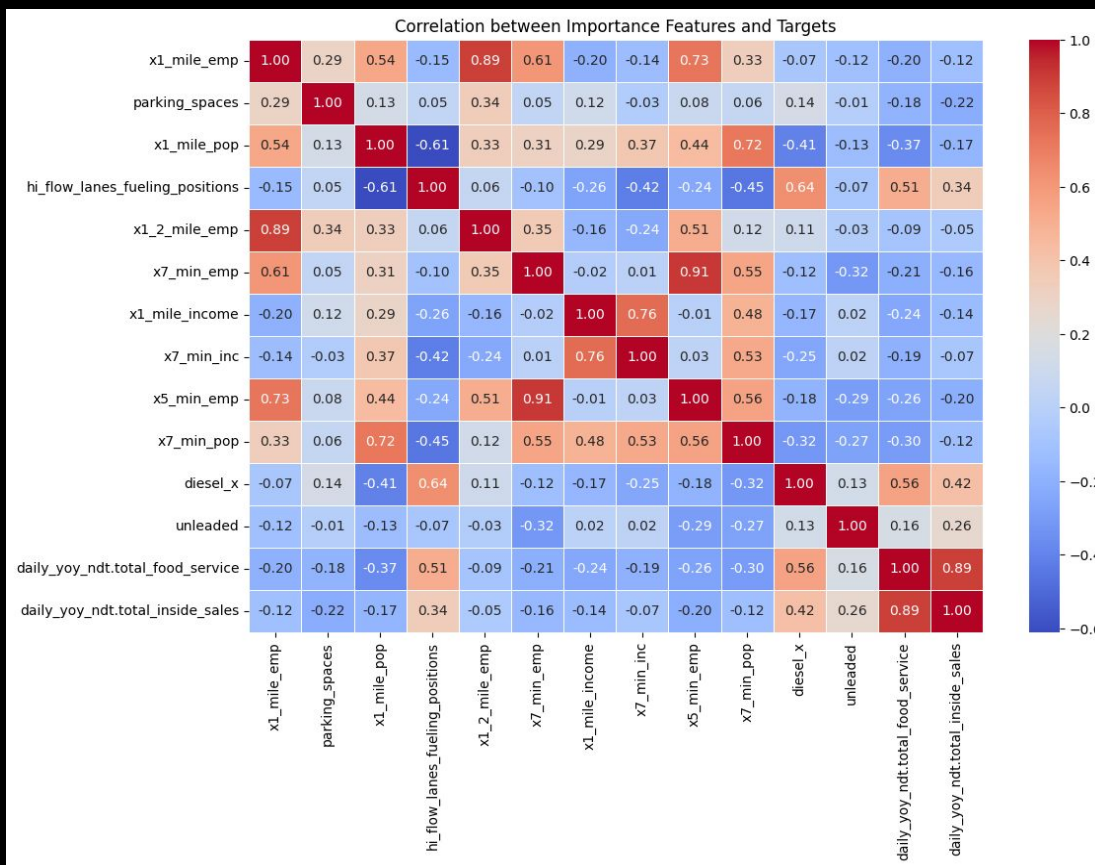
Comparing RMSE

Category	Prediction Period	RMSE	Prediction Period	RMSE
Food	Two-Week Prediction	36131	Three-Week Prediction	35174.5
Inside Sales	Two-Week Prediction	78191.4	Three-Week Prediction	75622.1
Unleaded	Two-Week Prediction	107417	Three-Week Prediction	98705.1
Diesel	Two-Week Prediction	192934	Three-Week Prediction	183067

Important Features Driving Sales



Key Features' Correlation with Targets



Recommendations

Maximum Revenue



Inside Sales



Unleaded

Features :

- Employed people living around
- Parking Spaces
- Facilities easing fueling

Business Value



Inventory
Management



Resource Allocation



WASTE REDUCTION



Pricing Strategy



FINANCIAL
PLANNING



Questions