

# WALMART STORE SALES FORECASTING

EZGI GUMUSBAS



# Overview

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Problem  
Purpose  
The Data  
Insights  
Models&Results  
Solutions  
Future Work

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## Problem 1

Higher/Lower  
Stocks

## Problem 2

Price Policy

# Problem

## Problem 3

Not reaching  
projected target:  
damaged stock  
prices



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# Purpose

PREDICT SALES OF THE STORES

FIND EFFECTS OF HOLIDAYS ON  
SALES

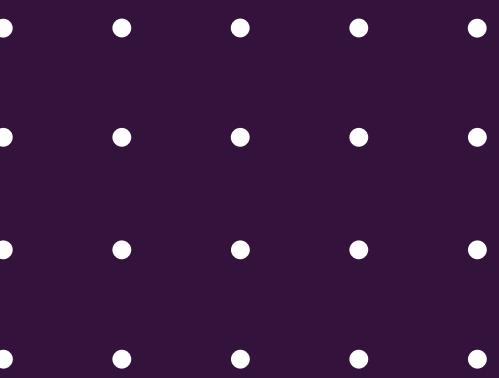
DEFINE HIGHER SEASONAL SALES  
DEPARTMENTS

# THE DATA

- • • WALMART RECRUITING COMPETITION
- • • KAGGLE

MAINLY CONTAINS ;

- WEEKLY SALES
- MARKDOWNS
- SIZE/TYPE OF STORES
- HOLIDAYS
- EXTERNAL FEATURES

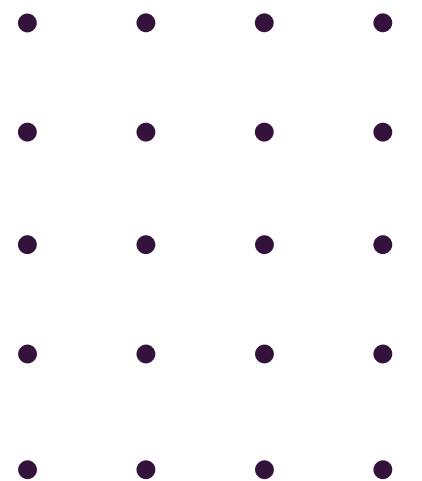


# Insights

## SIZE OF STORE

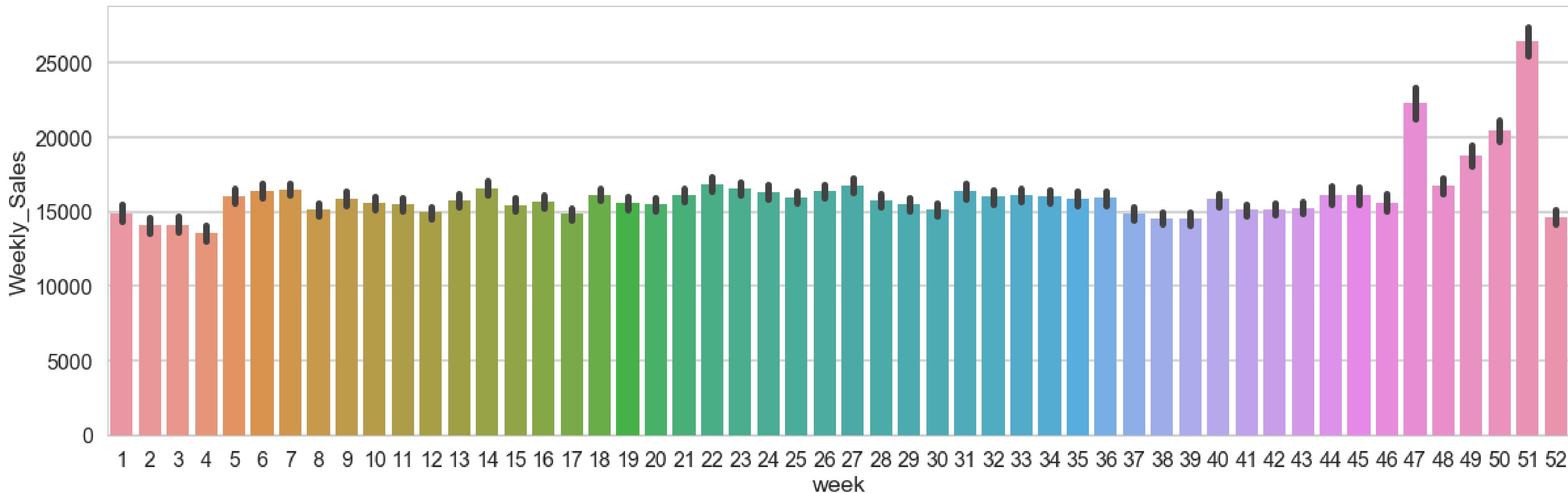
## STORE LOCATION

**NO PATTERN FOR CPI,  
UNEMPLOYMENT RATE,  
TEMPERATURE AND FUEL PRICE**



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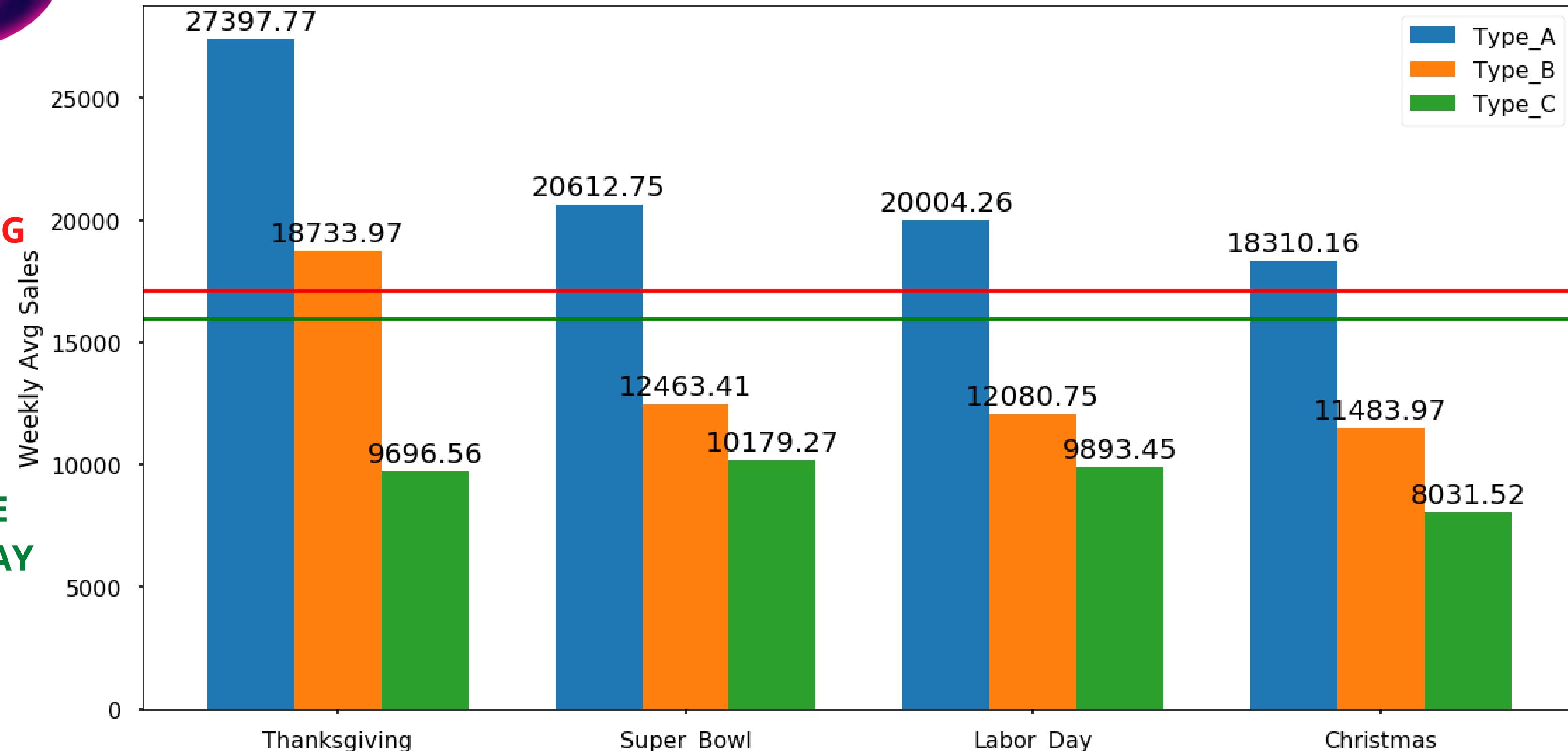
# HOLIDAY EFFECTS



08

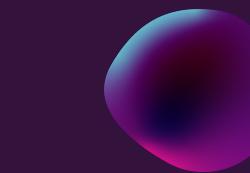
# HOLIDAY & STORE TYPES

**RED LINE  
HOLIDAY AVG**  
**GREEN LINE  
NOT-HOLIDAY  
AVG**



# MODELS

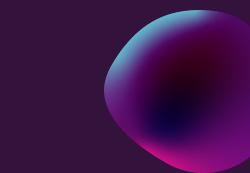
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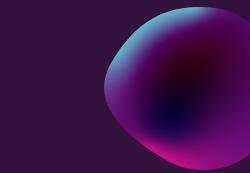
**RANDOM FOREST  
REGRESSOR**



**ARIMA**



**EXPONENTIAL SMOOTHING**



**ARCH**

# RESULTS

WEIGHTED MEAN ABSOLUTE ERROR :

IT MATTERS 5 TIMES MORE THAN IF HOLIDAY  
PREDICTION IS WRONG

50\$ ERROR FOR NON-HOLIDAY = 250\$ FOR HOLIDAY

**821 WMAE  
%4 ERROR**

# SOLUTIONS

With the Accurate Prediction;

**Determine Seasonal  
Demands and Take  
Action for This**

**Protect from Money  
Loss - Stock Prices**

**Inventory  
Management**

**Help to Revenue  
Forecast**

# FUTURE IMPROVEMENTS

DEPARTMENTAL MARKDOWN EFFECTS

MORE HOLIDAYS

IMPROVE DATASET - MARKET BASKET

ANALYSIS

DIFFERENT MODELS FOR STORES AND  
DEPARTMENTS

# QUESTIONS?

