

WALMART STORE SALES FORECASTING

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Overview

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Problem
Purpose
The Data
Insights
Models&Results
Solutions
Future Work

03

Problem

Problem 1

Higher/Lower
Stocks

Problem 2

Price Policy

Problem 3

Not reaching
projected target:
damaged stock
prices

04



Purpose

PREDICT SALES OF THE STORES

FIND EFFECTS OF HOLIDAYS ON
SALES

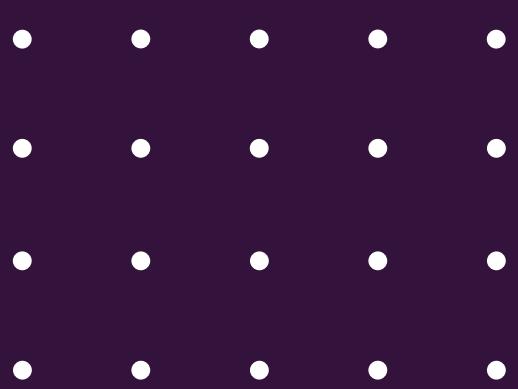
DEFINE HIGHER SEASONAL SALES
DEPARTMENTS

THE DATA

- • • WALMART RECRUITING COMPETITION
- • • KAGGLE

MAINLY CONTAINS ;

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



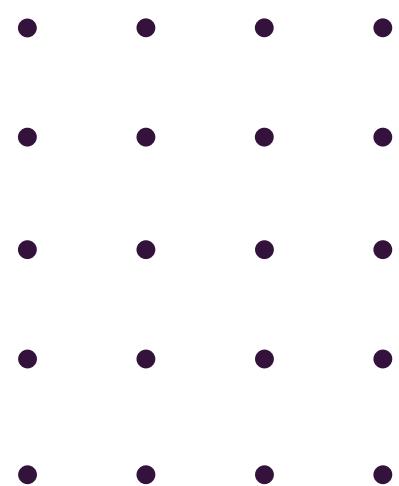
Insights

06

SIZE OF STORE

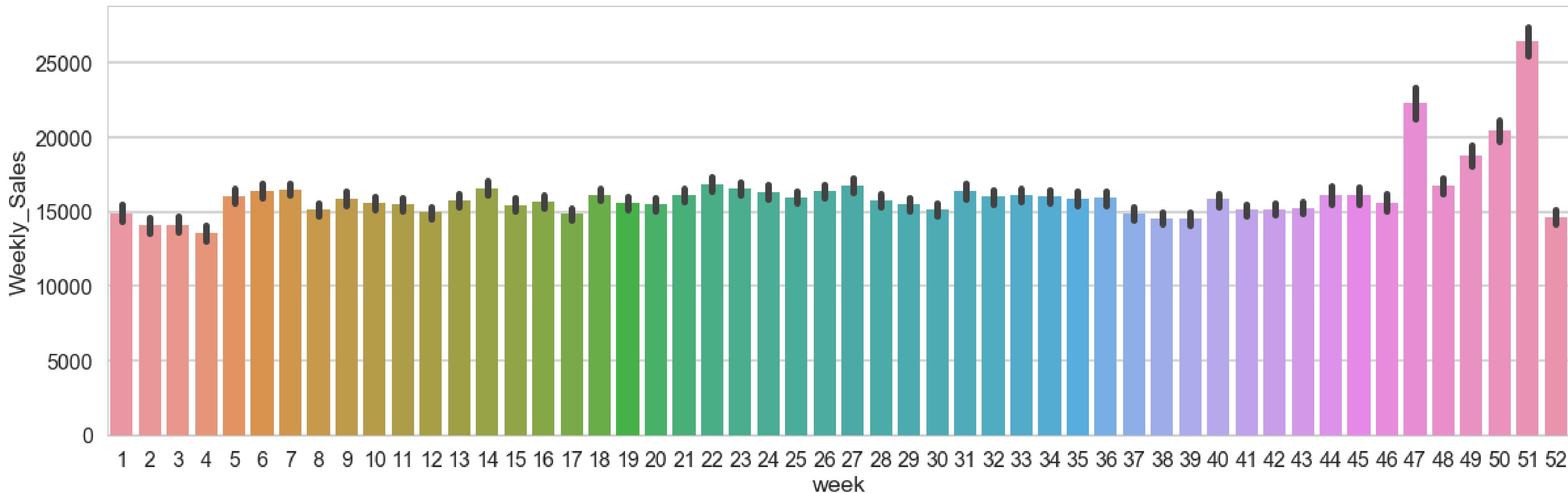
STORE LOCATION

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



07

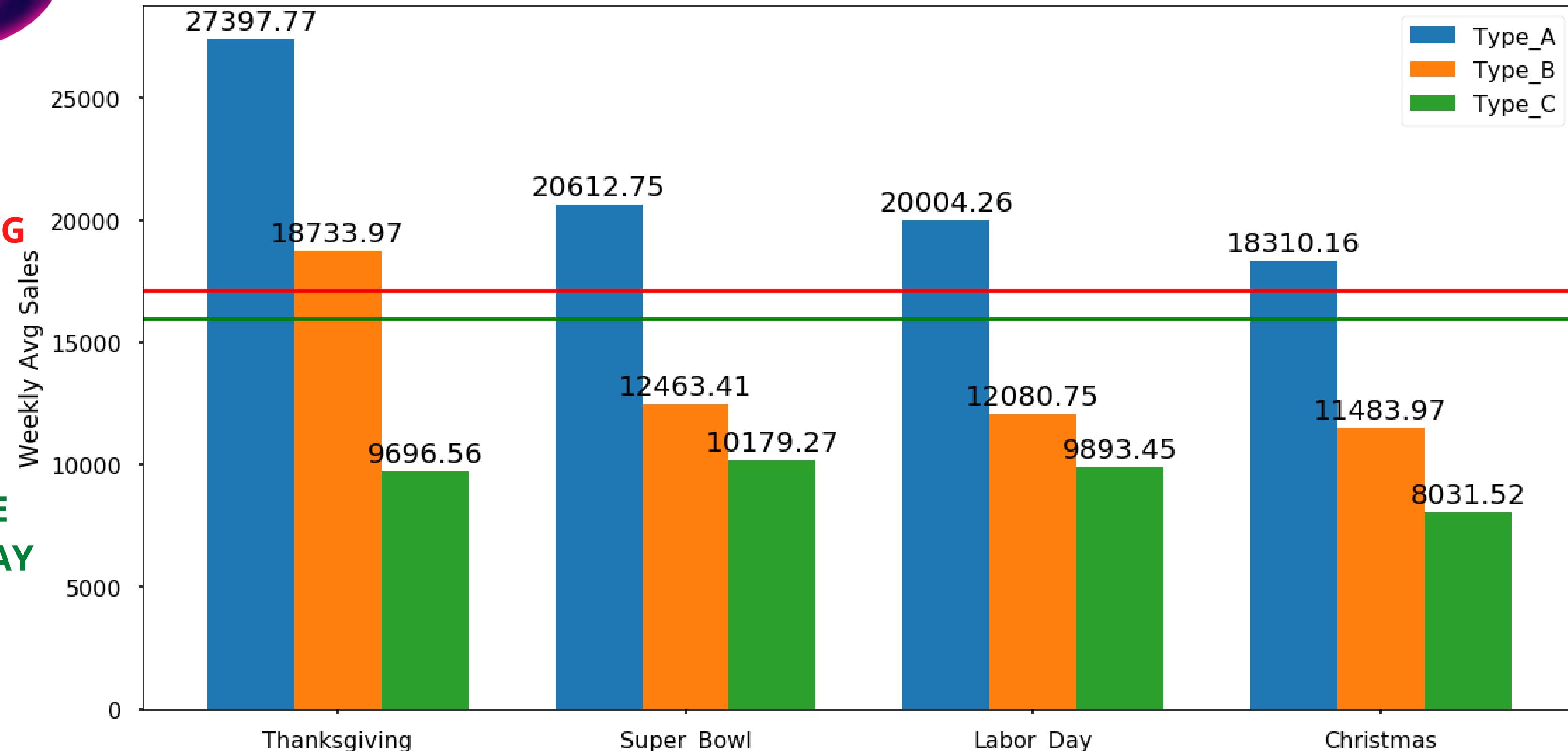
HOLIDAY EFFECTS



08

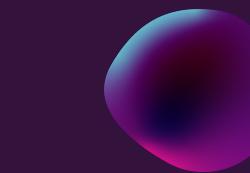
HOLIDAY & STORE TYPES

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



MODELS

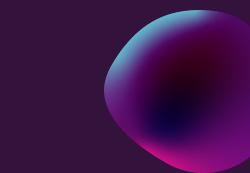
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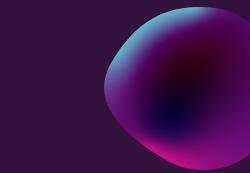
**RANDOM FOREST
REGRESSOR**



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?

