



# DATA DIVERS

# WALMART ANALYSIS

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DATE 2023

# INTRODUCTION

Data Divers is a specialist data analytics agency hired by the US grocery conglomerate Walmart to provide some insights based on historical data to help their sales and marketing team.

We were given the a dataset that covers the period 4 February 2010 to 1 November 2012, including monthly sales figures, national holidays, and inflation rate.



Data Divers is a new data analytics agency that is providing bespoke solutions for a range of clients.



**Adnan Hussain**

Data Analysis  
& Exploration



**Sanduni  
Kaushalya**

Data Cleaning  
& Analysis



**Charlie  
Macnaughton**

Visualisation &  
Communication

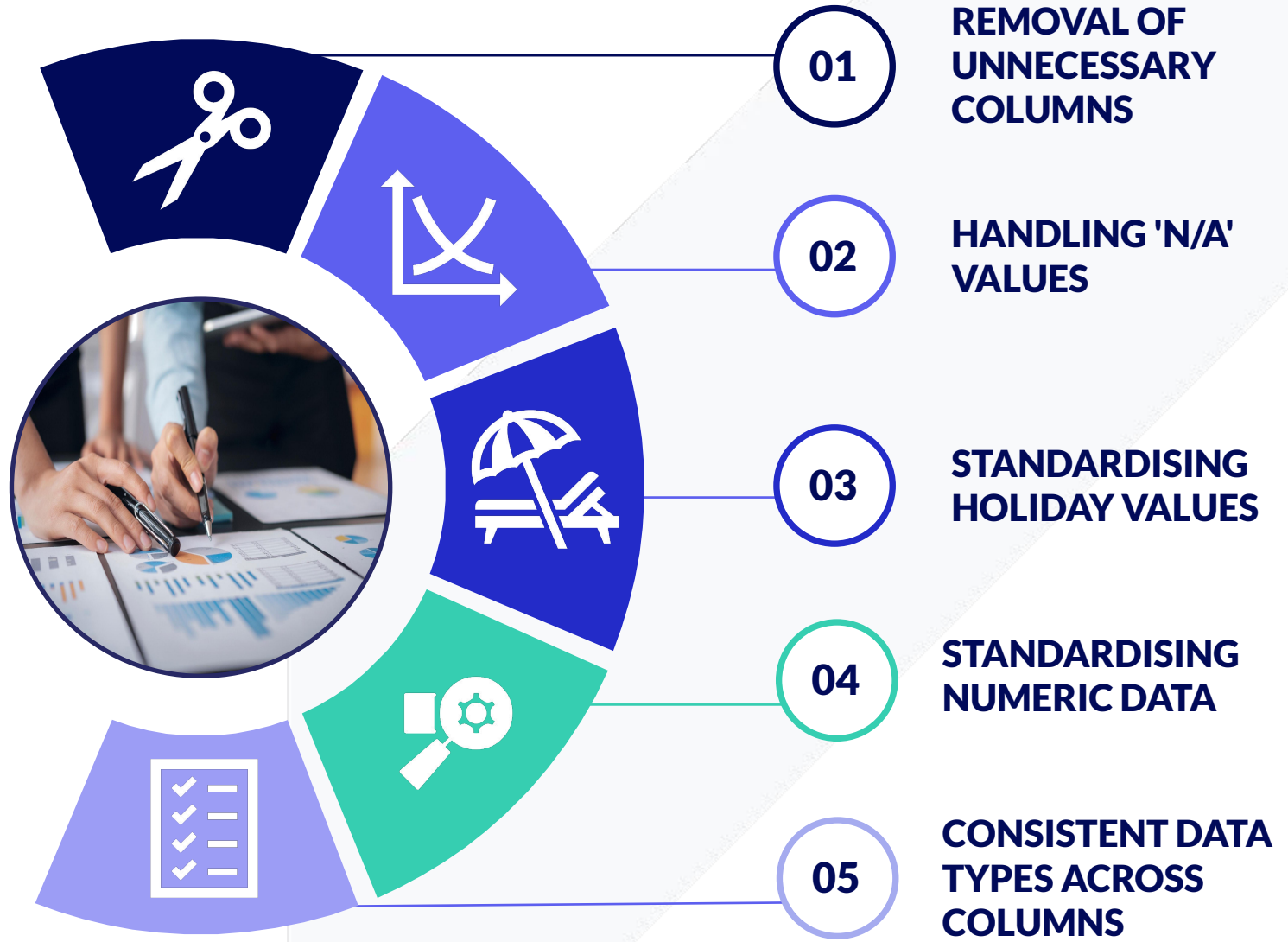


# DATA SELECTION & CLEANING

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# DATA CLEANING



# QUESTIONS TO CONSIDER

**DO CERTAIN TYPES OF STORES  
PERFORM BETTER THAN  
OTHERS?**

**ARE ANY MONTHS  
SEASONS CONSISTENTLY  
OUTPERFORMING OR  
UNDERPERFORMING  
COMPARED TO THE  
AVERAGE MONTH/  
SEASON?**

**DOES THE SIZE OF THE STORE  
IMPACT SALES?**



**IS THERE A CORRELATION BETWEEN  
TEMPERATURE AND SALES?**

**WHICH HOLIDAYS PERFORM  
THE BEST FOR A GIVEN WEEK  
AND WHY?**

**IS THERE ADDITIONAL  
INFORMATION/DATA THAT IS NEEDED  
TO MAKE FURTHER DECISIONS?**



# ANALYSIS & INSIGHTS

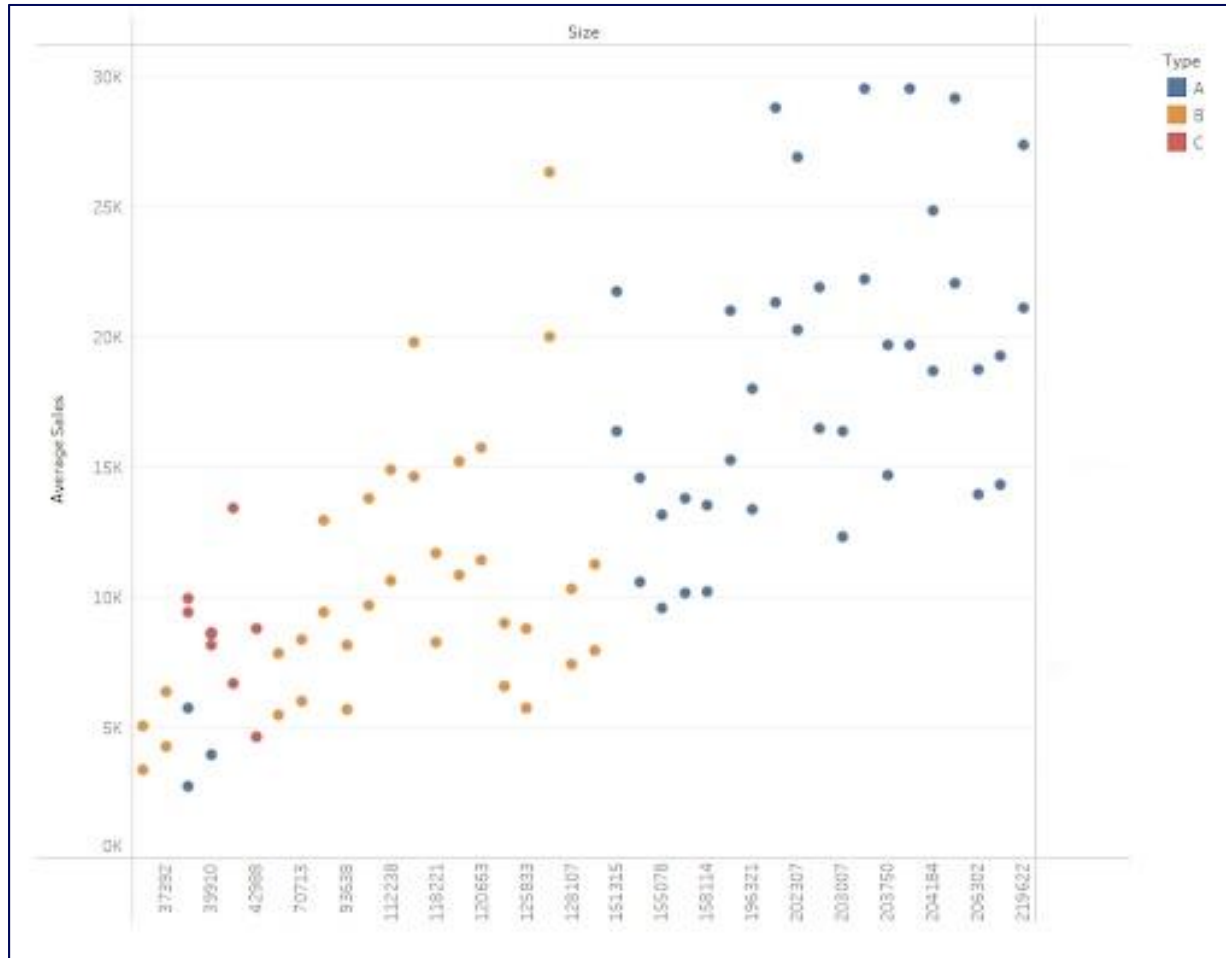
## SALES ASSESSMENT

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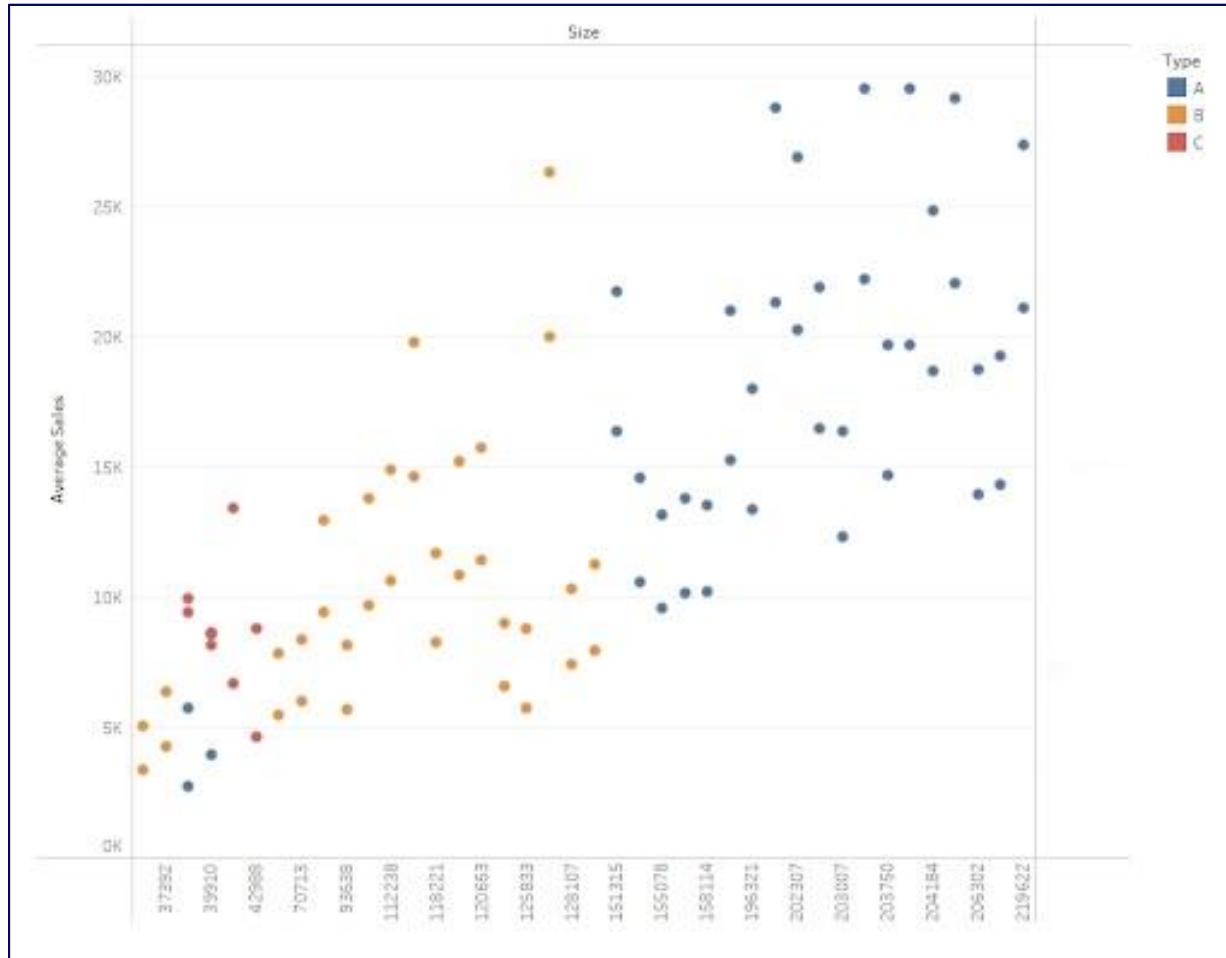
# STORE TYPE & SALES



- Data included three types of store A,B,C.
- Y Axis = Average Sales
- X-Axis = Store Size (per sq ft)
- **Type A (blue)** experienced the most sales, with an average of 206m, and is usually the largest at 175K sq ft per store.
- **Type B (orange)** has a size of 101K sq ft with average sales of 117m per store.
- **C (red)** tended to be the smallest at 41K sq ft with average sales of 101m per store.



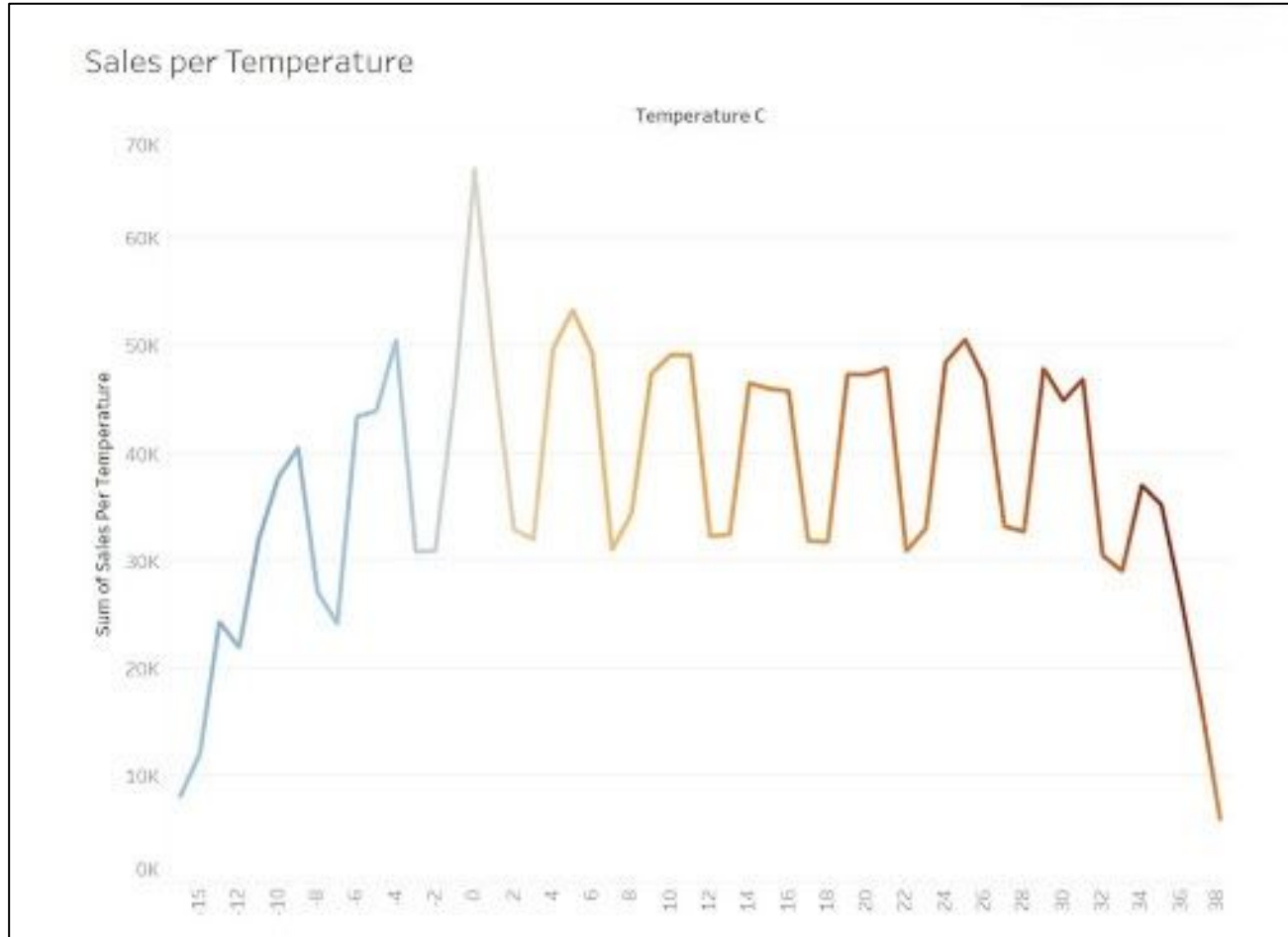
# STORE TYPE & SALES [2]



Main hypothesis was that:  
**Greater Size = Greater Sales**

- We can see that some Type B stores (light blue) see higher sales despite smaller sizes compared to Type A.
- Type C also maintained average sales per store similar to Type B despite significant difference in store size. Further investigation required.

# TEMPERATURE & SALES

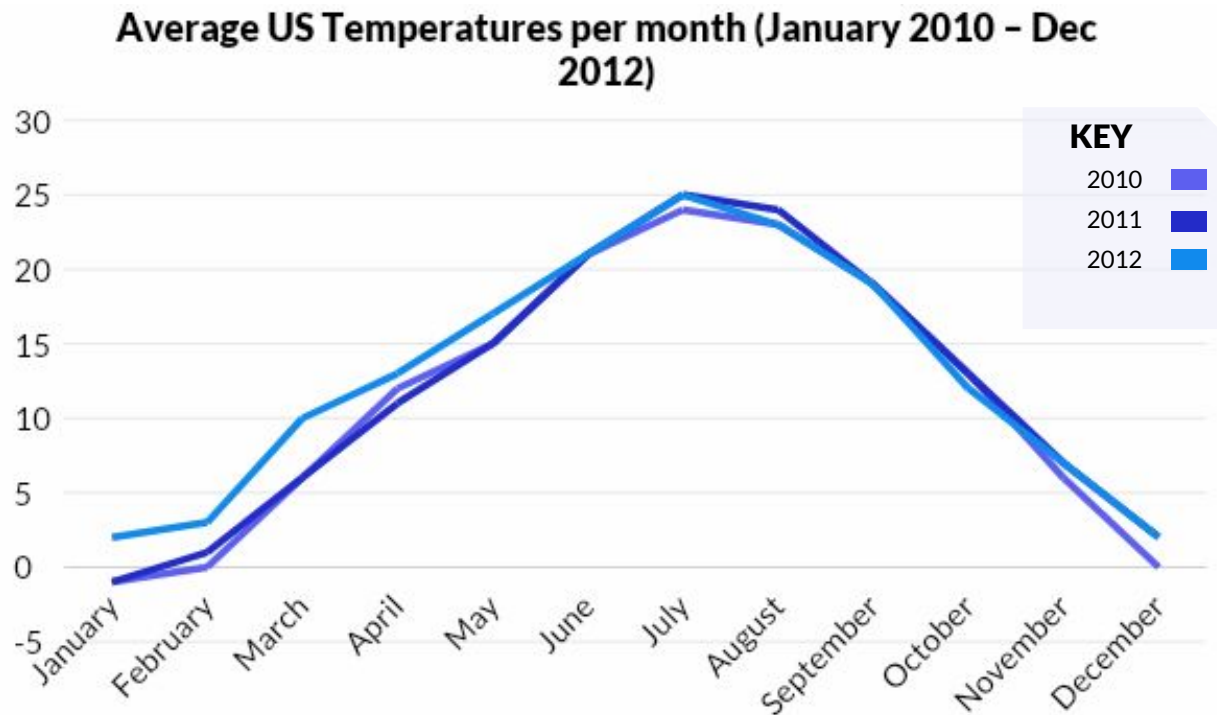


- Highest sales occur at 0 degrees Celsius (32 degrees Fahrenheit).

One could argue that customers **spend more at this temperature**. However, we feel that this correlation does not necessarily suggest causation.

- We decided that further analysis would be required to better understand purchasing patterns and consumer behaviour.
- Fundamentally, we want to understand whether temperature is a factor in determining higher overall sales.

# TEMPERATURES & SALES [2]

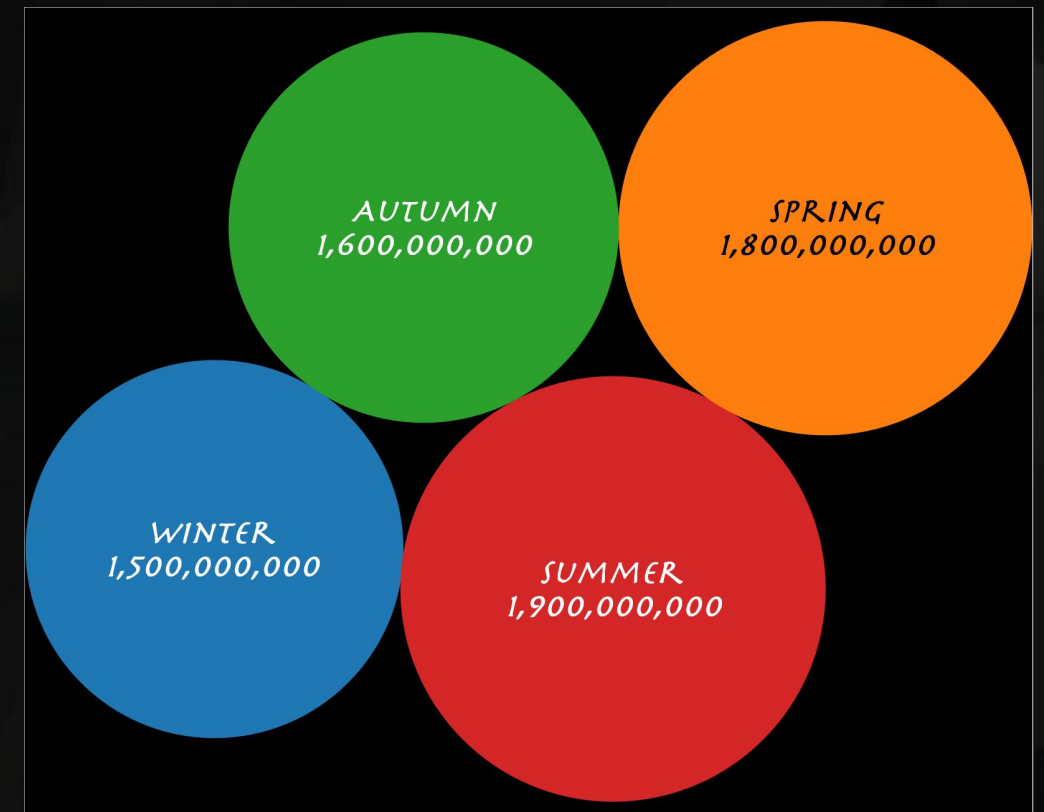
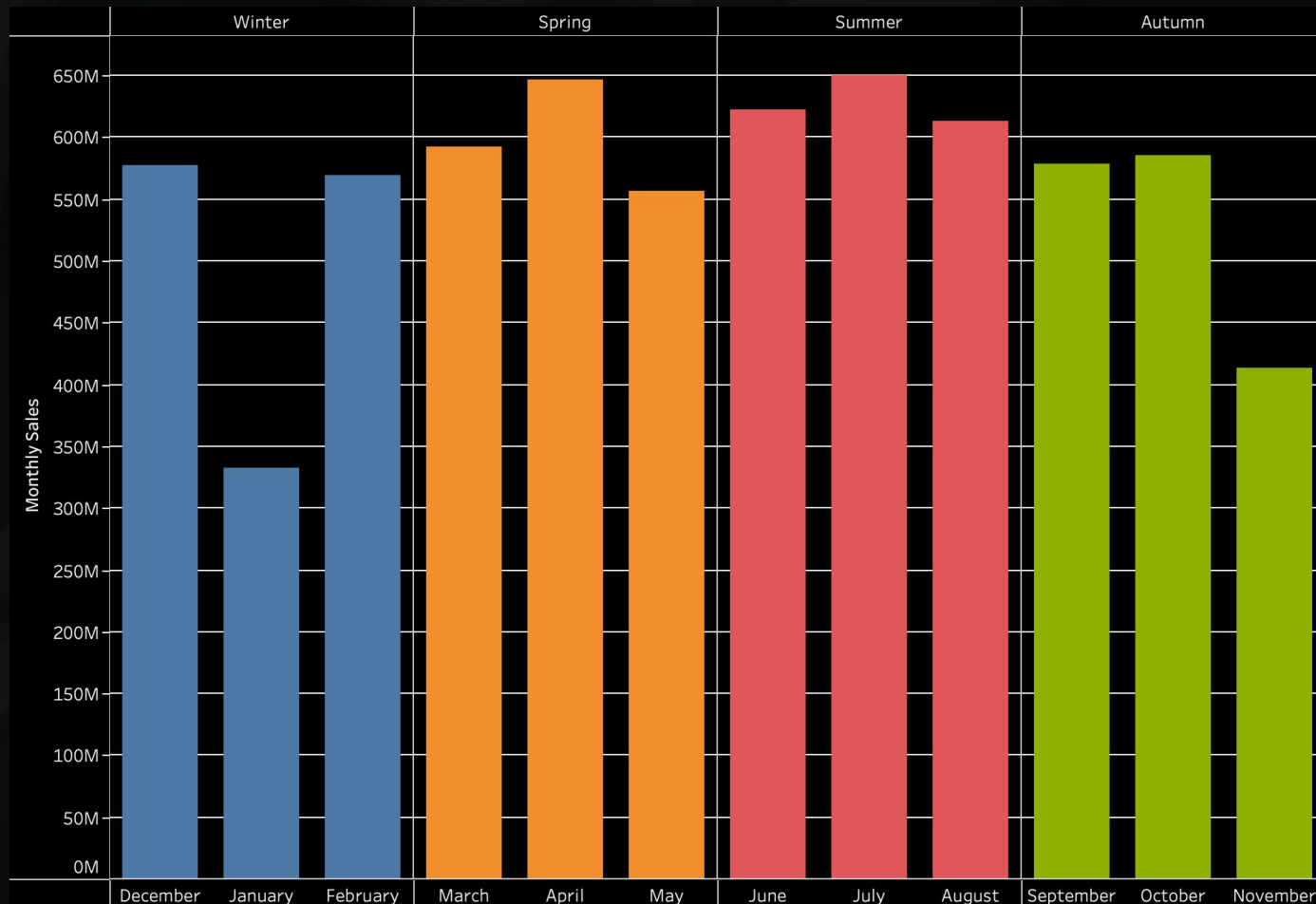


**Source:** US Average Temperatures by Month (2010-2012),  
National Centers for Environmental Information

Average temperatures across the US are around the 0 degrees Celsius mark (32 degrees Fahrenheit).

	2010	2011	2012
January	-1	-1	2
February	0	1	3
March	6	6	10
April	12	11	13
May	15	15	17
June	21	21	21
July	24	25	25
August		23	24
September		19	19
October		13	13
November		6	7
December	0	2	2

# MONTHLY & SEASONAL SALES INSIGHTS





# CONCLUSIONS RECOMMENDATIONS

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## KEY RESULTS

Type A | 64%

Type A stores contribute the most to sales with averages of 20K.

5% | 0.3bn

January average sales

6% | 0.4bn

November average sales

19% | 1.3bn

Sales contribution of underperforming months

29% | 1.9bn

Sales contribution of overperforming months

0.6bn

Average Monthly Sales

# NEXT STEPS & RECOMMENDATIONS

Based on our assessment of the provided data, we would suggest the following to Walmart:

## RECOMMENDATIONS

- **Early-Year Promotions:** Focus on strong promotional activities from January to April to capitalize on the natural sales increase.
- **Holiday Focus:** Enhance holiday marketing campaigns in December to boost sales further, leveraging the slight recovery seen after the November dip.
- **Promotional Strategies:** Targeted promotions during the January-April growth period and the mid-year stable period can maximize sales, while strategic discounts in November could help mitigate the sales dip.

## BUSINESS IMPLICATIONS

- **Inventory Planning:** Walmart should focus on ramping up inventory before peak sales periods like April and maintain steady supply during the mid-year months to prevent stockouts.
- **Sustain Mid-Year Sales:** Maintain consistent inventory and targeted marketing during May to August to sustain the steady demand.
- **Address November Decline:** Investigate the reasons behind the November sales drop and consider strategies like early holiday promotions or special events to boost sales.





# QUESTIONS?

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