

SUPERSTORE SALES ANALYSIS

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PROBLEM STATEMENT



PROBLEM STATEMENT

The retail superstore aims to enhance operations and customer satisfaction through data-driven decision-making. They seek to **optimize logistics, identify product trends, and personalize marketing strategies** by analyzing sales transactions, order processing, and shipping data. Additionally, **evaluating employee sales performances and customer behaviors** will enable targeted improvements to drive **growth and profitability** in the competitive retail landscape

UNDERSTANDING THE PROBLEM



CUSTOMER BEHAVIOUR

- Identify customer behaviours
- Identify Seasonal Trends in Sales
- Identify customer area



SALES TRENDS

- Identify most selling items
- Analyze revenue contribution
- Identify Top-performing sub-category



INSIGHTS

- Improve stocking/restocking mechanism
- How to engage more customers
- How to increase

ABOUT DATASET & ERD DIAGRAM



ABOUT DATASET

The dataset contains detailed information about Super Store's operations, covering orders, customers, employees, and products

Key Tables and Attributes:



ORDERS

ID, Order_ID, Ship_Mode,
Segment, City, State,
Postal_Code, Region,
Product_ID, Category,
Sub_Category, Product_Name,
Sales, Quantity, Discount, Profit,
Returned, total_cost,
price_per_unit, Customer_ID,
Employee_ID, Order_Date,
Ship_Date



CUSTOMERS

Customer_ID,
Customer_Name,
Segment



EMPLOYEES

Employee_ID,
Employee_Name,
Gender,
Annual_Income

DATA DICTIONARY

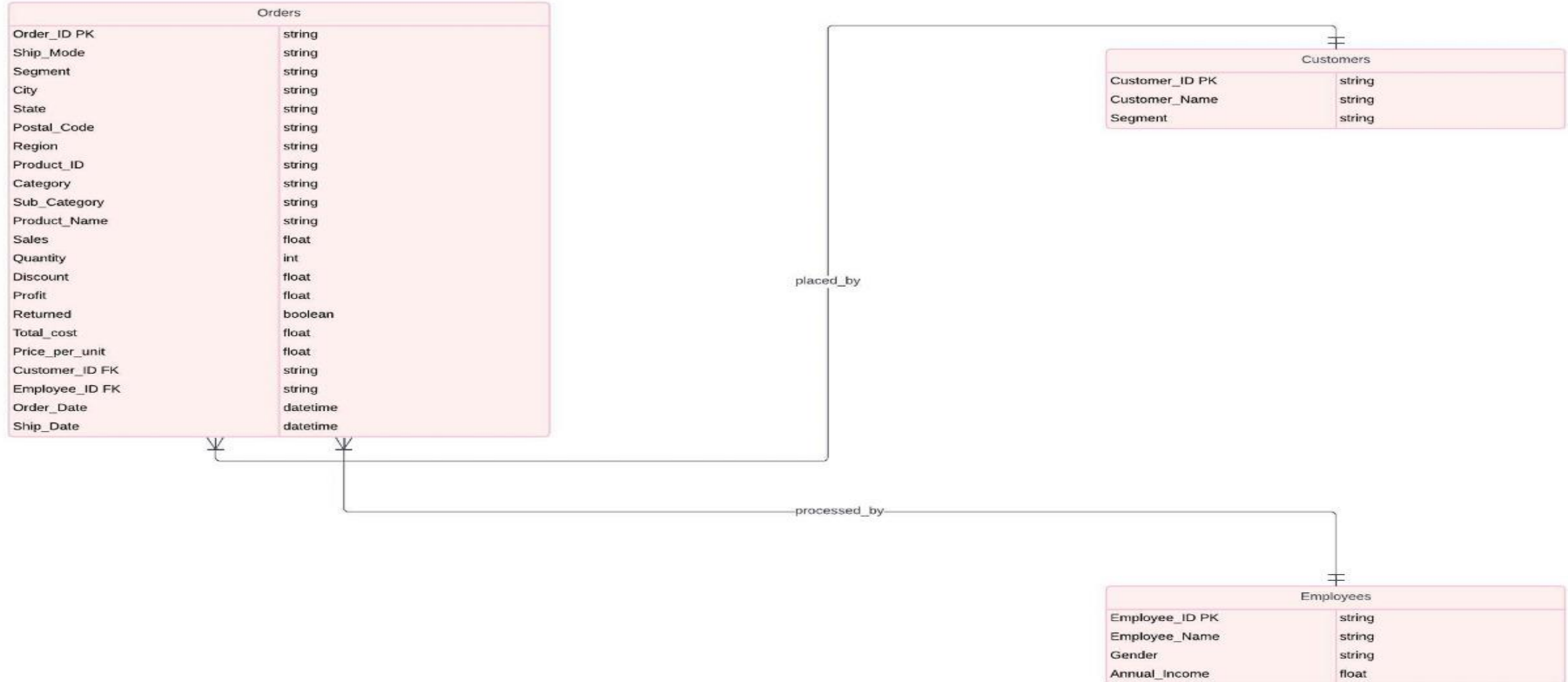
Table	Field Name	Type	Mode	Description
Orders	ID	int	Required	Unique identifier for each order
	Order_ID	varchar(20)	Nullable	Identifier for each order
	Ship_Mode	text	Nullable	Shipping mode of the order
	Segment	text	Nullable	Consumer belongs to which segment of society
	City	text	Nullable	City where the consumer lives
	State	text	Nullable	State where the consumer lives
	Postal_Code	int	Nullable	Postal code where the consumer lives
	Region	text	Nullable	Region where the consumer lives
	Product_ID	text	Nullable	Identifier for each product
	Category	text	Nullable	Product category
	Sub_Category	text	Nullable	Product sub category
	Product_Name	text	Nullable	Product name
	Sales	double	Nullable	Amount of sale generated
	Quantity	int	Nullable	Quantity sold
	Discount	double	Nullable	Discount availed
	Profit	double	Nullable	Profit generated
	Returned	text	Nullable	Orders returned
	total_cost	double	Nullable	Total value of order
	price_per_unit	double	Nullable	Cost per unit
	Customer_ID	varchar(20)	Nullable	Identifier for each customer
	Employee_ID	varchar(20)	Nullable	Identifier for each employee
	Order_Date	date	Nullable	Date on which order was placed
	Ship_Date	date	Nullable	Date on which order was shipped

DATA DICTIONARY

Table	Field Name	Type	Mode	Description
Customers	Customer_ID	varchar(20)	Required	Unique identifier for each customer
	Customer_Name	text	Nullable	Customer name
	Segment	text	Nullable	Segment to which the customer belongs

Table	Field Name	Type	Mode	Description
Employees	Employee_ID	varchar(20)	Required	Unique identifier for each employee
	Employee_Name	text	Nullable	Employee name
	Gender	text	Nullable	Gender
	Annual_Income	int	Nullable	Annual income of the employee

ERD DIAGRAM



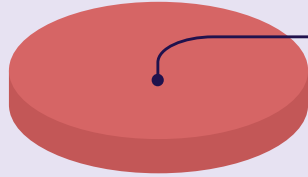
ANALYTICAL QUESTIONS & DATA PROCESS



ANALYTICAL QUESTIONS

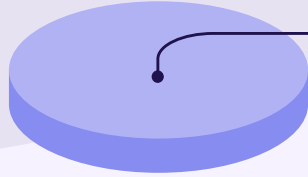
1. What **percentage of orders** were shipped on the **same day**, and what is the **average shipping time** across different modes and product categories?
2. **Top 5 items** with the highest average sales per day?
3. Name of customers who ordered **highest and lowest orders** from each city?
4. What is the region wise **top-performing sub-category** in terms of sales volume & revenue?
5. Which segment's order is more likely to be **shipped via first class**?
6. Which product, city, and region **contribute the most and least** to total revenue?
7. Which **segment places the most and largest orders** from each state?
8. How do **monthly and yearly sales** vary, and what are the peak sales periods for the superstore?
9. Which **employees** have the highest number of sales, & what are their **sales trends** over time?
10. What are the **seasonal trends** in product sales & how specific sub-categories perform over

DATA PROCESS



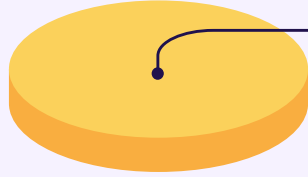
1

Data Extraction



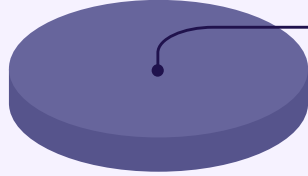
2

Data Cleaning



3

Data Transformation



4

Data Validation

DATA PROCESS

1

Data Extraction: Extract Data from Kaggle in three Excel files

2

Duplicates Removal: Identified and removed duplicate records

Missing Values Handling: Managed missing data through imputation and deletion

Data Consistency: Standardized formats for dates, names, and categories

3

Integration: Merged data from different tables to create a unified dataset

4

Accuracy Checks: Verified data accuracy through sample checks & comparisons

Integrity Constraints: Ensured referential integrity across different tables

POWER BI DASHBOARD



Sales Dashboard

Segments

Consumer

Corporate

Home Office

Shipping Mode

First Class

Second Class

Standard Class

Total Sales



\$180.50K

Total Cost



\$158.18K

Total Profits



\$22.32K

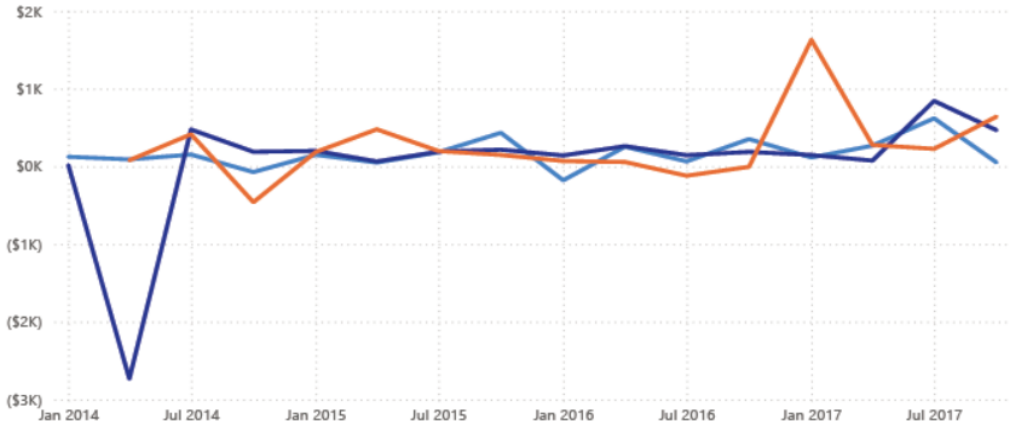
Total Products Sold



3K

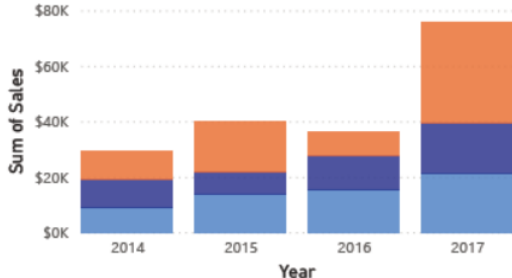
Profit Rolling Average

● Furniture ● Office Supplies ● Technology



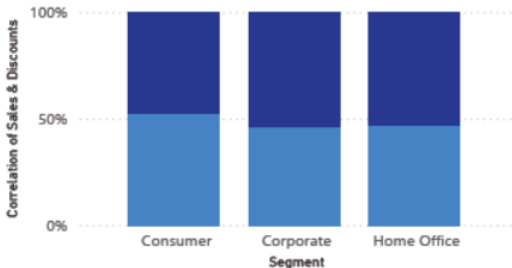
Category Wise Sales

● Furniture ● Office Supplies ● Technology



Correlation Between Sales & Discounts

● % Sales ● % Discount



Sales

Customers

Employees

Customers Dashboard

Segments

Consumer

Corporate

Home Office

Shipping Mode

First Class

Second Class

Standard Class

Total Regions



4

Customer Segments



3

Total Orders



800

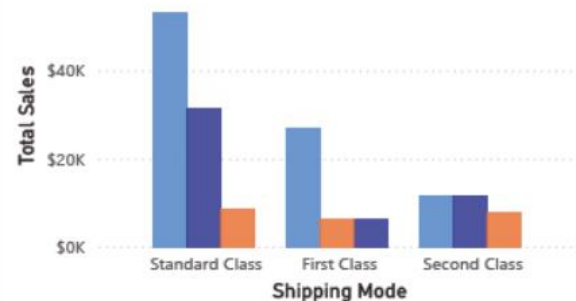
Average Order Quantity



3.82

Segment Wise Preference of Shipping Mode

Segment ● Consumer ● Corporate ● Home Office

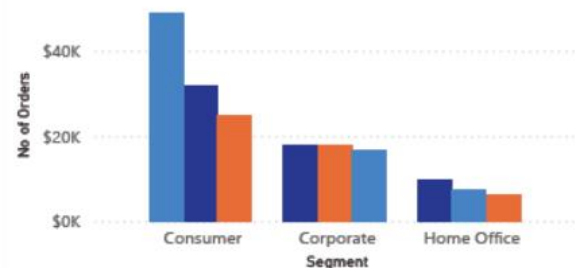


Customer's Order Trend Analysis



Sales By Segment & Category

Category ● Furniture ● Office Supplies ● Technology



Sales

Customers

Employees

Employees Dashboard

Segments

Consumer

Corporate

Home Office

Shipping Mode

First Class

Second Class

Standard Class

Total Sales



\$180.50K

Sales Per Employee



\$225.6304

Profit Per Employee



\$27.9042

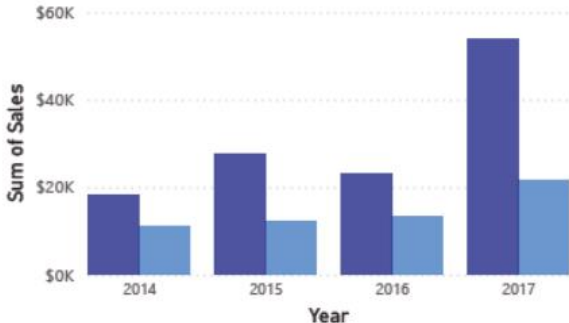
Average Annual Income



53.69K

Gender Wise Employee Sales Distribution by Year

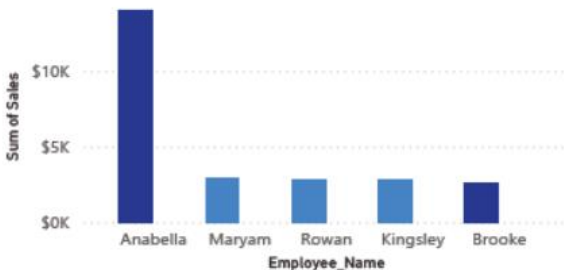
Gender ● Female ● Male



Region	State	Employee Name	Gender	Year	Month	Quantity	Total Sales	Total Profit	Shipping Mode
West	Washington	Anabella	Male	2017	March	4	\$13,999.96	\$4,199.99	First Class
East	New York	Maryam	Male	2017	September	11	\$2,888.13	\$641.81	Standard Class
East	New York	Rowan	Female	2014	September	4	\$2,799.96	\$839.99	Same Day
East	New York	Kingsley	Male	2015	May	7	\$2,799.94	\$349.99	Standard Class
West	California	Brooke	Male	2015	December	6	\$2,548.56	\$318.57	Standard Class
West	California	Heaven	Male	2017	August	9	\$2,518.29	\$755.49	Standard Class
Central	Texas	Shaindy	Male	2015	October	5	\$2,453.43	\$0.00	Same Day
East	New York	Mariama	Female	2017	September	5	\$2,254.41	\$500.98	Standard Class
South	Tennessee	Selma	Male	2017	June	8	\$2,239.94	\$279.99	Standard Class
Central	Texas	Vincent	Male	2014	July	8	\$2,177.58	(\$5,443.95)	Standard Class
East	Pennsylvania	Sadie	Female	2017	September	7	\$1,931.96	(\$321.99)	Standard Class
West	California	Aidan	Female	2017	November	3	\$1,919.98	\$240.00	Same Day
West	Arizona	Joshua	Female	2015	August	5	\$1,879.96	\$235.00	Standard Class
West	Washington	Amy	Male	2016	December	5	\$1,747.25	\$524.18	Standard Class
West	California	Baptiste	Male	2017	October	14	\$1,702.12	\$510.64	Standard Class
Total						3053	\$180,504.31	\$22,323.32	

Top Performing Employees

Region ● East ● West



Sales

Customers

Employees

ANALYSIS RESULTS



Product Analysis

Top Selling Products (2014-2017)

Arm Lamp: \$632.5

Typewriter: \$391.3

Lumber Crayons: \$310.6

Most Demanded Sub-Categories (Region Wise)

West: Copiers

South and East: Phones

Central: Binders

Revenue Contributions

**Highest: Arm Lamp in
Seattle (West) - \$14184.02**

**Lowest: Wooden Table in
Troy (East) - \$1.68**

Customer Analysis

Top Buying Segments by State

Consumer

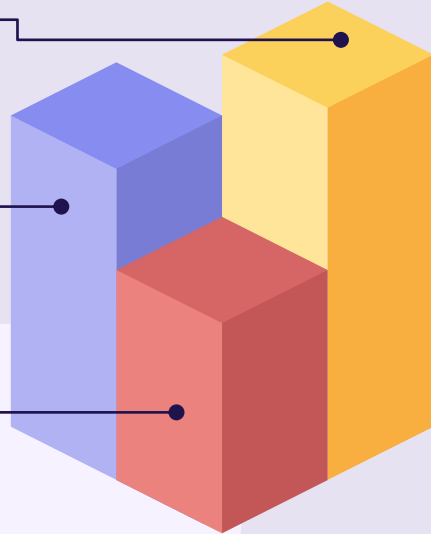
Dominates in 19 states

Corporate

Leads in 13 states

Home Office

Tops in 5 states

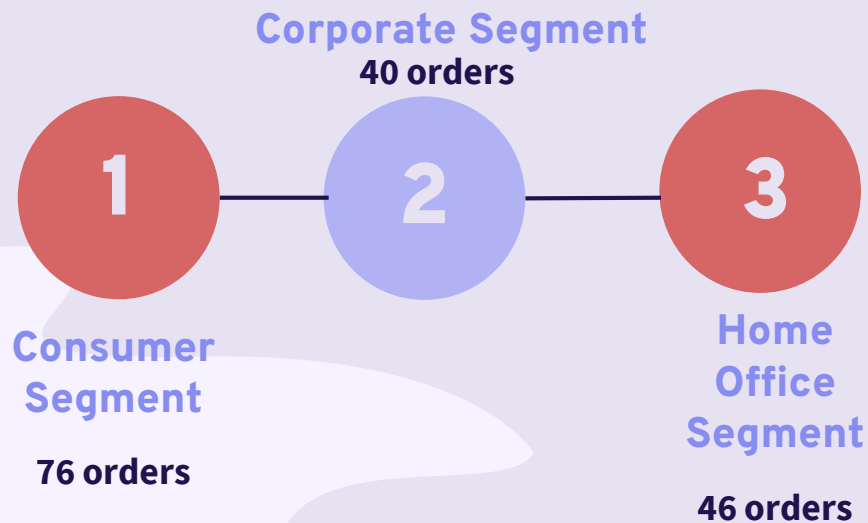


Sales Variability

Highest and lowest sales recorded in every city

Shipping Data Analysis

Preferred Shipping Methods (2014-2017) is First Class



Same Day Shipping is 6.42% of total orders

Shipping Times

First Class

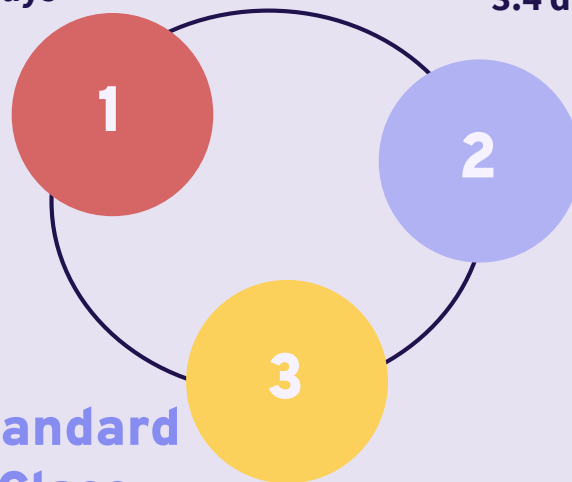
2.3 days

Second Class

3.4 days

Standard Class

5.1 days



SALES ANALYSIS



Sales Figures (2014-2017)

Low: 1 order in July 2015

High: 54 orders in September 2017



Seasonal Demand

Binders: Up to 65 orders

Papers: Up to 29 orders



Peak Sales Period

August to December



Profit Impact

Significant decrease up to 80% due to discounts

OUR RECOMMENDATIONS



RECOMMENDATIONS FOR **STAKEHOLDERS**

**Offer Promotions
on Top Selling
products
And Popular
Subcategories**

**Offer Membership
or Discounts to
High-
Buying Customers**

RECOMMENDATIONS FOR **STAKEHOLDERS**

**Incentivize First
Class Shipping By
Providing
Discount Vouches**

**Design a well-
Crafted Marketing
Campaign that
Boost Sales**

THANK YOU

