



# **GLOBALCERT**

## **SOUTH AMERICAN ECOMMERCE RETAIL STORE ANALYSIS**



# PROBLEM STATEMENT



- E-COMMERCE RETAIL STORE BELIEVES THEY HAVE SOME CONCERNS REGARDING THEIR SALES AND HAVE PROVIDED US THEIR DATASETS TO EXPLORE.
- THEY REQUIRE SOLUTIONS TO THE PROBLEMS BASED ON DATA INSIGHTS AND GIVE RECOMMENDATIONS TO THE CLIENT.



# OBJECTIVES

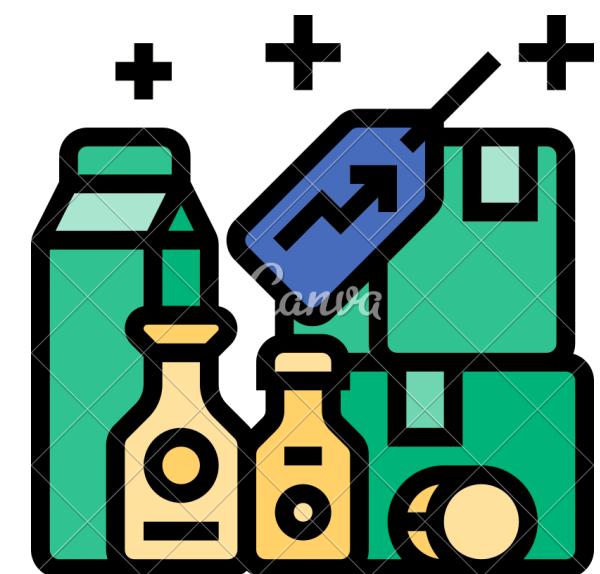
## Goals 1

PERFORM EDA USING SQL TO  
GAIN DATA INSIGHTS  
REGARDING CUSTOMERS,  
ORDERS, PRODUCTS,  
SELLERS.



## Goals 2

PROVIDE RECOMMENDATIONS  
BASED ON THE RESULTS  
OBTAINED FROM SQL QUERIES



# EXPLORATORY DATA ANALYSIS

## 1A - Who are the 'best' customers?

- 'Best' Customers are those who have multiple purchase orders.

### OBSERVATION:

- The top customer in the list is the best customer with total orders of 17.



S NO	CUSTOMER UNIQUE ID	TOTAL ORDERS DONE
1	8d50f5eadf50201cccdcedfb9e2ac8455	17
2	3e43e6105506432c953e165fb2acf44c	9
3	ca77025e7201e3b30c44b472ff346268	7
4	6469f99c1f9dfaef7733b25662e7f1782	7
5	1b6c7548a2a1f9037c1fd3ddfed95f33	7
6	12f5d6e1cbf93dafd9dcc19095df0b3d	6
7	47c1a3033b8b77b3ab6e109eb4d5fdf3	6
8	f0e310a6839dce9de1638e0fe5ab282a	6
9	de34b16117594161a6a89c50b289d35a	6
10	dc813062e0fc23409cd255f7f53c7074	6



# EXPLORATORY DATA ANALYSIS

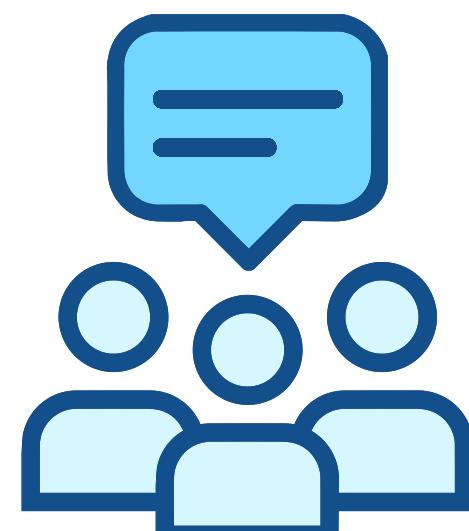
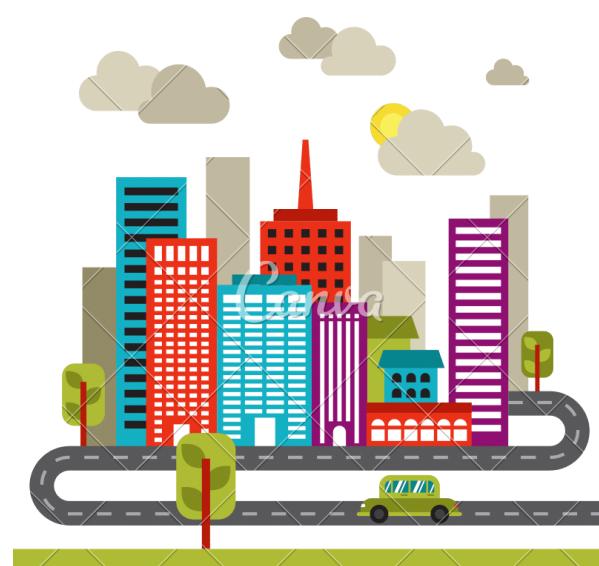
## 1B - ANALYSIS RELATED TO LOCATION

### NUMBER OF CUSTOMERS IN TOP 10 CITIES

- Find any insights based on number of customers arrived and purchased in top 10 cities.

#### OBSERVATION:

- Top Sao Paulo has the highest number of customers with total of 15030 customers, followed by rio de janeiro and belo horizonte.



S NO	CITY	NUMBER OF CUSTOMERS
1	SAO PAULO	15030
2	São PAULO	14851
3	RIO DE JANEIRO	6661
4	BELO HORIZONTE	2688
5	BRASILIA	1891
6	BRASILIA	1712
7	CURITIBA	1468
8	CAMPINAS	1398
9	PORTO ALEGRE	1326
10	SALVADOR	1205



# EXPLORATORY DATA ANALYSIS

## 2 - OVERALL TOP PRODUCTS AND SELLERS

### A - TOP PRODUCTS

- Comparing products based on customer purchases and determine the top products.

#### OBSERVATION:

- Top 3 products are moveis\_decoracao, cama\_mesa\_banho, ferramentas\_jardim



S NO	PRODUCT CATEGORY NAME	TOTAL PRODUCTS SOLD
1	moveis_decoracao	527
2	cama_mesa_banho	488
3	ferramentas_jardim	484
4	informatica_acessorios	343
5	beleza_saude	281
6	relogios_presentes	274



# EXPLORATORY DATA ANALYSIS

## 2 - OVERALL TOP PRODUCTS AND SELLERS

### B - TOP SELLERS

- Comparing sellers based on maximum number of products sold by them.

#### OBSERVATION:

- Top 2 sellers have sold more than 1900 items to customers.



S NO	SELLER UNIQUE ID	TOTAL ITEMS SOLD
1	6560211a19b47992c3666cc44a7e94c0	2033
2	4a3ca9315b744ce9f8e9374361493884	1987
3	1f50f920176fa81dab994f9023523100	1931
4	cc419e0650a3c5ba77189a1882b7556a	1775
5	da8622b14eb17ae2831f4ac5b9dab84a	1551
6	955fee9216a65b617aa5c0531780ce60	1499
7	1025f0e2d44d7041d6cf58b6550e0bfa	1428
8	7c67e1448b00f6e969d365cea6b010ab	1364
9	ea8482cd71df3c1969d7b9473ff13abc	1203
10	7a67c85e85bb2ce8582c35f2203ad736	1171



# EXPLORATORY DATA ANALYSIS

## 2 - OVERALL TOP PRODUCTS AND SELLERS

### C - TOP PRODUCTS BASED ON MOST EXPENSIVE PRODUCTS SOLD

- Comparing products based on selling price of product and number of customers purchase to determine most expensive product.

#### OBSERVATION:

- The most costly selling product category is **beleza\_saude** corresponding to the shown product and number of customers.



S NO	PRODUCT CATEGORY NAME	SELLING PRICE	NUMBER OF CUSTOMERS
1	beleza_saude	63885	195
2	beleza_saude	54730	156
3	pcs	48899	35
4	informatica_acessorios	47214	343
5	cama_mesa_banho	42518	482
6	informatica_acessorios	41082	274
7	cool_stuff	37733	63
8	moveis_decoracao	37608	527
9	bebés	31774	31
10	cama_mesa_banho	29997	154



# EXPLORATORY DATA ANALYSIS

## 2 - OVERALL TOP PRODUCTS AND SELLERS

### D - OVERALL TOP SALES BASED ON SALES DONE

- Comparing sellers based on sales done by each seller to determine top seller.

#### OBSERVATION:

- The top seller has done highest sales (229472.6).
- Although total number of products sold by him is not the highest.



S NO	SELLER UNIQUE ID	TOTAL SALES PRICE
1	4869f7a5dfa277a7dca6462dcf3b52b2	229472.6
2	4a3ca9315b744ce9f8e9374361493884	222776.0
3	1f50f920176fa81dab994f9023523100	200472.9
4	cc419e0650a3c5ba77189a1882b7556a	194042.0
5	da8622b14eb17ae2831f4ac5b9dab84a	187923.9
6	955fee9216a65b617aa5c0531780ce60	176431.9
7	1025f0e2d44d7041d6cf58b6550e0bfa	160236.6
8	7c67e1448b00f6e969d365cea6b010ab	141745.5
9	ea8482cd71df3c1969d7b9473ff13abc	138968.5
10	7a67c85e85bb2ce8582c35f2203ad736	135171.7



# EXPLORATORY DATA ANALYSIS

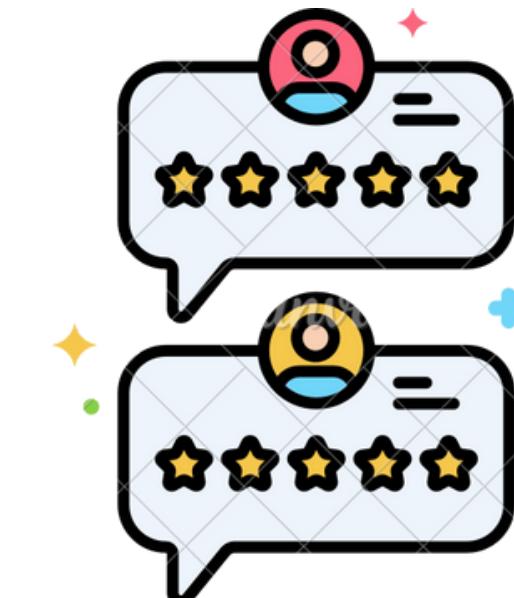
## 3 - PURCHASE PATTERN FOR CUSTOMERS - REVIEWS

- Find any pattern based on ratings given by customers.

### OBSERVATION:

- Mostly customers had given 5 rating on their purchase items.
- The items with review score 2 have the lowest contribution in total sales(price)

S NO	REVIEW SCORE	NUMBER OF CUSTOMERS	SALES PERCENTAGE (%)
1	★★★★★	57006	56.9
2	★★★★☆	19065	18.7
3	★★★★☆	8107	7.7
4	★★☆☆☆	3086	3.3
5	★☆☆☆☆	10854	13.4



# EXPLORATORY DATA ANALYSIS

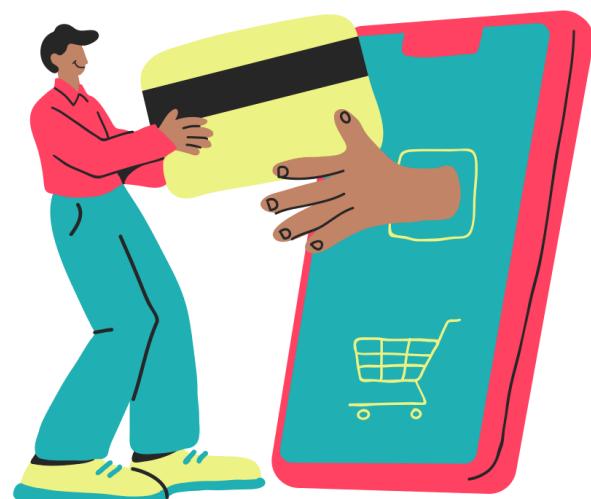
## 4 - 'BEST' CUSTOMER BASED ON EXPENDITURE

- 'Best' Customers are those who have spent the highest amount .

### OBSERVATION:

- The customer who had frequently brought many items and spend 13440 is the most valuable customer .

S NO	CUSTOMER UNIQUE ID	TOTAL AMOUNT SPENT
1	1617b1357756262bfa56ab541c47bc16	13440.0
2	4a3ca9315b744ce9f8e9374361493884	7160.0
3	1f50f920176fa81dab994f9023523100	6735.0
4	cc419e0650a3c5ba77189a1882b7556a	6729.0
5	da8622b14eb17ae2831f4ac5b9dab84a	6499.0
6	955fee9216a65b617aa5c0531780ce60	5934.6
7	1025f0e2d44d7041d6cf58b6550e0bfa	4799.0
8	7c67e1448b00f6e969d365cea6b010ab	4690.0
9	ea8482cd71df3c1969d7b9473ff13abc	138968.5
10	7a67c85e85bb2ce8582c35f2203ad736	135171.7



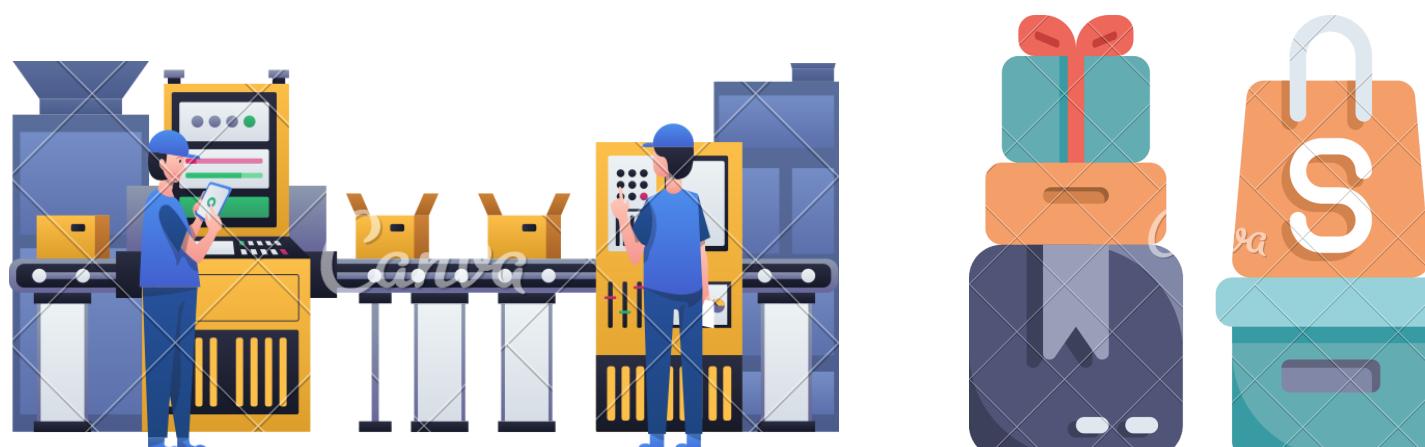
# EXPLORATORY DATA ANALYSIS

## 5 - TOP PRODUCTS SOLD EACH YEAR

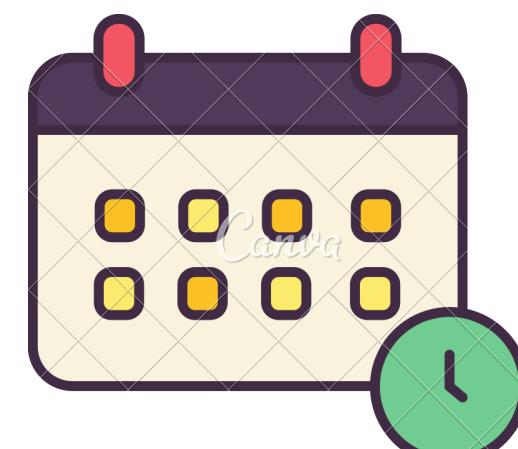
- Comparing products sold based on each year.

### OBSERVATION:

- Moveis\_decoracao, beleza\_saude, relogios\_presentes, esporte\_lazer, automotivo are top products in 3 years from 2016, 2017, and 2018.



No	2016	2017	2018
1	moveis_decoracao	cama_mesa_banho	beleza_saude
2	perfumaria	relogios_presentes	relogios_presentes
3	brinquedos	beleza_saude	cama_mesa_banho
4	beleza_saude	esporte_lazer	esporte_lazer
5	consoles_games	informatica_acessorios	informatica_acessorios
6	relogios_presentes	cool_stuff	utilidades_domesticas
7	esporte_lazer	moveis_decoracao	moveis_decoracao
8	climatizacao	brinquedos	automotivo
9	automotivo	ferramentas_jardim	bebés
10	bebés	automotivo	cool_stuff

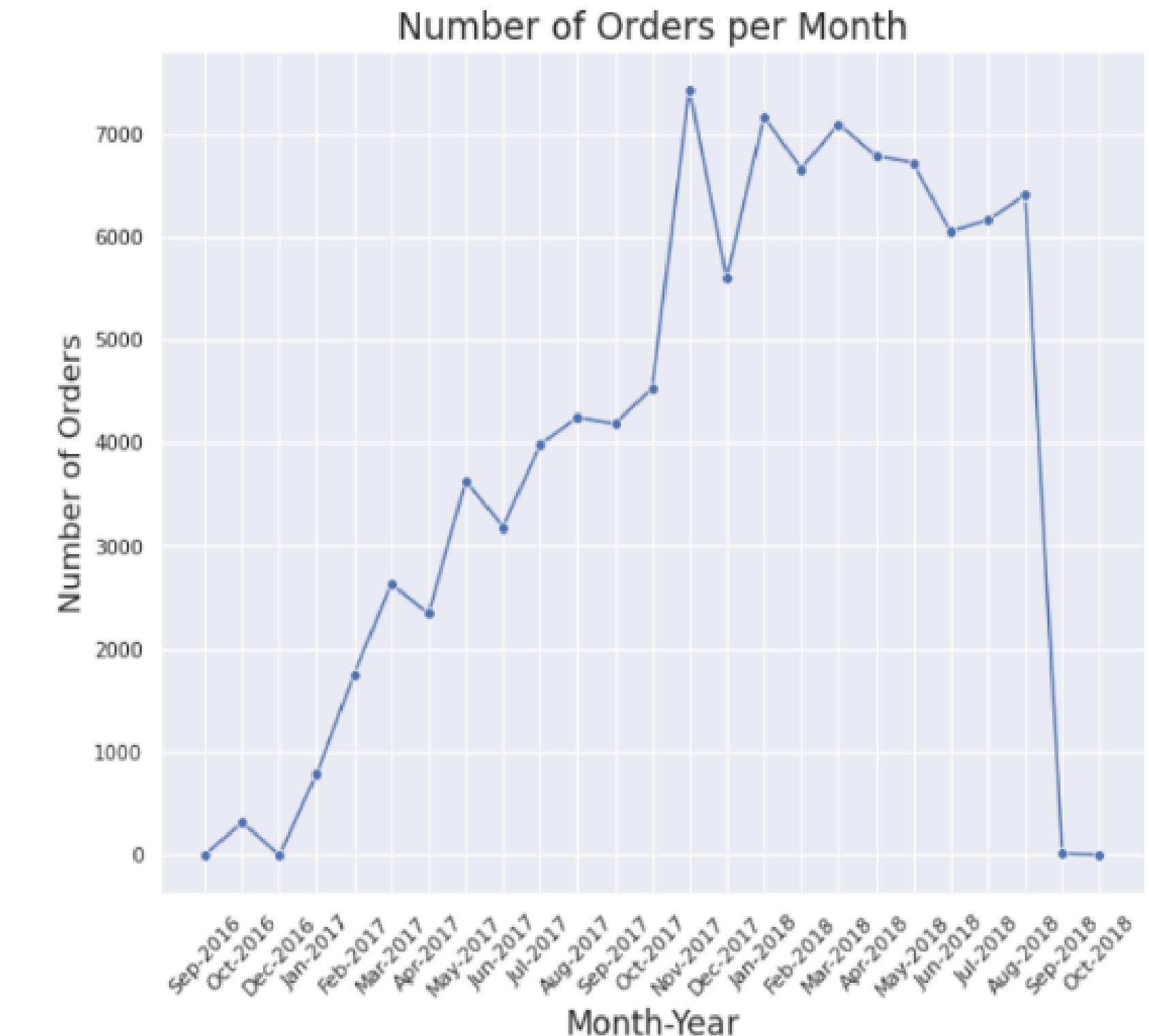


# EXPLORATORY DATA ANALYSIS

## 6 - MONTHLY CUSTOMER PURCHASE PATTERN

### OBSERVATION:

- Highest peak of number of order was in Nov 2017 = 7544 order. But in the next month, the number of order decrease and stagnant along the way.

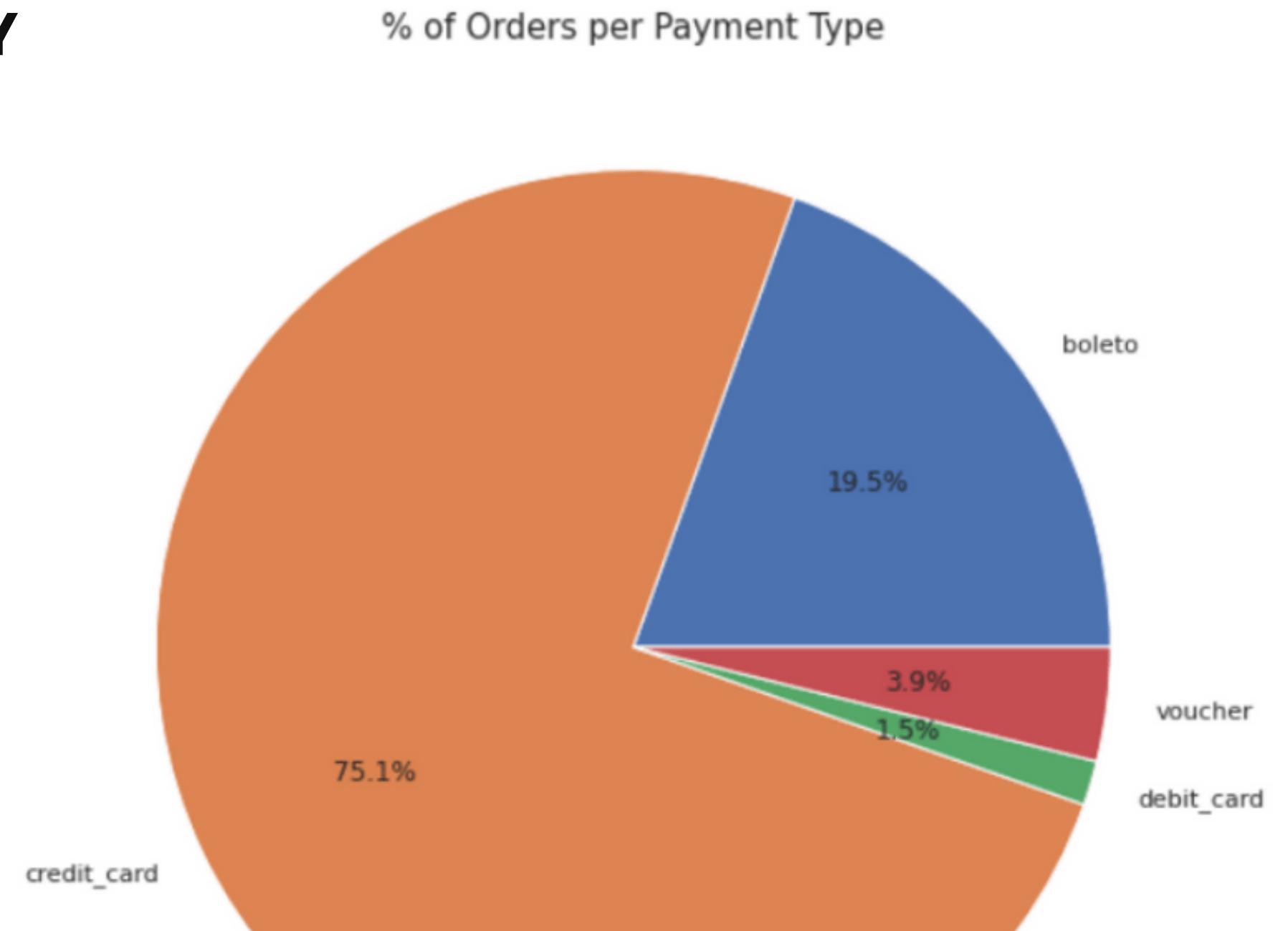
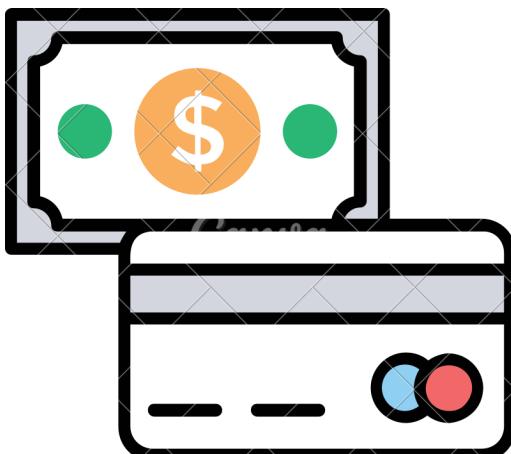


# EXPLORATORY DATA ANALYSIS

## 7 - MOST POPULAR PAYMENT OPTION BY CUSTOMER

### OBSERVATION:

- 75% of transaction paid with Credit Card while Boleto in second place with almost 19.5%.

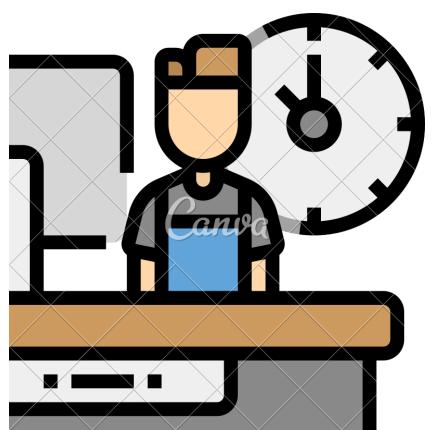


# EXPLORATORY DATA ANALYSIS

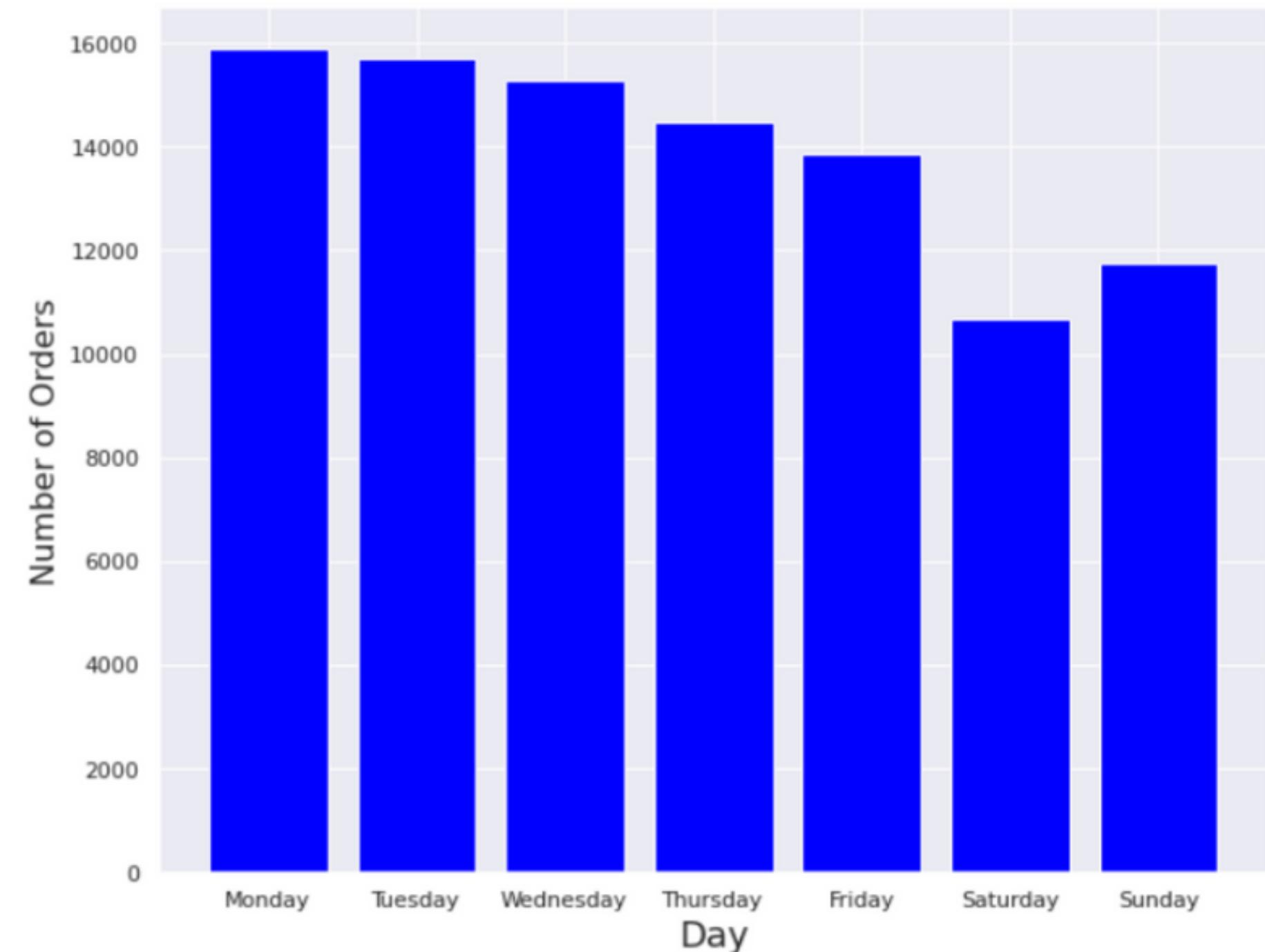
## 8 - MOST COMMON SHOPPING DAY OF THE WEEK BY CUSTOMERS

### OBSERVATION:

- Most of the transactions occur in weekdays (Monday - Friday), while weekend have less number of transactions.



Daily Order Trend



# RECOMMENDATIONS

- A. Initiate a customer feedback form to customers after purchase.
- B. Marketing Trending Products in Cities with low customer retention rate.
- C. Attracting new customers to introduce the best-selling product.
- D. Recruit those sellers that are able to sell the most trending products during a certain period of time.

