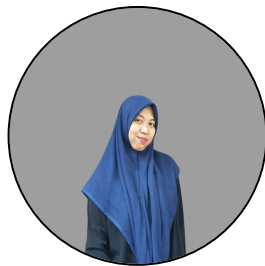


# Analyzing E-Commerce Business Performance with SQL and Tableau



**Created by:**

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“Aisyah is a machine learning and data enthusiast with the knowledge of data analysis, data cleansing, data visualization, and machine learning modelling. Seeking an entry level position of data analyst, data scientist or related role.”

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**Rakamin Academy**  
Career Acceleration School  
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“Measuring business performance is very important for every company. It will help you assess your current market, access new customers and find new business opportunities. This time, I will analyze business performance of an eCommerce by reviewing its customer growth, products quality and payment methods.

The [dataset](#) that will be used today was provided by Rakamin Academy. It has information of 100k orders from 2016 to 2018 made at multiple marketplaces in Brazil. Its features allows viewing an order from multiple dimensions: from order status, price, payment and freight performance to customer location, product attributes and finally reviews written by customers. I will perform the analysis using PostgreSQL and create the visualization using Tableau.”

# Data Preparation

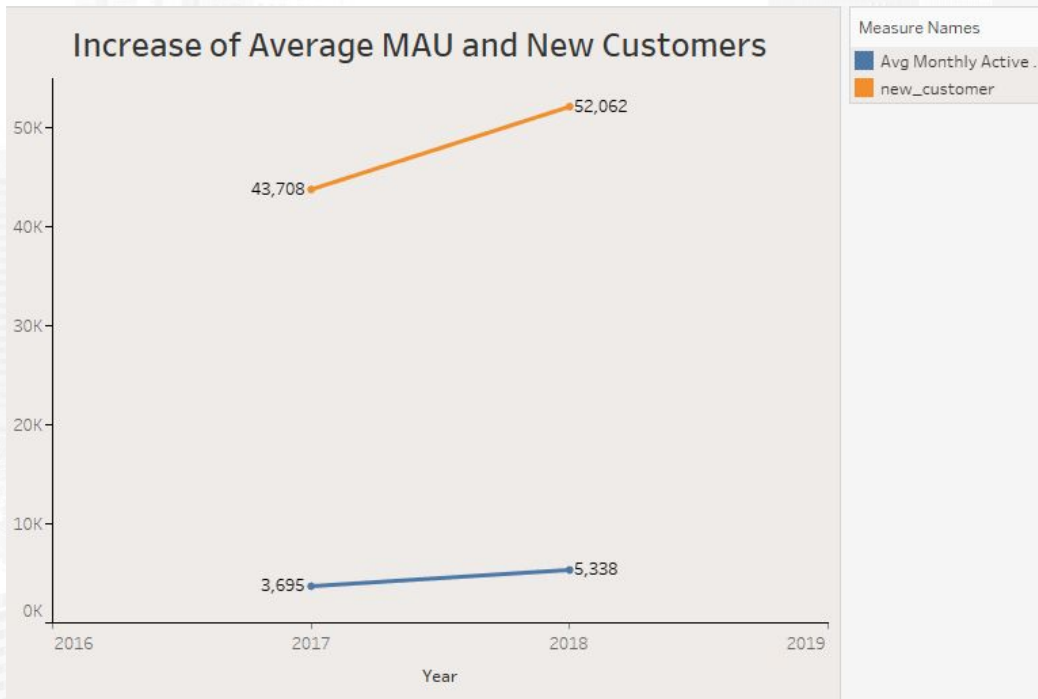
- **Create new database**  
ecommerce
- **Create 8 new tables**  
customers\_dataset, geolocation\_dataset, order\_items\_dataset, order\_payments\_dataset, order\_reviews\_dataset, orders\_dataset, product\_dataset, sellers\_dataset
- **Importing csv files into database**
- **Create ERD (Entity Relationship Diagram)**



# Annual Customer Activity Growth Analysis

	<b>year</b> double precision 🔒	<b>avg_monthly_active_user</b> numeric 🔒	<b>new_customer</b> bigint 🔒	<b>loyal_customer</b> bigint 🔒	<b>avg_order_per_customer</b> numeric 🔒
1	2016	109	326	3	1.009
2	2017	3695	43708	1256	1.032
3	2018	5338	52062	1167	1.024

# Annual Customer Activity Growth Analysis



- The data from year 2016 were not included in this graph because the data were taken from September, unlike year 2017 and 2018, which causes the result to be far behind them.
- From the above analysis, we can see that both Average MAU (Monthly Active Users) and New Customers have increased.



# Annual Customer Activity Growth Analysis

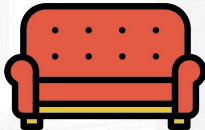




- On the other hand, the number of loyal customers (customers with repeat order) were decreased.

# Annual Product Category Quality Analysis

	year double precision	total_revenue real	best_product_category_by_revenue character varying	total_revenue_by_product_category real	total_canceled_orders bigint	most_canceled_product_category character varying	number_of_canceled bigint
1	2016	46653.74	furniture_decor	6899.3506	26	toys	3
2	2017	6.9213715e+06	bed_bath_table	580949.4	265	sports_leisure	25
3	2018	8.451628e+06	health_beauty	866808.9	334	health_beauty	27

# Annual Product Category Quality Analysis

	2016	2017	2018
<b>Best selling product category</b>			
<b>Revenue</b>	R\$ 46,653	R\$ 6,921,371	R\$ 8,451,628

By looking at the above output, we can see that best selling product category is always changing every year. There was also an increase in revenue over the year.



# Annual Product Category Quality Analysis

## Most cancelled product category

2016



2017

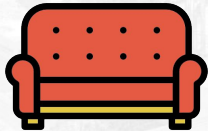


2018



## Best selling product category

2016



2017



2018



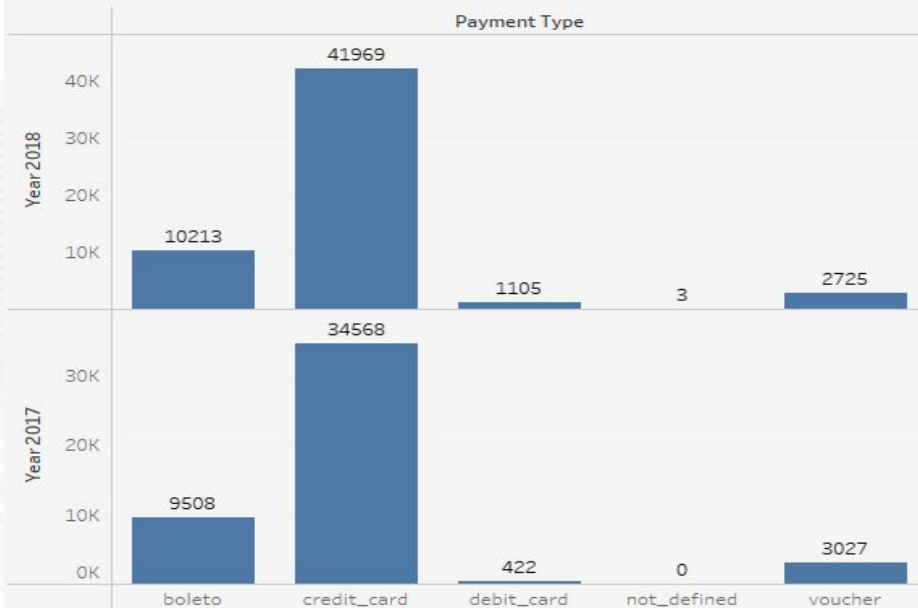
- Most cancelled product category is always changing over the year. But for year 2018, interestingly, both most cancelled product category and best selling product category were health & beauty.
- This could be because health & beauty category was dominating overall transactions made in 2018.

# Analysis of Annual Payment Type Usage

	payment_type character varying	year_2016 numeric	year_2017 numeric	year_2018 numeric
1	not_defined	0	0	3
2	debit_card	2	422	1105
3	voucher	23	3027	2725
4	boleto	63	9508	10213
5	credit_card	258	34568	41969

# Analysis of Annual Payment Type Usage

## Credit Card is The Most Popular Payment Type



- Overall, the most preferred payment method is credit card. Further analysis can be done on customer behaviour in using credit card, such as the selected tenor, which product categories are usually purchased with a credit card, etc.
- As for debit card, we can see that there was a significant increase from 2017 to 2018. On the other hand, voucher usage was decrease from 2017 to 2018.
- It could be due to promotions/collaborations with certain debit cards as well as a reduction in promotional methods using vouchers.